

4493

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Form 504
DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State: SW. Alaska

11-5613

DESCRIPTIVE REPORT.

Hyd. Sheet No. E 4493

LOCALITY:

Alaska Pen.

Deer I. Passage

191²⁵

CHIEF OF PARTY:

R.F. Luce

Instructions.

In accordance with supplemental instructions dated April 2, 1925 a wire drag examination within the 10 fathom curve was made of the shoal 3 miles SE from Thin Point, Alaska Peninsula. This shoal is marked by a black can navigation buoy whose approximate position is latitude $54^{\circ} 54'$. 8N; longitude $162^{\circ} 30'$. 9.W.

Type of Drag

The drag is described in "Experiments and complete data for short wire drag" as described February 18, 1925 by Charles Shaw.

It was 1200 foot long made up of 300 foot sections with 60" circumference canvas collapsible buoys. The towline used with the motorsailers for towing launches was 300 foot. The end weights were 75 pounds and the intermediate weights 30 pounds. The toggles were of cedar and as described in the above report.

A power dory was used for tender but in a little choppy weather was not satisfactory. When possible a larger tender should be used.

Canvas Buoys.

Canvas buoys 60" in circumference were provided the ship as it passed thru Seattle for the working grounds. These buoys worked all right in the emergency but were not of the make tested the previous February. Those tested held the air for several days much as a football but the ones used on the working grounds were very poor air retainers not lasting more than half a day in a proper inflated condition. For end buoys they are too small and dragged about even with the surface of the water.

The above report of Experiments with the short wire drag recommended 85" cir. buoys for end buoys and 65" cir. buoys for the intermediate positions.

Tests.

The tests of the drag under working conditions as recorded in the sounding record never showed any lift but as a rule showed from one to two feet of sag or no sag at all.

The toggles were designed with 15% excess buoyancy for this $1/8$ " dia. ground wire. The larger cedar toggles designed for the $3/16$ " dia. ground wire as used on the "Explorer" during 1923-1924 were designed for about 30% excess buoyancy. The "Explorer" ground wire showed no sag under proper conditions. Undoubtedly the sag could be overcome entirely in the $1/8$ " dia. by increasing the size of the toggle slightly to an excess buoyancy somewhere between the 15 and 30%.

Shoals.

As shown on photostat H 4374 in 44 feet of water the wire drag examination developed $38\frac{1}{2}$ feet, rocky, and of small area. This is in approximately latitude $54^{\circ} 54'$, 5 N. and longitude $162^{\circ} 31'$. 2 W.

In 54 feet of water the drag developed $36\frac{1}{2}$ feet, rocky, of small area. This is in approximately Latitude $54^{\circ} 54'. 7$ N. and Longitude $162^{\circ} 31'. 6$ W.

Approximate tidal reductions are applied to the above shoals.

No indication of the 19 foot sounding as mentioned in the instructions for the work in Latitude $54^{\circ} 54'\frac{1}{2}$ N and Longitude $162^{\circ} 31'$ W was found. The drag examination proves the non-existence of this depth.

Effective Depth.

The shoal was dragged to the approximate effective depth of 37 feet. (The exact tide reducer is not available as yet).

Splits

There are no splits in the work.

The drag was carried up as close to the navigation buoy as practicable, but of course the buoy was not removed allowing the spot at it to be dragged.

Respectfully submitted,

Charles Shaw

Charles Shaw,
Lieut., C. & G Survey.

Sheet inspected by Comdg. Officer Aug. 17, 19, 27, 1925

Date 1925	Letter	Volume	Positions	Soundings	Miles Statute	Vessels
Aug. 17.	A	1	10	----	$\frac{19}{4}$	G. L.
" 17	A	2	8	----	$\frac{5}{4}$	E. L.
" 19	B	1	54	----	7	G. L.
" 19	B	2	61	----	7	E. L.
" 19	B	3	1	1	----	M. D. Sounding Record
" 27	C	1	22	----	$1\frac{3}{4}$	G. L.
" 27	C	2	25	----	$1\frac{3}{4}$	E. L.
" 27	C	3	1	1	----	M. D. Sounding Record
Soundings in feet and place of reference M. L. L. W. Automatic tide gauge located at King Cove Plane of reference, reading on gauge= Lowest tide observed " " " " Highest tide " " " "						
			87	4	19	

Descriptive Report to accompany Hydrographic
Sheet "E", Deer Island Passage, S. W. Alaska.

Instructions:

In conformity with instructions to Commanding Officer Steamer Pioneer dated March 20, 1925 paragraph 20 and 25 hydrography was completed from the junction with hydrographic sheets 4374 and 4314 eastward thru Deer Island Passage to Cape Epld.

Locality.

Hydrography extended from Thin Point northeastward thru Deer Island passage to about the eastern tangent of Deer Island. The inshore hydrography of Deer Island extending over that section of the shore line shown by a full line on chart 8703 was completed, or about the northern half of the island. The inshore hydrography of Fox Island was done, and also of Morgan point on the mainland.

Spacing of lines.

Inside the 20 fathom curve sounding lines were placed not over 300 meters apart, and between the 20 fathom curve and deeper lines were spaced 600 meters apart.

Soundings.

Up and down soundings were taken with the trolley rig on the ship from about 20 fathoms to 28 fathoms; deeper soundings were taken with the sounding machine and with the vessel proceeding not over $4\frac{1}{2}$ knots an hour. Two tubes were used with each cast. Tubes were compared each day covering the sounding range.

Launch hydrography was done from shore to the ship work and on shoals. Up and down soundings were taken with the hand sounding machine above 15 fathoms and with hand lead below that depth.

Where necessary on account of shoal indications lines were split and shoals or banks developed. Lines were run normal to the shore and also normal to the direction of Deer Island passage.

Shoals and banks.

A small shoal with 3 fathoms of water and kelp was developed 1 mile due west from Δ West. ✓

A small shoal with 3 fathoms of water (no kelp) was developed 0.7 miles 22° True from Δ West. ✓

A shoal about $\frac{1}{2}$ mile long by $\frac{1}{4}$ mile wide was developed $1\frac{2}{3}$ miles 286° True from Δ West with $11\frac{1}{2}$ fathoms found. ✓

A shoal $2\frac{1}{4}$ miles 65° True from Δ White was found with 5 fathoms of water. This shoal within the 10 fathom curve is about $\frac{3}{4}$ miles long by $\frac{1}{2}$ mile wide. ✓

15

A shoal $2 \frac{2}{3}$ miles 194° True from Δ Cold with 14 fathoms of water was developed. This is of small extent and rises out of a general depth of 30 fathoms.

Two shoal spots with 10 fathoms of water 1.2 miles and 1.3 miles, 181° true and 196° True from Δ Cold respectively were developed. The 15 fathom curve encloses both spots and is about 1 mile long by $\frac{1}{2}$ mile wide, The shoal is steep and rises out of 40 fathoms.

Development of the 16 fathom spot on Hydrographic sheet H 4314 at entrance to Cold Bay showed no sounding less than 22 or 23 fathoms; soundings hard by the spot were 25 and 26 fathoms.

A bank of small area in mid channel $1\frac{1}{4}$ miles N true from Δ Point with 36 fathoms of water rises out of a general depth of 50 fathoms.

A bank with 15^W fathoms was found $1\frac{1}{2}$ miles due east from \odot Sap off the north east shore of Deer Island. This is in a general depth of about 24 fathoms.

The above soundings are not yet reduced for tide.

Deer Island Passage.

From the eastern end of Deer Island Passage the center of the channel shows in general depths about 65 fathoms and extending westward to north of Δ Saw. From here the bottom is quite irregular with banks and shoals, and in addition gradual shoaling up to the 10 fathom curve between Thin Point and Δ West on Deer Island. From Thin Point the bottom flares out with a gradual slope, the 10 fathom curve being $1\frac{1}{2}$ miles off Thin Point and the 20 fathom curve 3 miles in the direction of Δ West. Extensive splitting of lines and development has been done where indications required.

Inshore Hydrography.

In general the inshore hydrography of Deer Island showed a gradual slope to deep water. The western shore between Δ Doe and \odot Flo is quite foul with extensive kelp and sunken rocks. A large kelp patch extends $\frac{1}{2}$ mile off \odot At but in general the kelp extends only about $\frac{1}{4}$ mile off shore.

The eastern shore between \odot Arm and \odot Pal about $\frac{1}{2}$ mile off is foul and kelp is extensive.

The inshore soundings between Δ Cold and Δ King, Morgan Point show the bottom to be steep-to and clear. Kelp extends off shore about 300 meters.

The boat sheets show the kelp limits.

Anchorage.

Excellent anchorage in all but northerly weather may be had between Fox Island and Δ Saw, Deer Island in 15 to 20 fathoms of water, mud bottom. In strong northerly weather it blows fresh out of Cold Bay, and anchorage then at this location would not be desirable. In northerly weather vessels may anchor in King Cove with safety with proper precautions.

Physical features.

Cape Bold, Morgan Point and Deer Island are all bold in contour and with elevations more than 1000 feet. Fox island is about 250 feet high. Thin point in general is only about 50 feet high with a lone hill about 350 feet high. This hill is conical and quite conspicuous. There are no trees but occasional patches of low alder. Tundra is prevalent.

Scale of sheet.

The scale of the hydrographic sheet is 1:20,000.

Charles Shaw

Charles Shaw,
Lieut., C. & G. Survey.

October 25, 1925.

*Sheet inspected by Comdg. Officer June 15, 16, 20, 25, July 3, 6, 7, 8, 9,
Aug. 1, 4, 5, 10, 27, 29, Sept. 1, 2, 1925 R. Luce*

Comdg. Officer

Statistics Sheet No.

Date 1925	Letter	Volume	Positions	Soundings	Miles Statute	Vessels
June 15	A	1	63	14	19.2	Ship
" 16	B	1	40	116	13.5	"
" 20	a	5	48	192	12.3	M.S. 8171
" 25	b	5	81	196	15.0	" "
" 25	a'	7	57	254	19.5	" 9843
July 3	C	1	23	59	6.1	Ship.
" 6	D	1-2	101	157	23.	"
" 7	E	2	55	93	14.5	"
" 8	F	2-3	181	267	29.2	"
" 8	c	5	57	86	5.6	M.S. 8171
" 9	G	3	112	201	29.	" "
" 29	d	8	143	268	17.0	L. Alpha
" 30	e	1	7	7	$\frac{1}{8}$	" "
Aug. 4	H	3	100	311	20	Ship
" 5	J	3-4	39	103	6.4	"
" 10	d	5	102	300	16.0	M.S. 8171
" 27	a	9	43	114	6.5	S. Launch
" 29	b	9	136	223	18.	" "
" 29	e	5-6	128	357	24.0	M.S. 8171
" 29	b'	7	97	290	16.	M.S. 9843
Sep. 1	c	9	30	108	6.	S. Launch
" 2	d	9-10	147	300	23.0	" "

An automatic tide gauge at King Cove was used for this work.
 Plane of reference, reading on gauge = 1790
 Lowest tide observed " " " = 4016
 Highest tide observed " " " = 340.30

U W P
MAR 1 1926

~~Division of Hydrography and Topography:~~

Division of Charts:

Tide reducers are approved in
13 volumes of sounding records for

HYDROGRAPHIC SHEET NO. 4493

Locality: S. W. Alaska

C Chief of Party: R. F. Luce in 1925

Plane of reference is
5.7 ft. on tide staff at King Cove

For reduction of soundings, condition of records satisfactory
except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted
3. Time meridian not given at beginning of day's work.
4. Time (whether A. M. or P. M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

No reducers entered by field party.



G. P. ...
Chief, Division of Tides and Currents.

Report on Verification and Inking Soundings N. 4493.

The field protracting and plotting were excellent. Only on one day (1-24 a Steam Launch 1915) was any plotting done over and this was probably due to the weak fix.

C There are several shoals (relative to adjacent work) that are not dangerous to navigation but where additional work is desirable if a party is in this vicinity again. They are easily spotted by looking at the smooth sheet.

Sept. 10, 1926

F. M. Albert

Report on Verification of Supplemental Wire Drag.
H. 4493.

The records were well kept. In the verification of the protracting a small though not uniform shift was found from the field plotting. This was not large enough to warrant correcting. As it was found in the whole drag work the drag strips should be relatively correct.

The 6 fathom and the 6½ fathom soundings were obtained in conjunction with C day. On B day these spots were cleared by 37 feet. This may be due to lift of the bottom wire, though the descriptive report says no lift was observed and at times 1 or 2 feet of sag were observed.

J. M. Albert

Sept. 10, 1926

E. P. C.

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

AND REFER TO NO. 11-DRM

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON April 11, 1927.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4493

Deer Island Passage, Alaska Peninsula

Surveyed in 1925

Instructions dated March 20, 1925 and April 2, 1925 (PIONEER)

Chief of Party, R. F. Luce.

Surveyed by R. F. Luce, Charles Shaw, etc.

Protracted and Soundings plotted by B. Williams.

Verified and inked by F. M. Albert.

1. The records conform to the requirements of the General Instructions except that in some of the volumes very few bottom characteristics are noted and very few courses are given. Also in many places the notation "rock" is used when it is clearly evident that "rocky" is meant.
2. The plan and character of development satisfy the General Instructions.
3. The plan and extent of development satisfy the requirements of the specific instructions except that in several places additional lines should have been run. These will be noted in subsequent paragraphs.
4. The usual depth curves could be drawn except in some places close inshore where the kelp prevented the sounding lines from extending further inshore.
5. This sheet was plotted in the office by a field officer under the supervision of the Chief of Field Work pursuant to an experimental scheme of doing the major portion of the smooth plotting in the office. In this connection it might be said that the results as far as this sheet is concerned were satisfactory and no doubtful points remain unsolved.
6. The junctions with the contemporary surveys H. 4314, H. 4374, H. 4492, H. 4491 and H. 4490 are satisfactory.

7. The drag work on this sheet definitely disproves the 19-foot sounding (authority, H. 3306) 3 miles southeast of Thin Point. The least depth found was 37 feet (grounding), which was also cleared by a 37 ft. drag. The least actual depth obtained was 39 feet and it is possible that the drag had sagged a couple of feet on the day it grounded (see Descriptive Report). However, 37 feet will be charted here. It is now shown on the standard and aid proof as 6 fathoms.
8. Additional work will be required in the following places whenever operations are resumed in this location. The work should preferably consist of wire drag work:
- The 12 fathom shoal in Lat. $54^{\circ} 56' 650$ m., Long. $162^{\circ} 27'$ * $8\frac{1}{2}$ fms. 370 m.
 - The 5 fathom shoal in Lat. $54^{\circ} 58' 800$ m., Long. $162^{\circ} 29'$ * $4\frac{1}{2}$ fms. 700 m., including the area inside the 10 fathom curve.
 - The 15 fathom shoal in Lat. $54^{\circ} 59' 1/2'$, Long. $162^{\circ} 25' 1/2'$ * 13 fms.
 - The 2 ten fathom shoals in vicinity of Lat. $55^{\circ} 00' 3/4'$, * $9' + 9\frac{1}{2}$ fms. Long. $162^{\circ} 25'$.
 - The 14 fathom shoal in Lat. $54^{\circ} 58' 1/2'$, Long. $162^{\circ} 12' 1/2'$ * 10 fms.
9. Attention is called to the fact that the 16 fathom sounding charted in Lat. $54^{\circ} 59' 840$ m., Long. $162^{\circ} 29' 570$ m. (authority H. 4314) was not found by this party. The depths obtained in the immediate vicinity are 26 and 27 fathoms. An error was without doubt made on the original survey in reading the leadline, 17 fathoms being read instead of 27. Both depths are marked by a red rag. This 16 fathom sounding will therefore be removed from the charts.
10. Character and scope of surveying - very good.
Field drafting - excellent.
11. Reviewed by A. L. Shalowitz, April, 1927.

* Ad. Wk. on H-6590(1940)
revealed shoaler depths
as indicated. H.W.M. 6/19/41

Approved:

Chief, Section of Field Records (Charts)

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

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

4493

HYDROGRAPHIC TITLE SHEET

The finished Hydrographic 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.

Register No. E4493

State ^{SW} Alaska

General locality Alaska Peninsula

Locality Deer Island Passage

Chief of party R. F. Luce

Surveyed by R. F. Luce, Charles Shaw, and W. Weidlich, F. W. Hough, A. J. Hoskinson,

Date of survey June 15 - Sept 8 1925. WD. - Aug. 17 to 27, 1925
Revised during June 15 to Sept. 2

Scale 1 - 20,000

Soundings in Fathoms

Plane of reference M.L.L.W.

Protracted by B.W. Soundings in pencil by B.W.

Inked by F.M.A. Verified by F.M.A.

Records accompanying sheet (check those forwarded):

Des. report, _____ Tide books, _____ Marigrams, 3 Boat sheets,

10 Sounding books, * Wire-drag books, _____ Photographs.

Data from other sources affecting sheet

Remarks: The sheet forwarded is a BOAT SHEET together with two additional boat sheets for launch work in the same area.

* 3 vols. W.D. are included - EK

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

4493

HYDROGRAPHIC TITLE SHEET
WIRE DRAG

The finished Hydrographic 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.

Register No. 4493

State S. W. Alaska

General locality Alaska Peninsula - Deer I.

Locality Off West Cape ~~Ship Point Shoal~~

Chief of party R. F. Luce

Surveyed by Charles Shaw in charge G. L. W. Weidlich in charge E. L.

Date of survey August 27, 1925.

Scale 1:20,000

Soundings in Feet.

Plane of reference

Protracted by Soundings in pencil by

Inked by Verified by F.M.A.

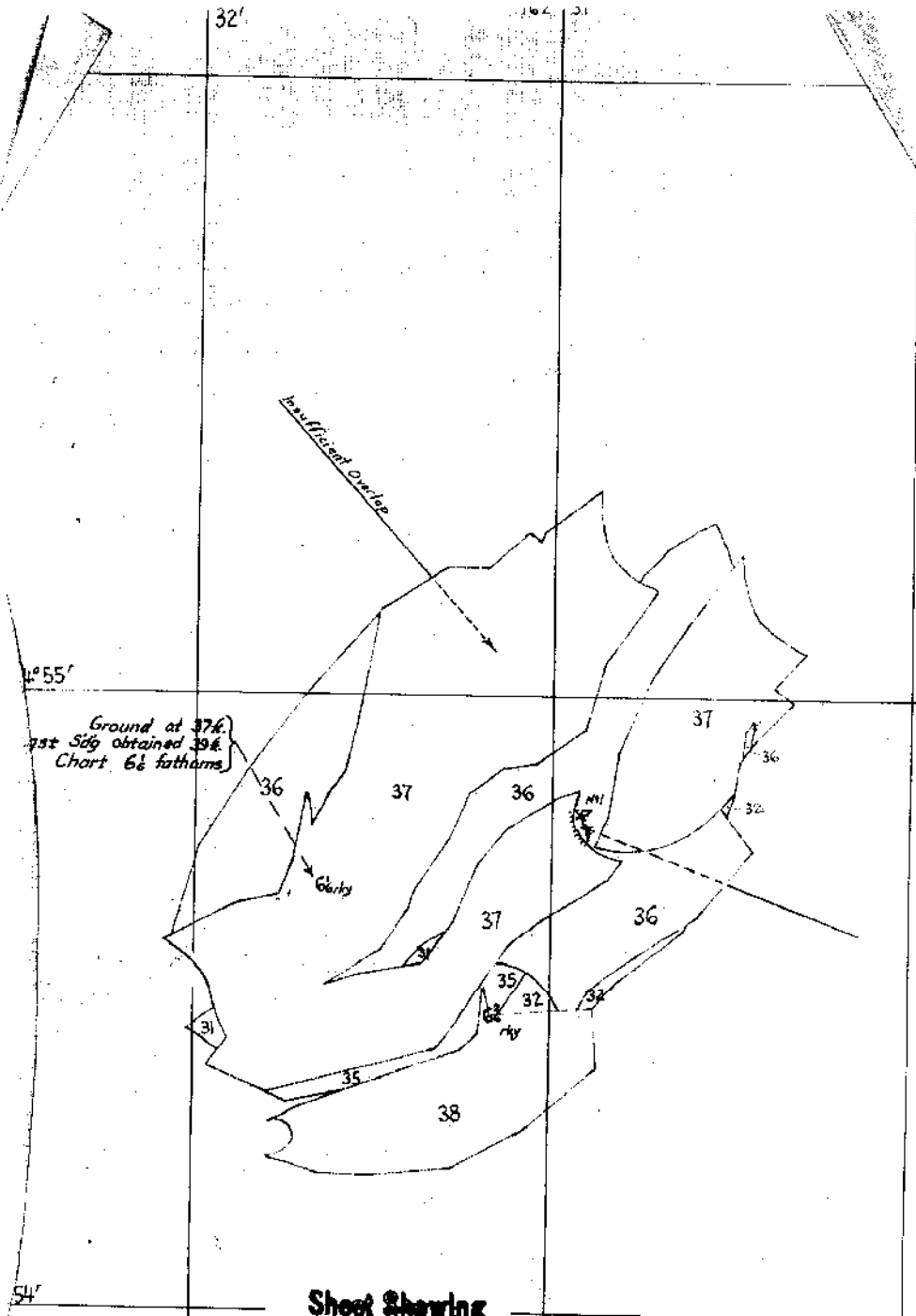
Records accompanying sheet (check those forwarded):

1 Des. report, --- Tide books, --- Marigrams, 1 Boat sheets,

* Sounding books, 2 Wire-drag books, --- Photographs.

Data from other sources affecting sheet

Remarks: Oct. 23, 1925
approved. R.F. Luce
Comdg Sta. Pioneer



**Sheet Showing
DRAGGED AREAS AND DEPTHS**

Register No. 4493

Colored figures within inclosed areas indicate the maximum effective depths to which the respective areas have been dragged.

Unswep areas (splits) are indicated by black arrows, and are surrounded by hachured lines.

Soundings obtained by the wire drag party are shown in black.

All depths are shown in FMS. at Mean Lower Low Water

Prepared by F.M. Albert.