

4856
4856

Diag. Cht. No. 8502-2 & 8552

4856

Form 504

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

....., Director

State: Alaska

DESCRIPTIVE REPORT

Topographic } Sheet No. 7 4856
Hydrographic }

LOCALITY

Gulf of Alaska

Off shore - Montague Island to

Seal Rocks

1928

CHIEF OF PARTY

R.R. Lukens

GOVERNMENT PRINTING OFFICE

DESCRIPTIVE REPORT.

Hydrographic Sheet No.7

1: 200,000.

R.A.R. Control

Str. SURVEYOR R.R.Lukens, Comdg.

GULF OF ALASKA

1928.

DESCRIPTIVE REPORT. 4856

Hydrographic Sheet No. ~~4~~

Scale 1:200,000

Str. SURVEYOR

1928. R.R. Lukens,
Chief of Party

AUTHORITY Authority for this work is contained in the Director's instruction to the Commanding Officer dated Feb. 18, 1928 and in supplemental instructions dated July 21, 1928.

LIMITS On the north, this sheet joins hydrographic sheet #4731. The hydrography extends westward from the 148th meridian. The area to the westward has never been surveyed.

METHODS Most of the work on this sheet was done with the fathometer using RAR control. On a few occasions when the peaks were visible, visual fixes were used. Nearly all the fathometer soundings are red light soundings. In a few places it was necessary to use the white light method. Vertical casts were made at intervals ranging from 20 to 30 minutes. These served as checks on the fathometer and indicated the character of the bottom.

ARRANGEMENTS The chronograph and the fathometer are both located in the pilot house of the SURVEYOR. The radio room is located just below the pilot house, and communication is maintained by a speaking tube. Bombs were fired from the forward deck just below the pilot house. The ship's office was used by the electrician in making up his bombs. All units were thus close together and in easy control of the officer in charge.

RECORDING The details of the bomb were recorded in the sounding record, and the chronograph tapes were filed in envelopes. On the face of each envelope was recorded all data in connection with the bomb and the computation of the distances from each shore station. These data were afterward copied into the "Bomb record". Bombs were fired at intervals of from 20 to 30 minutes. The usual routine was to take a vertical cast on the first sounding following the bomb.

Soundings were recorded every 2 minutes. In case of irregular soundings, additional soundings were recorded to show the profile of the bottom. This method was found to be more satisfactory than simply recording the changes as outlined in the hydrographic manual. It was thought that that method was designed for the long smooth slopes found on the Atlantic coast.

WEATHER CONDITIONS More than one half of the work was done under adverse weather conditions with heavy southerly winds and seas. With a heavy surf, the hydrophones became noisy, but the bombs seemed to come in louder so that the work was seldom held up. On a few occasions however the surf noises became so great that bombing had to be discontinued.

SILENT AREAS In general, the bombs were received with greatest intensity when the ship was on the shoalest part of the banks. When passing off these banks into deep water, it was difficult to get bombs through and we had many failures. Very often only one station would be successful. As the distance from the bank increased, the bombs would begin to come in with greater force. When at the southern limit of the sheet, in 70 fathoms on Portlock Bank, pint bombs would bring in nearly a full kick. A few miles north of this bank conditions were such that quart bombs often failed. In this connection, it might be noted that the amount of explosive used did not make a great difference in the results, although it was noted that a quart bomb always gave a slightly better kick than a pint bomb.

Much difficulty was experienced in getting bombs through in the vicinity of Lat. 59-12, Long. 148-15. The bombs would be heard at the shore stations but would come in as a crescendo rather than as a sharp sound. The relay might trip on any part of the sound. As a result, the results plotted so erratically that they had to be rejected. It was evident that the topography of the bottom was such that the sound was badly broken up and must have reached the hydrophones after travelling many different routes. In cases where bombs failed, the line was plotted by adjusting between the two nearest fixed positions.

VELOCITY TESTS Whenever possible, velocity tests were made. A number of good tests were had on KGHM, but only a few were obtained on KGHS. The results range between 1464 and 1471 meters per second. The final result came out 1468.7 meters per second. The value of 1470 was used on the boat sheet.

TEMPERATURES Surface and bottom temperatures were observed at the beginning and ending of each days work. Through an oversight, the serial temperatures as called for in the Hydrographic Manual were not observed. Surface densities were also taken when temperatures were obtained.

All observed temperatures were plotted and a smooth curve drawn. Tabular values were then scaled from this curve. The abstract of temperatures, curves and tables are forwarded with the sheet.

SLOPE CORRECTIONS No corrections for the slope have been made. There are no long uniform slopes on the sheet. Along the edges of the banks, the slopes are such that the probable error in horizontal position would more that make up for any error in depth due to the slope.

TIDAL DATA All soundings on the sheet were reduced from the automatic gauge at Seward.

PORTLOCK BANK The offshore lines ended on Portlock Bank. At this distance, the fixes were very weak and for that reason no attempt was made to develop the bank. For work on this bank it will be necessary to locate a hydrophone further to the westward. The bottom on this bank consists of mud and gravel.

SPACING OF LINES In some places, the lines are not spaced as closely as required by the instructions, but considering the smoothness and character of the bottom and the absence of rock formation, it is believed that the spacing is adequate. All this area has been extensively fished over by halibut fishermen and no shoals have ever been reported. These fishermen search the bottom carefully in looking for new fishing banks.

This sheet is the first RAR control work done by this party, and as all except one officer were entirely green, some little time was required to "shake down"

EXPLOSIVES Bombs were generally made using a tin can and T.N.T. Several cases of dynamite were used and very good results were had. Dynamite is easy to use and the amount of explosive can be varied by the number of sticks used. It is probably more dangerous than T.N.T. for it is not so stable. After a little experience, very few bombs failed to explode.

DANGERS No dangers were found in the area surveyed, and there are no indications that any dangers exist.

CURRENTS. Considerable current was experienced. It appeared to be tidal setting parallel with the trend of the coast. In running offshore lines, the current seemed to change somewhere near the times of high and low waters. The predominating current seemed to set to the westward, however.

SEA OTTERS Many years ago, this region was a great sea otter hunting ground. About 20 years ago they became nearly extinct, and all hunting was prohibited. During the past season, several sea otters were seen in the locality covered by this sheet, and it is believed that they are rapidly coming back.

OFFICE WORK. The tapes were checked and distances recomputed by Messrs. Grenell and Mathisson. Positions and soundings were plotted by Mr. Mathisson. Most of the position plotting was done during my absence on leave. I have inspected the work and believe it to be well done.

Respectfully submitted,


R.R. Lukens, Chief of Party

STATISTICS

Hydrographic Sheet No. 7

Str. SURVEYOR

Date	Day	Vol.	Positions		FW	Soundings			Stat. mi.
			B	T		FR	S	T	
July 12	A	1	8	10	7	107	2	116	45.0
" 31	B	1	22	23	63	192	18	273	97.0
Aug. 2	C	1	7	52	0	305	21	326	101.5
" 9	D	1	4	42	0	262	16	278	94.0
" 13	E	1	22	25	17	325	20	362	119.0
" 14	F	2	24	30	0	398	19	417	144.0
" 15	G	2	18	31	0	350	21	371	110.7
" 16	H	2	24	26	0	376	23	399	130.0
" 17	J	2 & 3	26	26	0	373	22	395	140.3
" 18	K	3	14	14	0	206	12	218	77.0
" 20	L	3	12	15	0	193	12	205	64.0
" 21	M	3	25	27	0	376.	24	400	137.5
" 22	N	3	16	22	0	185	16	201	58.0
" 24	P	3	12	13	0	128	9	137	57.0
" 27	Q	3 & 4	14	23	0	191	14	205	61.0
" 28	R	4	23	28	0	197	18	215	73.6
" 30	S	4	38	67	0	382	35	417	137.0
" 31	T	4	12	16	0	113	11	124	44.5
Sept. 4	U	4	15	25	0	144	10	154	56.7
" 5	V	5	20	30	0	202	19	221	68.0
" 6	W	5	36	48	0	431	31	462	131.0

Date	Day	Vol.	Positions			Soundings			Stat. Mi.
			B	T	FW	FR	S	T	
Sept. 7	X	5	10	21	0	137	11	148	42.0
Oct. 1	Y	5	0	46	0	223	10	233	56.0
" 7	Z	5 & 6	0	74	0	369	20	389	67.5

TOTAL			402	734	87	6165	414	6666	2092.3
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E.A.L.

(For Files Field Record Section)

Division of Hydrography and Topography:

Mar. 25, 1929.

Division of Charts:

Tide Reducers are approved in
9 volumes of sounding records for

HYDROGRAPHIC SHEET 4856

Locality: Gulf of Alaska

Chief of Party: R. R. Inkens in 1928

Plane of reference is Mean lower low water, reading
2.8 ft. on tide staff at Seward, Alaska

~~XXXXXXXXXXXX~~

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 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.

Paul C. Whitney

Chief, Division of Tides and Currents.

Section of Field Records.
Report on H. 4856.

Montague I. to Seal Rocks - Offshore
Gulf of Alaska.

Surveyed in 1928 (Instruction, dated
Feb. 18, 1928, July 21, 1928)
Surveyor

Chief of Party - R.R. Lukens.
Surveyed by R.R. Lukens
Contracted & ^{performed} by J.C. Mathisson
Verified & Inked by S. Pisegari

1. The records conform to the requirements of the General Instructions except that the compass deviations were omitted.

Several checks on lines between RAR fixes for deviation showed that the deviations of the compass were small and negligible and could have no appreciable effect on the plotting in general.

2. The plan and character of development fulfill the requirements of the General & Specific Instructions.

3. The sounding line crossings appear ^{very} satisfactory where indicated, though more crossings should be desirable, yet upon close inspection of the fathometer work it appears the work over the whole sheet is good.

4. The usual depth curves can be completely drawn.

5. The field plotting in a few minor cases were changed where an improvement was worth while and justifiable, but in no case was the work found grossly erroneous. The checking of the RAR fixes were found correct.

The work on "A" day (1A to 10A) apparently was discredited by the field party and was not plotted on the sheet.

After study on the problem involving the rejection of this day's work, pro. 5A to 10A were retained and plotted.

(5 cont.) This information adds considerably to the sheet and was worth while saving. Plotting approved by Chief of Field Records Sect.

The work between pos. 32c and 35c inclusive, was rejected by C. O. F. R. Section at the instance of the note in the sounding record "that soundings are incorrect".

The line, however, was rerun, beginning with 36c and appears satisfactory.

The locations of positions 1T to 9T are doubtful. A note in the record to that effect is mentioned. The work in this vicinity, however, is sufficiently covered by other lines.

6. The junction with H. 4731 at the North is satisfactory and is the only sheet at this date adjoining H. 4856.

7. A number of vertical casts are checked very closely by the fathometer soundings with only a few exceptions. The largest differences were studied for any possible error in either method and it was decided by C. O. F. R. Sect. to let the soundings stand.

8. Attention is called etc. -----

9. The character + scope of the surveying - good.
Field drafting - good.

10. Reviewed by E. Pisevari. May 13, 1929.

8. Attention is called to a 50 fathom sounding shown on chart 8502, lat. $57^{\circ}17'$, long. $148^{\circ}26'$, which first made its appearance on Chart 8500 published in 1899 (now discontinued).

The sounding plots where the late survey shows depths of 56 and 57 fathoms with no apparent indication of shallower depths, and the bottom being mud and fairly level. Its source is from work not done by this bureau, probably the old Russian Charts or Notice to Mariners, and like other data of this character its accuracy is very doubtful. It is recommended that it be not used for charting.

G. H. Hilde
Chief, Div. of Hydro and Topo

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

C. & G. SURVEY
L. & A.
MAR 18 1929
Acc. No.

REG. NO.

4856

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 7

REGISTER NO. 4856

State Southwest Alaska.

General locality Gulf of Alaska.

Locality Off shore - Montague Island to Seal Rocks.

Scale 1 : 200,000 Date of survey July - Oct., 1928

Vessel Str. SURVEYOR.

Chief of Party R. R. Lukens

Surveyed by R. R. Lukens.

Protracted by J. C. Mathisson.

Soundings penciled by J. C. Mathisson.

Soundings in fathoms feet

Plane of reference M. L. L. W.

Subdivision of wire dragged areas by

Inked by

Verified by

Instructions dated Feb., 18,, 1928

Remarks:

9 Vols.
1 B.S.
Vel. Inst
Panch. Bomb. Recorder