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4865

Doc. Chart No. 5702

Form 504	
DEPARTMENT OF COMMERCE	
U. S. COAST AND GEODETIC SURVEY	
E. Lester Jones, Director	
C. & G. SURVEY	
L & A	
APR 6 1929	
Acc. No.	
State: California	
DESCRIPTIVE REPORT	
Topographic Hydrographic	Sheet No. 14 Field 4865
LOCALITY	
South of Point St. George <del>Northern California</del>	
Crescent City Harbor Approaches	
1928	
CHIEF OF PARTY	
F. G. Engle, H. & G. Engr.	

GOVERNMENT PRINTING OFFICE

4865

DESCRIPTIVE REPORT  
to accompany  
HYDROGRAPHIC SHEET NO. 14

Scale 1:10,000

CRESCENT CITY HARBOR AND APPROACHES,  
CALIFORNIA

Party of the Str. Discoverer  
Instructions dated March 13, 1928 F. G. Engle, H & G Eng'r, Comdg.  
Surveyed by C. M. Durgin & R. W. Knox  
July 28 - Sept 12, 1928  
Launch Martha and Starboard Motor Sailor

**SURVEY METHODS:** A twelve-pound hand-lead was used in the sounding of this area, with the exception of the more shoal motor sailor work, where an eight-pound lead was used. The lead lines <sup>(Plaster-Bronze cord)</sup> were carefully made and frequently checked, and no trouble was experienced in keeping the corrections within one percent of the depth below the reference plane. In the greater depths the launch was caused to lose headway, or even stop, while the soundings were obtained. The season's instructions authorized the dragging of harbors, channels, etc., and while the Chief-of-Party was of the opinion that the dragging of this harbor and approaches was desirable, neither the time nor the personnel were available. Because no drag was to be used, special effort was made to verify the shoal soundings shown on bromide H690, furnished the party by the office. The method used in these cases was to maneuver the launch over the reported shoal, heave a marker buoy overboard and feel around with the line and lead. Three leadlines were generally used; from the bow, midships and stern.

**DANGERS:** The coast line from Crescent City north is very foul, but all dangers are limited to seaward by a line of islets and breakers extending south from Castle Rock and parallel to the coast. This line includes O White, Connection Rock, O Gull, Etc., and they themselves constitute the chief menaces to navigation. The position of all islets, breakers and rocks that lay far enough off the beach to be a menace to even the smallest fishing boats was checked by the hydrographic party by running close by in the motor sailor and securing a fix. The important of these dangers are:

A breaker, bearing at about <sup>3/4</sup> ~~1/2~~ tide, in lat. 41 44 590 m. long. 124 12 980 m., position 51 F. This is especially important because of the tendency while running south to Crescent City to cut in toward Steamboat Rock after passing O Gull.

2 Mussel Rock, a small, low rock in lat. 41 43 1320 m., long 124 10 1000 m.

3 A sunken rock, breaking only in a heavy swell, in lat. 41 43 630 M long. 124 10 930 m. Positions 27 h and 31 h. Least depth 14 feet.

A pair of breakers in lat. 41 44 1070 m., long. 124 12 960 m., the easterly awash at high water (position 12 F) and the westerly awash at 2/3 tide (position 13)

5 A breaker in lat. 41 44 720 m., long. 124 11 1110 m., awash only at the lower-low tides. Position 1 g. This is important, as the fishing boats in rounding Steamboat Island and the end of the breakwater tend to cut close in.

The breakwater is being extended See H. 4921 + next

6 Fauntleroy Rock is well known.

7 A breaker, awash at about 1/3 tide lays 60 m. off the end of the Shell Co. Oil dock; positions 37 h and 38 h.

Three sunken rocks:

8 400 m. S W 1/2 S of Whaler, position 21 g; least water 5 feet.

9 250 m. S x W 1/2 W of Whaler, position 23 g; least water 7 feet.

10 420 m. S of Whaler, position 146 a; least water 4 feet.

11 A breaker, bearing at about 1/2 tide, in lat. 41 44 630 m., long. 124 12 310 m. Position 8 f.

Other dangers are included the paragraph headed Comparision with Previous Surveys.

ANCHORAGES: There is but one anchorage on the sheet - that of Crescent City Harbor. A recently completed breakwater extends about 700 m. S x E of Battery Point, affording excellent protection from the north-west. In heavy weather the seas sweep over the breakwater during the hours of high water. The DISCOVERER anchored in approximately the position of the symbol shown on the smooth sheet, in about 24 feet. Fishing boats as a rule anchored to the northeast of the Hobbs-Wall Co. dock, in 8 to 11 feet of water. During southerly weather many of the small fishing boats run behind this dock and anchor, thus getting what protection the pilling may offer. In heavy southerly weather, all leave.

being extended See H. 4921

TIDAL NOTE

The auto-portable tide gauge at Crescent City, Calif. Latitude 41-45 North, Longitude 124-12 West was used in reducing the soundings on this sheet.

The plane of mean lower low water on the gauge was used. The reading of mean lower low water on this gauge was 3.00 feet.

The tabulations for highest and lowest tide observed have not been made.

COMPARISON WITH PREVIOUS SURVEYS: Attempts were made to verify the following shoal soundings appearing on bromide H890. According to a notation appearing on this bromide, all soundings thereon refer to a plane 1.5 feet below mean lower low water.

Sndg on bromide	Latitude	Longitude	Least water obtained	Position	Time spent in attempting to verify old sdg
	m	m			
12 6 1/2 fms	41 44 460	124 12 600	60 feet	39 33h-35h	40 minutes
13 13 ft	41 44 340	124 12 250	15 do	13 41c	40 do
14 18 ft	41 44 370	124 12 380	49 do	18 41c	40 do
16 8 3/4 fms	41 44 185	124 11 1310	58 do	53 32h	15 do
17 8 ft	41 44 600	124 11 1310	26 do	8 2g	30 do
17 14 ft	41 44 635	124 11 960	26 do	14 32d-33d	30 do
18 15 ft	41 44 640	124 11 690	24 do	15 26d	30 do
19 13 ft	41 44 460	124 11 985	33 do	13 79d-80d	20 do
20 3 1/2 fms	41 44 360	124 11 730	32 do	20 91d	12 do
21 4 1/2 fms	41 44 210	124 11 780	42 do	92d-12g	12 do
22 4 1/2 fms	41 44 120	124 11 600	27 do	27 98-99d	13 do
23 12 ft	41 44 540	124 11 330	5 do	2 21g	50 do
24 13 ft	41 44 500	124 11 220	15 do	13 16g	15 do
24 7 ft	41 44 550	124 11 90	7 do	7 23g	15 do
25 15 ft	41 44 420	124 11 80	14 do	15 2h	15 do
25 14 ft	41 44 440	124 11 20	23 do	14 2 1/2 h	30 do
26 7 ft	41 44 310	124 11 260	10 do	7 29g	40 do
27 3 1/2 fms	41 44 310	124 11 100	14 do	20 6g	30 do
10 17 x 2 ft	41 44 380	124 11 70	4 do	Z 146a	-
28 3 1/2 fms	41 44 280	124 10 1230	16 do	20 4h	10 do
29 4 1/2 fms	41 43 1610	124 10 1250	39 1/2 do	29 204-5d	15 do
30 3 3/4 fms	41 43 1790	124 11 250	22 do	22 8e	25 do
31 5 1/2 fms	41 43 710	124 10 770	44 do	38 6h	20 do

In addition, several other shoals were sounded out in the course of running lines over some of the above. All kelp patches in the harbor and approaches were sounded out.

\* \* \*

Due to congestion of soundings, no attempt was made to draw the depth curves or plot bottom specimens in the harbor proper. Much of the development work was plotted on a vellum overlay, as recommended in the Hydrographic Manual.

*Robert W. Knox*  
Robert W. Knox,  
Jr. H & G Engr,

Approved and forwarded:

*F. G. Engle*  
F. G. Engle,  
H & G Engr,  
Commanding


STATISTICS TO ACCOMPANY HYDROGRAPHIC SHEET # 14

DATE	DAY	BOAT	VOLUME	POSITIONS	SOUNDINGS	STAT. MILES	SDG.LINE
7/28/28	a	MARTHA	1	32	84	5.8	
30/28	b	"	1	13	108	2.5	
8/1 /28	c	"	"	99	365	17.0	
2/28	d	"	"	50	294	9.2	
4/28	e	"	"	46	173	8.6	
7/28	f	"	"	56	209	8.2	
9/28	g	"	"	21	70	3.5	
12/28	h	"	"	64	181	6.7	
14/ 28	k	"	2	37	105	4.8	
15/28	l	"	"	39	113	5.6	
16/28	m	"	"	49	153	6.5	
18/28	n	"	"	59	222	10.9	
20/28	p	"	"	39	137	6.0	
21 /28	q	"	"	42	160	8.0	
22/28	r	"	"	123	435	20.0	
27/28	s	"	"	15	44	2.6	
28/28	t	"	3	143	500	22.3	
9/ 7/28	u	"	"	66	206	8.0	
8/28	v	"	"	23	66	2.4	
				<u>1016</u>	<u>3625</u>	<u>158.6</u>	
8/29/28	a	S.M.S.	1	205	983	23.0	
30/28	b	"	"	174	718	18.0	
"	"	"	2	23	127	5.6	
21/28	c	"	"	47	114	3.8	
9/ 4/28	d	"	3	206	581	11.0	
5/28	e	"	"	62	159	3.5	
6/28	f	"	"	112	142	4.3	
10/28	g	"	"	29	23	--	
12/28	h	"	"	7	6	--	
"	"	"	4	30	29	1.0	
				<u>895</u>	<u>2882</u>	<u>70.2</u>	
				<u><u>1911</u></u>	<u><u>6507</u></u>	<u><u>228.8</u></u>	

APPROVAL BY CHIEF OF PARTY

Sheet No. 14 and accompanying records of detached party aboard the launch Martha of Crescent City Harbor 1928 has been inspected and approved by me. The field work was done by a detached party under my occasional supervision. The office work was done under my personal supervision.

No additional work is thought necessary, except possibly wire-dragging the harbor.

  
F. G. Engle,  
H. & G. Engineer,  
Chief of Party.

Sec. of Field Records. ✓

E.A.L.

April 17, 1929

Division of Hydrography and Topography: ✓

Division of Charts:

Tide Reducers are approved in  
7 volumes of sounding records for

HYDROGRAPHIC SHEET <sup>6</sup> 4875

Locality: Crescent City Harbor, Northern California

Chief of Party: F. G. Engle in 1928

Plane of reference is Mean lower low water, reading  
2.8 ft. on tide staff at Crescent City, Calif  
~~at below: xxx~~

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.



DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

October 12, 1929.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4865

Surveyed in 1928

Chief of Party, F. G. Engle.

Surveyed by C. M. Durgin and R. W. Knox.

Protracted by C. J. Wagner

Soundings plotted by R. W. Knox.

Verified and inked by J. C. MacNab.

1. The records conform to the requirements of the General Instructions.
2. The plan, character and extent of development fulfill the requirements of the specific instructions except as follows:
  - (a) In several instances where old soundings required investigating (Specific instructions, paragraph 21) and, according to the soundings records (H. 4865) the investigation was completed, only one sounding was recorded and the smooth sheet cannot show that development has been done at all. A sufficient number of soundings should appear on the smooth sheet to confirm or partially confirm the shoal sounding.
  - (b) In a few cases it is thought that the least depths of the shoals apparently have not been obtained and certain old soundings have not been verified or disproved (Specific instructions, paragraph 21).
3. The sounding line crossings are adequate considering the uneven character of the bottom.
4. The usual depth curves can be drawn in the navigable area of this sheet.
5. The field plotting was completed to the extent prescribed in the General Instructions.

6. A more satisfactory survey would have been obtained if Crescent City Harbor included between Lat.  $41^{\circ}44'$  and  $41^{\circ}45'$  and Long.  $124^{\circ}11'$  and  $124^{\circ}12'$  had been surveyed on a scale of 1:5,000 instead of 1:10,000.

An enlargement photographically was transferred to the sheet in addition to the drafting done by the field party.

Sub-plan "A" is on a scale of 1:5,000 and includes all of the soundings in Crescent City Harbor within the blue line limits on the smooth sheet (H. 4865) together with the closer detail of the overlay sheet submitted. Only the position numbers of the sounding work from the overlay sheet have been shown on the Sub-plan "A".

7. (a) The junction with H. 4862 is satisfactory.
- (b) The junction with H. 4860 is acceptable although several discrepancies exist. It is thought most of these are due to the uneven character of the bottom.
- (c) The junction with H. 4852 is good. However, in a few instances the remark under (b) above applies here.

#### Review

8. General Remarks:

In reviewing this sheet great care and time have been used to give the best and most accurate results for charting. Old sheets, Topographic 741 and 1132, were compared with the new Topographic Sheet 4402, and such features as shoreline and rocks were thoroughly investigated. The Hydrographic Sheet 4865 now shows all the new topography (T. 4402) and the old topography in green ink which it was decided should be charted.

The old hydrographic sheets covering this area were numbers 383, 480, 402, 690, 242, 401, 1025b, 1236, 1237 and an Army Engineers blueprint No. 15,686. While all of these sheets were examined, many were found to be of a reconnaissance nature and others were too <sup>small</sup> large a scale to be of use; particular attention was given to H. 690 and the blue print 15,686 as these were more detailed and complete. A careful comparison between the blue print 15,686, H. 690 and H. 4865 was made and all the important shoals shown on the blue print (15,686) were confirmed by either H. 690 or H. 4865.

Since the blueprint (15,686) gives no additional information apart from what is already shown on H. 4865, it should not be used in the compilation of the new chart. *J.K. Amo*

9. The comparison between H. 690 and H. 4865 entailed the replotting from the original (H. 690) sounding records of a portion of H. 690 on the scale of 1:5,000. A tracing of this portion <sup>was filed with H. 690. This replotted portion</sup> aided in verifying certain shoals shown on the new survey where equal or lesser depths were obtained and also showed additional shoals not investigated by the late survey H. 4865. Several shoals shown on H. 690 were believed to be the same as those shown on the new sheet (H. 4865) but were slightly displaced.

An attempt was made to reconcile the more important shoals on the old survey (H. 690) with the new survey (H. 4865). In some cases a good agreement was found in both position and depth. There were, however, numerous instances where the position of the shoal on the old (H. 690) failed to agree with what apparently appeared to be the same shoal on the new (H. 4865) survey. In view of the lumpy character of the bottom, as evidenced by both the new (H. 4865) and the old (H. 690), and the fact that in most cases on the old survey (H. 690), the shoals were located by strong detached positions, the following general treatment was adopted:

1. Where a shoal on the old survey fell in a slightly different position from that shown on the new survey, but the depths were the same, the old shoal soundings were not carried forward to the new survey.
2. Where the old survey showed depths less than that on the new survey, but in a substantially different position, the shoal soundings were retained and carried forward on the new survey.
3. Where the old survey showed shoals that were not found on the new survey they were retained and carried forward on the new survey.

10. Additional work:

The possibility of a new channel has come up, located just east of the end of the breakwater and running south or slightly east of south to deep water.

The shoals now obstructing this channel are from H. 690 and as the new survey (H. 4865) does not confirm them, although more detailed work should have been done in this area, their existence is still uncertain. These shoal soundings and their locations are shown below:

Sounding in feet	Lat.	Long.	Least depth New survey
16 and 17	41° 44' 840 m.	124° 11' 950 m.	23 ft.
15 and 17	41 44 645	124 11 965	22
13	41 44 610	124 11 1145	27
14	41 44 442	124 11 976	34

In view of the fact that this new channel would be more direct it would be advisable to drag this area to determine the existence or non-existence of the above shoals.

Notice to Compiler

One of the purposes of making the above detailed study of the old and new work was to eliminate the necessity of using the old information, both topographic and hydrographic. While this could not be accomplished in whole, only so much of the old information was carried forward as was deemed necessary for a faithful representation of the area. All the topographic information retained from the old surveys is shown in green on H. 4865 as well as all the old hydrographic information.

Therefore, within the limits of both the new hydrographic (H. 4865) and the new topographic (T. 4402) surveys, no other information should be used from the old surveys, except what has already been carried forward on the new hydrographic survey (H. 4865).

Reviewed by J. C. MacNab, October, 1929.

*Approved  
amo*

Approved:

A. M. Solieralski  
Chief, Section of Field Records (Charts)

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

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4865

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. 14

REGISTER NO. 4865

State CALIFORNIA

General locality ~~NORTHERN CALIFORNIA~~ South of Point St. George

Locality CRESCENT CITY APPROACHES

Scale 1/10000 Date of survey August & September, 1928

Vessel Str. DISCOVERER

Chief of Party F. G. Engle

Surveyed by C. M. Durgin and R. W. Knox

Protracted by C. J. Wagner

Soundings penciled by R. W. Knox

Soundings in fathoms feet

Plane of reference MLW

Subdivision of wire dragged areas by

Inked by

Verified by

Instructions dated ~~April 13~~ March 13, 1928

Remarks: