4876

Diag Cht. No. 5702-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. No 4 Office No. 4876

LOCALITY

State Calif & Oregon

General locality Cape Sebastian

Locality Off Shore

1948

CHIEF OF PARTY

F. G. Engle

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Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

State: ~~CALIF.~~ California & Oregon

11—5613

Acc. No.

DESCRIPTIVE REPORT.

4876

Hydrographic *Sheet No.* 4 (field)

LOCALITY:

Cape Sebastian

~~COAST OF NORTHERN CALIF. & OREGON~~

Point St.George to Cape Sebastian

~~ST. GEORGE REEF TO MACK ARCH~~

Offshore

192 8

CHIEF OF PARTY:

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

I

DESCRIPTIVE REPORT
To Accompany Hydrographic Sheet # 4 (Field)
Offshore - Scale 1/120,000

Coast of Northern California & Oregon - St. George Reef to Mack Arch.

July -- November 1928.

U.S.C.& G.S.S. DISCOVERER -- F. G. Engle,
H.& G. Engineer,
Commanding.

Instructions dated March 13, 1928. Supplemental Instructions dated May 8 and October 12, 1928.

Limits:

The work on this sheet extends offshore from a junction with sheet #2 and sheet #4489 to longitude 125° 20' and southward from a junction with sheet #4503a to a junction with sheet #5.

Control:

From the inshore limits to the 100 fathom curve lines were run in a north and south direction and are controlled by three point fixes on triangulation points. The north and south direction of the system was necessary as most of the work was done in strong northwesterly weather, in which it would be impossible to protect the sheet from spray with a beam wind which would be the case if an East and West system were used. Outside of the 100 fathom curve the area is developed by east and west lines controlled by R.A.R. supplemented by dead reckoning except on U and V days when the control was by three point fixes on mountain peaks. The R.A.R. work was done in foggy and hazy weather when the shore was invisible.

The R.A.R. work on this sheet was the first of this method of control used by the DISCOVERER.

The only members of the ships complement that had any experience were H.C.Allam radio operator who had experience on a shore station of one of the west coast ships and Lieut. L.D. Graham executive officer who had experience on the LYDONIA. The principal reason for the somewhat unsatisfactory results of R.A.R. on this sheet was the inability of one of the shore station operators, Simpson.

If the writer (Commanding Officer) had posessed some experience with the method in satisfactory operation, he would have been able to locate the difficulty with certainty and without delay. After running a large part of the lines in the belief that the contour of the bottom, water noises etc. were responsible for the misses in getting bombs through, the operator at Hunter Cove station (Simpson) reported a leaky cable. The work on the sheet had advanced so far that it was not deemed advisable to make repairs as the weather was such that on only occasional days could work be done in small boats in an exposed place. Infact it was necessary to wait two weeks for suitable weather when the station was established. Simpsons inability was indicated when it was found on picking up the cable at Hunter Cove that the hydrophones were dead and the cable insulation showed a high resistance on the megger test.

The fact that only occasional simultaneous distances were obtained from both stations is responsible for the uneven spacing of the lines. The adjustments given in detail in the attached report, however, locate the lines with much greater accuracy than all dead reckoning lines and is considered sufficient in the open deep sea. In studying these lines with a view to checking the acceptance and rejection of bomb distances, the experienced sets on the lines run on sheet #5 indicate that the currents in this locality vary considerably from day to day. In general the set between longitude 124° 20' to 40' is from 150 to 180°and from 0 to 0.7 knots; between longitude 124° 40' and 125°00' the above current decreases to zero and may reverse slightly. West of longitude 125° 00' a northerly set may be experienced. The above currents may be considerably modified especially at the outset of strong northwest or southeast winds when a set with the wind will modify the normal currents.

Sights were obtained when possible. However, sufficient bomb distances were obtained on most of the lines to fix them with a higher degree of accuracy than the sights and the lines were not therefore adjusted to the sights.

Method:

Soundings were obtained by Fathometer red light to as great a depth as possible usually about 150 fathoms and by Fathometer white light beyond that depth. The disc speed was kept constant by adjusting rheostat to keep the middle reed of Tachometer vibrating. Vertical casts were taken at suitable spacing over the area to obtain comparison with Fathometer, surface and bottom temperatures, bottom samples and water samples for salinity determination.

In the vicinity of the 100 fathom curve the echoes were quite weak and at times could not be heard in the ear phones on the red light method. This condition was aggravated by rough sea which was a frequent accompaniment of the clear weather during which the work in the areas under 100 fathoms was done. Considerable skill was required under these conditions and in some places the 30 second interval for recording soundings could not be adhered to and soundings were recorded when obtained. In depths between 70 and 120 fathoms a second flash

was frequently observed at about ten fathoms greater than the true depth. This stray frequently came in persistently when the true depth echo was too weak to operate the relay and, without great care and an expert reader, would be read as the sounding. However by carefully watching the flashes and listening in the head-phones, an expert observer can distinguish the correct sounding. A number of such incorrect soundings have been rejected by me and it is thought that none remain.

Regarding the accuracy of the Fathometer white light soundings, this varies with the observer, with the care or concentration exercised and probably with the degree of mental fatigue. It is possible that even with good and steady echoes the personal equation may be as high as thirty fathoms. The character and contour of the bottom appear to affect the quality and sharpness of the echo and introduce an uncertainty of at least twenty fathoms with the best observing. This is illustrated by the fact that it is sometimes difficult to make a decision as to the reading, the echoes apparently jumping about on the scale.

Thus it will be seen that it is possible to have a considerable difference between crossing soundings with the Fathometer white light method. On this sheet an instance occurs in the crossing in the vicinity of position 8 and 34 E day, where there occurs a difference of 40 to 50 fathoms. A line was run on U day over the locality for the purpose of checking the above crossing. The later soundings indicate a correction of -12 in the vicinity of 8-E and +38 in the vicinity of 34-E. Another test crossing on 106-108-V indicates a correction of -40 at 6-E and +17 at 36-E. An earlier crossing of the two parts of E-day occurs at 14 to 16 L-day and checks unusually well at both crossings.

On all the work on this sheet the Fathometer was read by an officer and on the white light method two officers relieved each other on this work to avoid fatigue. Generally the recorder (writer) and the officer both read the depth and the mean was recorded. When free of other details the Commanding Officer assisted on the work.

Due to the continued absence of four officers on Topographic and launch Hydrographic work, the illness of Mr. Odessey and Mr. Durgin's detachment on the survey near La Jolla, it was necessary for the Commanding Officer to scale R.A.R. tapes and plot and direct the lines. In addition he handled the ship in taking vertical casts.

On the vertical casts the wire was kept vertical usually by keeping the ships head into the wind. Where a decided inclination of wire occurred with likelihood of materially affecting the sounding, a note "wire inclined" was placed opposite the sounding in the record. The correction in no case should exceed 2% of the depth on this account.

When using the Fathometer on the white light method the soundings were read at two minute intervals up to five hundred fathoms and five minute intervals over that depth. The recorder gave a standby of

thirty seconds so that several echoes could be read about the recorded time. In some localities due to steep slopes or other causes the echoes were too faint to be heard, especially in rough sea when water noises were considerable. In such areas continuous listening was done. The recorded soundings were the result of at least three echoes except where marked "approximate". In the latter the sounding is based on only one or two echoes.

Comparison with Previous Surveys:

A gap two to three miles wide from Latitude 42°00' to 42°10' between sheets 4503a and 4489 was filled on the present sheet. The depth here is between 60 and 80 fathoms and was of course done by Fathometer, red light which is regarded as highly accurate. At the junction with the older work the agreement in some places is not good, and the discrepancies are held to be due to tube errors in the older work.

In the deep area the agreement with sheet 4503a is fair, except in the case of a sounding of 233 fathoms shown in latitude 42° 06' longitude 124° 43' where a depth of 359 fathoms was obtained.

Shoals:

A bank having a least depth of 318 fathoms was located in longitude 124° 50' about 21 miles 280° true from NW Seal rocks.

No indication of the shoal reported by Capt. Kragen, of the Lady Mine, 9 miles west by north of NW Seal rock was found. The area was developed by 1/2 mile visual fix lines. A vertical cast of 112 fathoms was obtained in the approximate position given, and the fathometer soundings in the vicinity showed the usual steep slope found elsewhere at the 100 fathom curve.

I was informed by local boatmen that Capt. Krogen had not been to sea for a number of years and that he is not now in sound mind. I believe the development is sufficient to prove the non-existence of shoal water.

Discrepancies between Smooth & Boat Sheets:

On the offshore lines, differences on the two sheets are due to the fact that the Boat-sheet adjustment was made on a log factor of unity and an erroneous deviation table. On some of the smooth sheet lines a shift was introduced where the soundings indicated that this was necessary.

On the visual fix lines the only excessive difference occurs between 88 and 101 S day. It is thought that the smooth plotting of this section is correct.

Differences in soundings are due to an approximate correction for fathometer soundings used on the boat sheet plotting. Also a number of obviously incorrect soundings were rejected by the Commanding Officer and not plotted on the Smooth Sheet.

F. G. Engle,
Commanding Officer.

REPORT ON PLOTTING OF R.A.F.
SHEET NO. 4.

"C" Day:

Positions 1 - 8 require no special comment. Starting with position 8, the dead reckoning was plotted to position 28, and adjusted for the closure on this portion of the line, fitting the adjusted positions to distance circles B-14, B-20 and B-25. H-14 and H-25 were rejected. The section of the line from position 28 to the end of the line requires no special comment.

In plotting positions at which only one bomb distance was obtained, the DR position, adjusted for closure for the section of the line under consideration, was shifted to its distance circle in such a way that the direction of the shift was normal to a tangent to the circle at the adopted position. This procedure was followed throughout the entire plotting of the sheet.

The bomb positions so established, were used to control the log positions, each section between bomb fixes being plotted independently.

The log factor used from the beginning of the work to "G" day was 0.995. On "G" day this log was lost, and log No.2 used henceforth. The log factor of log No. 2 was 0.945, as determined by test.

"D" Day:

Position 5 was established by advancing arc 3-B and bringing back arc 7-B to intersect arc 5-H. Positions 1-5 were adjusted accordingly. Positions 5-13 were then plotted and adjusted on the closure between 5 and 13, fitting the arcs B-7 and B-10; positions 13 to 32 were then plotted and likewise adjusted, fitting positions 15, 20, 24 and 30 to their respective arcs. Positions 32 to 43 were then plotted by DR and adjusted on the closure between 32 and 43, fitting positions 35, 37, 39 and 42 to their respective distance arcs.

"E" Day:

Positions 1 - 32 were plotted by DR and adjusted on the closure on 32, fitting positions 4,6,8,10,14,18,21,27,and 30 to their respective distance arcs. Positions 32 - 40 were then plotted by DR and adjusted on the closure between 32 and visual fix 40, fitting positions 34,36 and 38 to their respective distance arcs.

"F" Day:

Positions 1-10 were plotted by DR and adjusted on the closure on

10, fitting arcs, 4-B, 6-B, and 8-B; 10-25 were plotted by DR and adjusted on the closure on 25, fitting arcs 12-B, 14-B, 20-B and 23-H; 25-31 were likewise plotted and adjusted fitting arcs 27-B and 29-B; positions 31-35 require no special comment.

Position 40 at the end of the line was obtained by comparing the soundings for this part of the line with the corresponding soundings on sheet No.2. The position obtained in this manner fell on arc 40-H and off arc 40-B; arc 40-B was therefore rejected. At position 40, a bow and beam bearing was obtained on the fog signal at St. George Reef L.H. The beam bearing checked well enough, but the bow bearing did not.

"G" Day:

On "G" day the log used up to this point was lost and a new rotor used henceforth; from this point on, the new log factor 0.945 was used in plotting the DR.

From 1 to the end of the line was plotted by DR and adjusted for the closure on position 32, fitting arcs 14-B,17-B,19-B,23-B and 31-B. 28-B was rejected.

"H" Day:

The line from 1-53 was plotted by DR, using log factor 0.945. A position at 51-B was adopted from 49-B,51-B and 53-B, three equidistant points, by satisfying the two conditions, that the course run from 49 to 53 remains constant, and that the distance run from 49-51 is the same as from 51-53. Using this position for 51, the line from 1-51 was adjusted on the closure at 51, which was 5.88 miles 250° true, and fitting arcs B-7 and B-17. Position 7 had to be shifted 0.4 miles west and 17, 1.41 miles west to fall on their respective distance arcs. Each section was put through a second adjustment to take up this shift. After the second adjustment position 49 had to be shifted slightly to the NW to fall on its distance arc and 53 to the SW to fall on its distance arc. The line drawn through the final positions of 49,51 and 53 was straight, and the distance 49-51 the same as 51-53, thus satisfying all the requirements.

After the line was plotted and adjusted as explained above, the soundings in the vicinity of "H" day were plotted on a sheet of tracing paper and compared with the soundings on "H" day. These soundings were used as a basis of a further adjustment on the part of "H" day. Positions 33-H and 42-H were each shifted 1.30 miles 240° true, and positions 22 and 49 held fixed. These new positions were used to readjust the line from 22-H to 49-H, the portion from 33-42 being shifted the same amount.

"J" Day:

From 5-33 "J" was plotted by DR using log factor 0.945, and adjusted on visual fix 33-J fitting positions 11,14,16,20,23,25,27 and 30 to their respective distance arcs. Distance arc 8-B was rejected.

"K" Day:

No R.A.R. Only three velocity tests.

"L" Day:

Using log factor C.945, positions 3-26 were adjusted for D.R. closure, and positions 6,8,13,16,19,21 and 23-B fitted to their respective distance arcs. In each case the positions, adjusted for DR closure, had to be shifted SW to be placed on their respective distance arcs, the amount of the shift gradually increasing with the distance run out, and then gradually decreasing with the distance run in. The maximum shift was on position 13-B, and =0.62 miles.

"M" Day:

Using log factor 0.945, positions 1-32 were plotted and adjusted on the DR closure on position 32 which closure amounted to 3.44 miles 23° true. Position 12, so adjusted had to be shifted 1.43 miles 260° true to be placed on arc 12-B. This shift, in amount and direction, was used as the basis of a second adjustment for the rest of the line, increasing the adjustment with the distance run offshore, and then decreasing it with the distance run in. The maximum adjustment was made on position 19, and equalled 1.96 miles, 260° true.

Remainder of the sheet controlled by visual fixes.

Approval by Chief of Party.

Sheet #4 and accompaning records have been inspected and approved. The field and office work have been under my immediate supervision at all times. No additional work is considered necessary.

F. G. Engle,
H. & G. Engineer,
Commanding.

Tables showing corrections to fathometer soundings are attached to the second page of each sounding volume.

LOG TEST FOR LOG NO. 1
AUGUST 28, 1928.

To accompany Hydrographic Sheets Nos.4& 5.

Time	Log Read.	Rev.	Rev. Per.mi.	Log Dist	Scale Dist	Log Fact.	Positions		Course	Remarks
1/ 8-[illegible]-40	0.80	298293					1/ Round	46 - 48		Line Begins
							Castle			
							Star	53 - 47		
2/ 8-48-47	1.76	298893 (600)	669	0.96	1655m .895m	0.933	2/ Round	67 - 30		
							Castle			
							Star	46 - 07	85	
3/ 8-54-07	2.56	299444 (551)	714	0.80	1428m .772m	0.965	3/ Round	84 - 57		Line ends
							Castle			
							Star	53 - 11		
4/ 9-00-10	3.20	300032	[illegible]				4/ Round	75 - 21		
							Castle			Line
							Star	36 - 18	270	Begins
5/ 9-06-05	4.08	300635 (603)	665	0.88	1666m .909m	1.033	5/ Round	56 - 42		
							Castle			
							Star	48 - 15		
6/ 9-11-43	4.90	301207 (572)	665	0.82	1590m .840m	1.049	6/ Round	40 - 26		Line ends.
							Castle			
							Star	50 - 36		
Mean			678			0.995				

LOG TEST FOR LOG NO. 2
October 25, 1928.
To Accompany Hydrographic Sheets Nos.4,5 & 15.

Time	Log Read.	Rev.	Rev.R. Per.mi.	Log.- Dis.	Scale Dis.	Log Fact.	Positions	Course	Remarks.
1/1-58-00	1.23	916310	- - -	- - -	- - -	- - -	1/ Beach 70 - 05 Lite Castle 27 - 22	270	Line beg. Lt.N'ly. Airs Sea smooth
2/2-05-12	2.32	917027 (717)	694	1.09	1908m 1.053	0.948	2/ Beach 58 - 13 Lite Castle 45 - 54		
3/2-12-25	3.42	917750 (723)	697	1.10	1916m 1.057	0.945	3/ Beach 37 - 28 Lite Castle 60 - 10		Line ends
4/2-17-20	3.95	918208	- - -	- - -	- - -	- - -	4/ Beach 41 - 15 Lite Castle 55 - 03	90	Line Beg.
5/2-24-00	5.02	918865 (657)	670	1.07	1812m 0.980	0.916	5/ Beach 56 - 57 Lite Castle 40 - 35		
6/2-31-03	6.07	919540 (675)	666	1.05	1872m 1.013	0.965	6/ Beach 61 - 47 Lite Castle 25 - 35		Line ends
7/2-35-02	6.42	919916	- - -	- - -	- - -	- - -	7/ Beach 65 - 32 Lite Castle 26 - 46	272	Line beg.
8/2-42-03	7.52	920613 (697)	689	1.10	1868m 1.011	0.920	8/ Beach 57 - 15 Lite Castle 43 - 07		
9/ 2-49-02	8.60	921326 (713)	698	1.08	1886m 1.021	0.945	9/ Beach 38 - 57 Lite Castle 57 - 38		Line ends
10/2-53-15	9.09	921736	- - -	- - -	- - -	- - -	10/ Beach 41 - 04 Lite Castle 53 - 15	88	Line Beg.
11/3-00-00	10.15	922420 (684)	678	1.06	1864m 1.009	0.952	11/ Beach 56 - 29 Lite Castle 39 - 28		
12/3-07-03	11.25	923144 (724)	679	1.10	1970m 1.066	0.969	12/ Beach 61 - 13 Lite Castle 24 - 35		Line ends
Mean	- - -	- - -	684	- - -	- - -	0.945			

STATISTICS, SHEET NO. 4

Date 1928	Letter	Vol.	Pos.	Soundings		Miles (stat)		Vessel
				W.L.	Fm.R	W.L.	Fm.R	
July 18	A	1	94		748		72.0	Ship
Aug. 1	B	1	68		540		48.0	"
" 16	C	1	44	129	60	81.7	18.0	"
" 17	D	1	42	104	29	98.1	8.5	"
" 21	E	1&2	42	169	25	84.5	8.0	"
" 23	F	2	41	262	68	87.3	6.0	"
" 28	G	2	38	123	42	57.7	5.0	"
" 29	H	2	58	162	84	126.4	8.0	"
Sept. 5	J	2	37	96	60	51.0	11.0	"
" 6	K	2&3	111		881		83.4	"
" 7	L	3	27	110	60	42.8	9.0	"
" 11	M	3	58	88	74	48.2	10.0	"
" 13	N	3	91	124	706	23.0	60.2	"
Oct. 3	Q	3&4	41		329	XXXX	20.5	"
" 5	R	4	38	26	254	5.0	22.0	"
Nov. 16	S	4	102	215	810	36.0	45.7	"
" 17	T	4	3		15		1.0	"
" 19	U	4&5	65	248	19	68.4	1.0	"
" 20	V	5	111	210	46	96.5	4.5	"
Total - - - - - -			1026	2066	4850	906.7	441.8	

Form 567

DIVISION OF CHARTS, FILE NO._____

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

LANDMARKS FOR CHARTS

P. O. Box 2512, San Francisco, Calif.

April 29, 1929, 19

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.

F. G. Engle

4876 F. G. Engle, H. & G. Engr. Chief of Party.

DESCRIPTION	POSITION						Datum	METHOD OF DETERMINATION	CHARTS AFFECTED
	Latitude			Longitude					
	°	'	D. M. meters	°	'	D. P. Meters			
BOSLEY MT. A roud topped lone wooded mountain, the highest point being a small round nub on the South side.	42	12	1060	124	13	635	N.A.	Triangulation Station (1907)	5702
MT. EMERY or CHETCO MOUNTAIN A round-topped lone wooded mountain.	42	06	315	124	09	159	N.A.	Triangulation Station Emily (1924)	5702
LAKE BUTTES: (Stack 1907) The highest point of a rounded mountain; shows against the sky from the S.W.	42	25	6	124	17	95	N.A.	Triangulation Station	5702
Grizzly Peak: (Grizzly 1907) The N.W. and highest point of a double top mountain distinguishable from S.W.	42	23	1591	124	21	1186	N.A.	Triangulation	5702
PRESTON PEAK (1914)	41	50	249	123	36	924	N.A.	"	5702
FOUR BROTHERS: (No.4, 1914)	41	43	1330	123	47	947	N.A.	"	5702
BEAR MOUNTAIN: (1913)	41	47	1474	123	40	381	N.A.	"	5702
PK. N. OF PRESTON PK (L (1914)	41	52	314	123	36	913	N.A.	"	5702
Other peaks shown were not definitely identified.									

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.

GOVERNMENT PRINTING OFFICE

Field Records Section

Report on Hydrographic Sheet No 4876
Surveyed in 1928
Instructions dated - March 13, 1928
Chief of Party - F. D. Engle
Surveyed by - H. Odessy and D. R. Fish
Protracted by - D. W. Marchand
Sounding plotted by -
Verified and inked by - H. MacEwen

1. The records conform to the requirements of the General Instructions.
2. The plan of the development fulfils the requirements of the General Instructions.
3. The plan and extent of the development satisfy the specific instructions.
4. The sounding line crossings are adequate.
5. The usual depth curves can be completely drawn.
6. The field plotting was complete and in accordance with the requirements of the General Instructions.
7. The office draftsman did not have to do over any part of the work done by the field party.
8. The junctions with adjacent sheets are satisfactory
9. No further surveying is necessary to fully cover the area developed on this sheet but due to the uncertainty of the control of several lines and the adverse conditions under which

Report H. 4876 (cont.)

parts of this survey were made further surveying under favorable conditions, sufficient to serve as an adequate check on the offshore work would be desirable. It will be noticed that some crossings show considerable disagreement. This may be due to faulty control or the error sometimes present in fathometer work due to the personal equation in reading.

10. Remarks: Attention is called to the discussion report for the difficulties met with in making this survey - especially that part controlled by the R.A.R. method. The office draftsman on his interview with the Chief of Party learned that the plotting of all offshore lines was personally superintended by him and all features carefully considered for obtaining the best results. In view of this fact the plotting (except in the case of those lines controlled by three point visual fixes, which were handled in the usual way) was accepted as submitted by the field party.

A further examination of L day lines by the Chief of Party resulted in the opinion that the soundings from Position 7L to 23L appear to have been read too deep on the fathometer by fifteen (15) to twenty-eight (28) fathoms. This fact should not be overlooked in using this sheet for charting purposes.

Report H. 4876 (Cont.)

A considerable area of some soundings in the southeast corner of H. 4503a have been discredited by H. 4876 and have therefore been rejected on H. 4503a. The substantial accuracy of the fathometer work on this sheet (4876) in this particular area is confirmed by the overlap with the hand sounding work of H. 4489.

11. Rating of work.

a. Character and scope of surveying - Fair

b. Field drafting - good.

Respectfully submitted.

W. Edwin Swan.

Asst. Cartog. Engr.

Nov. 21. 1929

Sec. of Field Records. ✓ EAR

May 24, 1929.

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in
volumes of sounding records for
5
HYDROGRAPHIC SHEET
4876
Locality:
Cape Sebastian, Southern Oregon.
Chief of Party:
Plane of reference is G. Engle in 1928.
ft. on tide staff mean lower low water, reading
1.6 ft. below B. M. Brookings, Oregon.
xxxxxxxxxxxxxx
2.6 ft. on tide staff at Crescent City, Calif.

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.

Chief, Division of Tides and Currents.

c o p y

May 24, 1929.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET NO. 4876

Locality: Cape Sebastian, Southern Oregon.

Chief of Party: F. G. Engle in 1928

Plane of reference is mean lower low water, reading
1.6 ft. on tide staff at Brookings, Oregon.
2.8 ft. on tide staff at Crescent City, Calif.

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.

Paul C. Whitney

Chief, Division of Tides and Currents.

Form 537
11—5812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4876

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. 4

REGISTER NO. 4876

State California and Oregon

General locality ~~Oregon Coast~~ Cape Sebastian

Locality Point St. George to Cape Sebastian - Offshore ~~Cape Sebastian to Crescent City~~

Scale 1:120,000 Date of survey July 18- Nov. 20, 1928

Vessel U.S.C.& G.S.S. DISCOVERER

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

Surveyed by Herman Odessey, H.& G.E., & G. R. Fish, Aid.

Protracted by G. M. Marchand, Aid.

Soundings penciled by

Soundings in fathoms ~~feetx~~

Plane of reference M. L. L. W.

Subdivision of wire dragged areas by -----

Inked by

Verified by

Instructions dated March 13, 1928

Remarks:

GPO

Form 537
11—5812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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