4447
4447a
4447 Add'l W.K.

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. ..... Office No. 4447
4447 A
4447 Ad W.K

LOCALITY

State California

General locality San Pedro

Locality Off shore. Santa Catalina I. Southwestward

1925

CHIEF OF PARTY

R. R. Sukeno R. F. Luce

LIBRARY & ARCHIVES

DATE .....

B-1870-1 (1)++

4447
4447a
4447 Add'l W.K.

4447 (A & WK)

4447

Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

U. S. C. & G. SURVEY
L. & A.
Acc. No.

State: California

11—5613

DESCRIPTIVE REPORT.

Hydrographic Sheet No. (A) 4447

4447 (Add'l Wk.)

LOCALITY: 4447a

San Pedro – Offshore

Santa Catalina I. –

Southwestward

1925

CHIEF OF PARTY:

R.R.Lukens, R.F.Luce

Revised Statistics for Hydro. Sheet # 4447 (Addl Wk.)

1925 Month	Day	Letter	Vol.	Positions	Soundings	Miles Statute	Vessel
November	17	A	1	29	121	58.7	Pioneer
"	18	B	1	57	282	136.3	"
"	19	C	1-2	81	416	206.7	"
"	23	D	2	29	82	33.1	"
"	24	E	2	26	122	62.8	"
"	25	F	2	42	212	107.0	"
December	1	G	2-3	26	112	48.3	"
"	3	H	3	36	106	14.2	"
"	4	J	3	26	113	52.6	"
"	9	K	3	43	128	13.5	"
"	11	M	3-4	32	113	17.2	"
"	10	L	3	4	12	1.1	"
"	15	N	4	48	136	19.5	"
"	21	P	4	30	101	26.0	"
"	22	R	4-5	80	202	33.8	"
"	23	S	5	57	161	24.2	"
1926							
March	9	T	5	6	29	1.8	"
"	11	U	5	25	65	8.0	"
"	12	V	5	38	70	12.1	"

583

This statistics sheet to replace the sheet forwarded March 6, 1926

(Add'l Wk.)

DESCRIPTIVE REPORT TO ACCOMPANY SHEET NO. 4447 (Season 1924-25) COVERING THE WORK EXECUTED BETWEEN NOV.17 AND DEC.23, 1925.

INSTRUCTIONS: The work done on this sheet in the fiscal year 1926 was called for in the Director's Instructions dated October 20th 1925.

LIMITS: The Instructions mentioned above call for additional development in various sections of the area covered in the winter of 1924-25 by this vessel under the command of Captain R.R.Lukens; and the limits are the same as the original limits for this work. In general the area extends from Catalina Island to the 2000 fathom curve over a width extending about 25 miles 155° true from San Nicolas Island.

ANCHORAGES: The anchorage ordinarily used by the survey vessel when working in the vicinity of San Nicolas Island during the northwesterly weather usually encountered is at the easterly end of San Nicolas Island about ¾ of a mile southeast true from the shore where signal BLUFF is located. The depth is 12 fathoms with gray sand bottom. The sand spit, which has extended more than a mile beyonds its length at the time the first surveys were made in this vicinity, has apparently not changed between the winter of 1924-5 and the present season. The end of the sand spit is about one mile north of the anchorage referred to in this paragraph.

TIDES: The tide gauge for the work in this area is located at San Pedro and is operated by the City of Los Angeles.

SURVEY METHODS: Soundings for the most part were made by the sonic depth finder, with a sufficient number of vertical casts made to check the accuracy of the sonic apparatus. In the depths under 100 fathoms the newest type of Rude pressure tubes was used; a series of comparisons for determinining the error of each tube being made nearly every day at some convenient place. The development southwest of San Nicolas Island was done by running lines by precise deadreckoning from the vicinity of San Nicolas Island to the 2000 fathom curve and back again to a position where a fix could be obtained; the end offshore being controlled by astronomical sights. The lines were adjusted to close on the positions determined.

A shoal extending nearly ten miles to the eastward from San Nicolas Island required the construction and planting of two survey buoys of the one-barrel type two to three miles off-shore. The buoys were located by sextant

SURVEY METHODS (Continued)

angles measured between triangulation stations on distant islands and topographic signals on San Nicolas Island. The buoys being thus located were used as additional objects for sextant fixes during the progress of the development of the shoal in question.

Several days were spent in additional development of the shoal south of Santa Barbara Island known as Osborn Bank. This hydrography was controled by sextant fixes with angles measured between triangulation stations on Santa Catalina and Santa Barbara Islands. Due to the small scale of the boat sheet and to its probable distortion a smooth sheet of the development of Osborn Bank has been plotted to a scale of 1-60000 to confirm the adequate development of this area. This smooth sheet will be forwarded with the boat sheet.

This work is plotted on H-4447a

In order to obtain the most accurate values for log factors and compass deviations, the logs were rated just prior to the beginning of this work and a ship swing for every 15° of the compass was made a few days before the first offshore line was run. The logs were rated in San Pedro Bay and the sheet upon which the positions have been plotted will be forwarded with the boat sheet.

A projection to the scale of 1-20,000 has been made for the location of the two survey buoys referred to in the last paragraph of page one of this report, and this projection accompanies the boat sheet.

approved March 5, 1926
R F Luce
Comdg Str Pioneer.

STATISTICS FOR SHEET 4447

Str. Pioneer
R. F. Luce, Commanding

SOUTHERN CALIFORNIA

Date 1925		Day Letter	Volume	Positions	Soundings	Miles Statute	Vessel used
November	17	A	1	29	121	58.7	Pioneer
"	18	B	1	57	282	136.3	"
"	19	C	1-2	81	416	206.7	"
"	23	D	2	29	82	33.1	"
"	24	E	2	26	122	62.8	"
"	25	F	2	42	212	107.0	"
December	1	G	2-3	26	112	48.3	"
"	3	H	3	36	106	14.2	"
"	4	J	3	26	113	52.6	"
"	9	K	3	43	128	13.5	"
"	10	L	3	4	12	1.1	"
"	11	M	3-4	32	113	17.2	"
"	15	N	4	48	136	19.5	"
"	21	P	4	30	101	26.0	"
"	22	R	4-5	80	202	33.6	"
"	23	S	5	57	161	24.2	"

Superseded by later sheet.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 27

Sou. Calif 4447
Dec. 1925

POSITION COMPUTATION, PRIMARY TRIANGULATION

				°	′	″
α	3	Bark (Santa Barbara Id)	to 2 Bluff (San Nicolas Id.)	53	04	06
3d ∠		&		5	21	25
α	3	Bark	to 1 Survey buoy "South"	47	42	41
Δα						
				180	00	00.00
α′	1	South	to 3 Bark			

	°	′	″			λ	°	′	″
φ	33	28	20.378	3	Bark	λ	119	02	27.046
Δφ	−	15	8.280	s=		Δλ		19	45.944
φ′	33	13	12.098	1	"South"	λ′	119	22	12.990

DO NOT WRITE IN THIS MARGIN

	° ′ ″	s	4.618191	s^2	9.2364			
½(φ+φ′)		Cos α	+9.827928	$\sin^2 \alpha$	9.7382	h^2	5.91	
		B	8.511333	C	1.2254	D	2.36	
1st term	+906.676	h	2.957452		0.2000		8.27	
2d and 3d terms	+ 1.604		906.676		1.585		.019	
−Δφ	+908.280							

s	4.618191			
Sin α	+9.869094			
A′	8.509285	Δλ	+	
sec φ′	0.077496	$\sin \frac{1}{2}(\varphi+\varphi')$		
	+3.074066		+	
Δλ	+ 1185.944	−Δα	+	

11—627

Geod. Div. not interested in these computations as per Mr. Sutcliffe

Surveyed

~~POSITION~~ COMPUTATION, PRIMARY TRIANGULATION

			°	′	″
α	2	to 3			
2d ∠		&	+		
α	2 Bark	to 1 Bluff	53	04	06.8 ✓
Δα			−	13	02.0
			180	00	00.00
α′	1 Bluff	to 2 Bark	232	51	04.8

First Angle of Triangle

	°	′	″			°	′	″
φ	33	28	20.378 ✓	2 Bark	λ	119	02	27.046 ✓
Δφ	−	15	03.134 ✓	s =	Δλ	+	23	45.811 ✓
φ′	33	13	17.244	1 Bluff	λ′	119	26	12.857 ✓
		7	31.5					

DO NOT WRITE IN THIS MARGIN

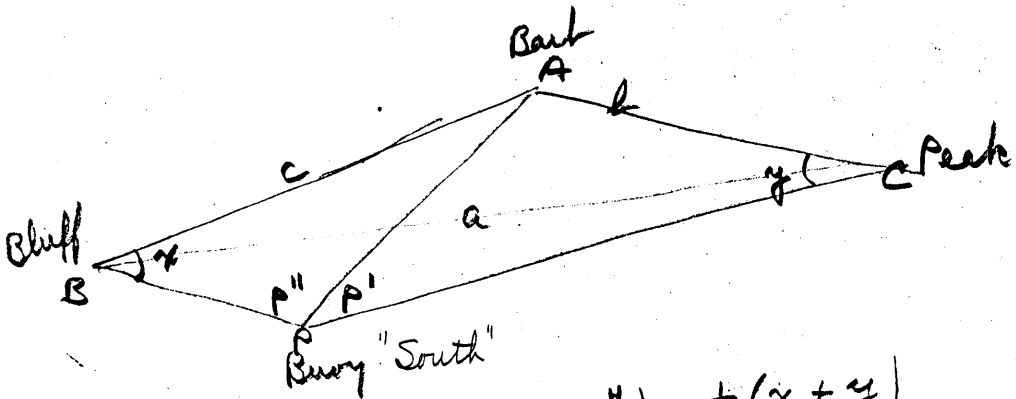
	° ′ ″	s		s^2			
½(φ+φ′)	33 20 46.8 ✓	Cos α	4.443307 ✓	$\sin^2 a$	9.1345 ✓	h^2	5.909 ✓
		B	8.511333 ✓	C	1.2255 ✓	D	2.356 ✓
1st term	″ 900.825 ✓	h	2.954640 ✓		0.3600 ✓		8.265 ✓
2d and 3d terms	+ 2.309 ✓				2.291		.018
−Δφ	+903.134 ✓						

s					
Sin α	4.567274				
A′	8.509285	Δλ +	3.154062	cos a	9.778772
sec φ′	0.077503	$\sin \frac{1}{2}(\varphi+\varphi')$	9.739131	5	4.664535
	3.154062		2.893193		
Δλ	+ 1425.811	−Δα	+ 781.98		

a sin a 4.567274
a cos a 4.443307
tan a 0.123967
a 53 04 06.8
cos a 9.778772
5 4.664535

GOVERNMENT PRINTING OFFICE 11—627

Lon. Calif. Dec. 1925



$$S = 180^\circ - \tfrac{1}{2}(A + P' + P'') = \tfrac{1}{2}(x + y)$$

log c	4.664534
log sin P'	9.585272
colog b	5.356884
log csc P''	0.158622
tan Z =	9.765312

Z = 30 13 18.
45
75 13 18 cot = 9.421288

tan S = 9.760564

tan e 9.181850

e 8 38 35

S 29 57 00

x 38 35.6

P' = 22 38

P'' = 136 03

A = 141 25 01.8

2) 300 06 02

150 03

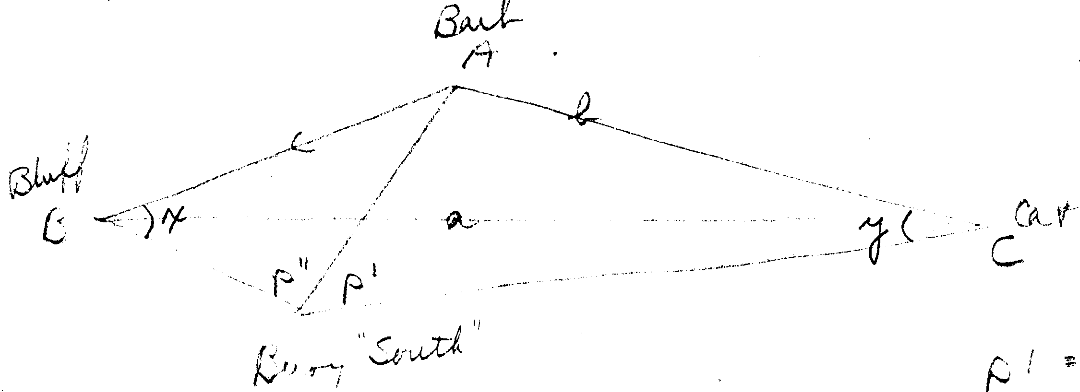
180

S = 29 57

log b = 4.643116

" c = 4.664534

Sou. Calif. Dec. 1925



$S = 180° - \frac{1}{2}(A + p' + p^2) = \frac{1}{2}(x + y)$

log c	4.664534
log sin p'	9.706967
colog b	5.219643
log csc p''	0.158622
tan z =	9.749766

z = 29 20 16
45
74 20 16 cot = 9.447741
tan S = 9.753673
tan e 9.201414
e 9 02 05
S 29 33 30
x 38 35 35

p' = 30 37
p'' = 136 03
A = 134 12 55.0
2) 300 52 55
150 26.5
180
S = 29 33.5

log b = 4.780357
log c = 4.664534

Dec. 1925

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 25

COMPUTATION OF TRIANGLES.

11—606

State: Cal.

NO.	STATIONS.	OBSERVED ANGLES.	CORR'N.	SPHER'L ANGLES.	SPHER'L EXCESS.	PLANE ANGLES AND DISTANCES.	LOGARITHMS.
23	Bluff - Carb						4.643534
1	Buoy "South"	136 03 00					0.158622
?	Bluff	38 35 35					4.795035
	Carb	5 21 25					8.980162
1-3	Coast - Carb						4.618191
1-2	" Bluff					6213.2	3.793318
	West Peak	33 27 36.014	Santa Barbara Id., az. 91 54 42.47 dist. 4.643116				
		118 34 05.246	back az. 271 39 04.02				
	Santa Barbara Id.	33 28 20.378	Catalina Peak, az. 278 51 10.78 dist. 4.780357				
		119 02 27.046	back az. 99 12 20.90				
	Catalina Peak	33 23 13.168					
		128 24 01.556					
	Bluff	33 13 17.244					
		119 26 12.857					

Do not write in this margin.

11—606

Lon Calif. Dec. 1925

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form 27

POSITION COMPUTATION, PRIMARY TRIANGULATION

				°	′	″
	α	3	to 2			
	3d ∠		&	−		
	α	3 Bluff	to 1 Bark	232	51	02.8
	Δα				13	02.0
				180	00	00.00
	α′	1 Bark	to 3 Bluff	53	04	04.8

		°	′	″				°	′	″
	φ	33	13	17.244	3 Bluff		λ	119	26	12.857
	Δφ	+	15	03.134	s=		Δλ	−	23	45.811
	φ′	33	28	20.378	1 Bark		λ′	119	02	27.046

DO NOT WRITE IN THIS MARGIN

		° ′ ″	s			s²			
	½(φ+φ′)		Cos α	4.445494		Sin² α	9.1321	h²	5.913
			B	8.511351		C	1.2214	D	2.354
	1st term	−905.409	h	2.956845			0.3535		8.267
	2d and 3d terms	+ 2.275					2.257		.018
	−Δφ	−903.134							

a sin a 4.566028
a cos a 4.445494
tan a 0.120534
a 232 51 02.8
cos a 9.780960
4.664534

	s				
	Sin α	4.566026			
	A′	8.509279	Δλ	3.154062	cos a 9.780960
	sec φ′	0.078755	Sin ½(φ+φ′)	9.739131	4.664534
		3.154062		2.893193	
	Δλ	−1425.811	−Δα	−781.98	

11—027

POSITION COMPUTATION, PRIMARY TRIANGULATION

				°	′	″	
	α	2 Bluff	to 3 Bank	232	51	04	
	$2^d \angle$		&	+ 38	35	35	
	α	2 Bluff	to 1 Survey Mon "South"	271	26	39	
	$\Delta\alpha$						
				180	00	00.00	
	α'	1 South	to 2 Bluff				

FIRST ANGLE OF TRIANGLE 136 03 00

	°	′	″			°	′	″	
φ	33	13	17.244	2 Bluff	λ	119	26	12.857	
$\Delta\varphi$	−		5.147	s =	$\Delta\lambda$	−	3	59.862	
φ'	33	13	12.097	1 South	λ'	119	22	12.995	
			{372.6 / 1475.8}					{336.5 / 1217.2}	

	° ′ ″	s	3.793318	s^2	7.5866			
$\frac{1}{2}(\varphi+\varphi')$		Cos α	+8.401449	$\sin^2\alpha$	9.9997	h^2	1.41	
		B	8.511351	C	1.2213	D	2.35	
1st term	+ 5.083	h	0.706118		8.8076		3.76	
2d and 3d terms	+ .064				.064			
$-\Delta\varphi$	+ 5.147							

s	3.793318			
Sin α	−9.999862			
A′	8.509255	$\propto \Delta\lambda$	−	
sec φ'	0.077496	Sin $\frac{1}{2}(\varphi+\varphi')$		
	−2.379961		−	
$\Delta\lambda$ −	239.862	$-\Delta\alpha$	−	

DO NOT WRITE IN THIS MARGIN

GOVERNMENT PRINTING OFFICE 11—627

DESCRIPTIVE REPORT

HYDROGRAPHIC SHEET "A" — Offshore from Catalina Island Southern California.

Steamer PIONEER — R. R. Lukens and R. F. Luce, Cmmdg. — 1924 and 1925.

LIMITS: This sheet embraces the area extending roughly 245° true from Catalina Island outward to the two thousand fathom curve. Its easternmost corners are approximately 33 - 37 N, and 33 - 00 N; and its 118 - 40 W, 118 - 30 W; westernmost corners 32 - 55 N and 32° - 31 N. 120 - 31 W 120° - 16 W.

SURVEY METHODS: Fixed position work was done when it was possible to obtain locations by sextant angles on the mountain peak and prominent point stations of Catalina, San Clemente and other islands.

When conditions prevented much fixed position work the procedure was as follows. The lines were begun on fixed positions near Catalina or Clemente Islands and run out to a position south of San Nicolas Island. From this position a line was run toward San Nicolas Island until a point was reached where a reliable position could be obtained from observing bearings to the tangents of that island. Most of the hydrography to the eastward of the meridian through San Nicolas Island was executed in this manner.

The work to the westward of San Nicolas Island was performed as follows. The beginnings of the lines were fixed by observations on the tangents of the island. The outer ends were fixed by positions as determined by star sights.

In all cases the work was adjusted to close on the fixed positions and star sight positions, and the intermediate positions for convenient spacing of soundings were obtained by adjusted log distances.

Special notes on the plotting of the individual lines have been inserted in the sounding records.

The tangents to San Nicolas Island as noted in the sounding records are tangents to the bluff line of the island. No bearings to the tangents of the sand spit at the eastern end of the island were takenor recorded due to the low visibility of the sand spit.

SONIC SOUNDINGS: By far the greater number of the soundings were made by use of the SONIC DEPTH FINDER. In fact this was a "Sonic Depth Finder Survey". At regular intervals and at various depths the sonic soundings were checked by vertical casts of the lead. A comparision of such simultaneous observations gave an excellent indication of the reliance that may be placed on the depth finder. From personal observation aboard the Steamers PIONEER and GUIDE it is my opinion that "Sonic Soundings" should not be reduced for tide since the probable error in determining the depth by the

Depth Finder is greater than the one or two fathoms of tide experienced on the ordinary open ocean hydrographic survey.

BANKS: Osborn Bank, situated about six miles south of San Nicolas Id. was thoroughly sounded (by sounding tube method); and although the lines were closely spaced, the least depth found thereon was 24 fathoms. (The present chart shows a least depth of 26 fathoms on the bank). The soundings on this bank were controlled by fixed positions. The south tangent of San Nicolas Island was used as the left object of the set.

UNNAMED BANK: An unnamed bank was discovered about seventeen miles south of the east point of San Nicolas Island. The least depth found on this bank was 52 fathoms. The bank was surveyed as follows.

After obtaining a fixed position by bearings on the tangents of San Nicolas Island the ship steamed southward until soundings showed she was on the bank. A "barrel buoy" was dropped over board and anchored. The sounding of the bank then proceeded and was controlled partly by compass bearings on the buoy and partly by log readings. In as much as there was much under reading of the log due to stopping of the vessel for vertical casts - the system of parallel lines used in developing was later adjusted to take into account the the distance of the outside line from the buoy as determined by the log distances at the end of the days work.

The buoy was located by taking the mean position as determined by log distance and course, to and from the fixed positions obtained near San Nicolas Island. Sounding tubes were used to get the depths on this bank.

Respectfully Submitted,

C. J. Itter

C. J. Itter,
Jr. H. & G. E.

STATISTICS SHEET
for

Hydrographic Sheet A

S.W. of Catalina Id
Off coast of Southern California

Date 1924	Day	Volume	Positions total	Positions fixed	Soundings	Stat. Miles soundings
Dec.22	A	This days work rejected				
23	B	1	16	16	40	20.0
24	C	1	5	2	39	19.0
30	D	1	9	7	37	21.0
31	E	1	13	9	47	26.0
1925 Jan. 6	F	1	50	21	195	199.2
7	G	2	10	3	117	59.0
8	H	2	33	3	312	153.6
9	J	2	9	7	1088	58.4
12	K	2	23	10	320	190.0
13	L	3	16	4	228	129.4
16	M	3	13	10	108	64.4
19	N	3	18	15	87	47.2
20	P	3	16	4	209	118.3
21	Q	4	32	1	93	32.2
22	R	4	21	1	44	14.7
23	S	4	13	6	80	48.1
Feb. 9	T	4	7	4	48	23.7
13	U	4	11	7	86	47.0
16	V	4	39	39	110	21.9
17	W	5	59	59	165	47.0
Totals	20	5	413	228	2473	1340.1

NOTE: "Total Positions" includes positions obtained from star sights, log readings, sextant angles and bearings.
"Fixed Positions" are those determined by sextant angles, bearings and star sights and do not take into account those positions determined by log readings.

Section of Field Records

April 27, 1925

~~Division of Hydrography and Topography:~~

Division of Charts:

Tide reducers are approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET 4447

Locality: off shore San Pedro, Catalina and S. Barbara Ids., Calif.

Chief of Party: R. H. Lukens and R. F. Luce, in 1925
Plane of reference is mean lower low water and is
3.6 ft. on tide staff at San Diego, 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 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

Chief, Division of Tides and Currents.

Action of Field Records.

Report—

Hydro. Sheet No. 4447

Surveyed in – 1924 - 1925

Chief of Party – R. R. Lukens, R. F. Luce.

Surveyed by – Field Party.

Protracted by – C. J. Otter

Soundings plotted by. – C. J. Otter.

Verified and checked by – H. E. MacEwen

1. The records are complete in every detail and conform to the requirements of the general instructions

2. The plan and character of the development fulfil the requirements of the General Instructions

3. No system of cross lines were run but there are instances enough to indicate a check.

4 The usual depth curves can be completely drawn

5. The field plotting was completed to the extent prescribed in the General Instructions.

6. The office draftsman had to do over considerable work done by the field draftsman due to erroneous plotting of fixed positions. See Remarks

7. No further surveying is required to fully develope important areas within the limits of the sheet ~~up~~ except possibly the spit that

7. (cont.)
makes out from the south east end of San Nicholas Island, to the eastward.

8. (a) There is strong evidence of careless plotting of fixed positions on this sheet. On B - F - J - K - M - S - T and W days there were many positions (57 in all) plotted so much in error the the office draftsman had to replot the positions and change the direction of lines.

(b) In a few instances the recorder did not adhere to the table of abbreviations for bottom characteristics: as "bl" (blue or black) "gr" (green or gray?)

~~9. Rating of work~~

~~(a) Character and neatness of [illegible]~~

~~(b) [illegible]~~

Respectfully submitted

W. E. MacEwen

F.R.

E.D.

ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No. 4-DRM

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON October 2, 1925.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4447

Southwestward of Santa Cataline Island, California

Surveyed in 1924, 1925

Instructions dated January 12, 1924 (Steamer GUIDE)

Chief of Party, R. R. Lukens, R. F. Luce.

Surveyed by R. R. L, R. F. L. and C. J. Itter.

Protracted by C. J. Itter.

Soundings plotted by C. J. Itter.

Verified and inked by H. E. MacEwen.

1. The records conform to the requirements of the General Instructions except that in a few instances the abbreviations used for bottom characteristics were ambiguous. (See verifier's report)
2. This sheet is principally a sonic sounding sheet and is not covered by the General Instructions for field work.
3. The plan and extent of development satisfy the specific instructions except in the following respects.

   a. The shoal area making out from the east end of San Nicolas Island should have been better developed. There is a considerable area inside the 100 fathom curve that is not covered by the old survey (H. 1459b) and on the present survey the lines in this vicinity were spaced too far apart (4 miles) to be considered a proper junction.

   b. A few more lines should have been run across the 200 fathom bank lying south and southwest of San Nicolas Island.

   c. There is an indication of a bank in the vicinity of lat. 32° 45', long. 119° 25' that should have been developed.

35'
A.L.S.

See additional work in 1925-1926

GPO

d. The area to the southwest of San Nicolas Island should have been closer developed to the 300 fathom curve.

e. South of Santa Barbara Island where this sheet joins H. 1459[a] a split line should have been run better to develop the 100 fathom curve.

4. The sounding line crossings where any were run are satisfactory. About 4 1/2 miles S x E of △ Spur where H day crosses K day there is a difference in the crossings of approximately 200 fathoms. The position on K day was located by two bearings while that on H day in an adjusted dead reckoning position. This might explain the difference inasmuch as the bottom drops off rather rapidly here. (Readjusted in office with approval of R. R. L.)

5. The information was sufficient for drawing the usual depth curves except as noted above.

6. The usual field plotting was done by the field party. The positions plotted from star sights and the adjustment of the dead reckoning lines were accepted by the office cartographer without verification. Those based on three point fixes, however, were given the customary check, and in numerous instances were found in error. (See verifier's report).

7. There are no contemporary surveys adjoining this sheet. The junctions with the older surveys except as mentioned in Paragraph 3, a, d, e, are adequate.

8. If work is done again in this locality consideration should be given to that mentioned in Paragraph 3 and also to the area covered by a portion of F day in the southwestern part of the sheet, when the sonic depth finder was out of commission and only up and down casts were taken.

   The area in the vicinity of the 119 fathom sounding (sonic) in approximately Lat. 33° 03', long. 120° 10' should be developed.

9. A study of the simultaneous soundings taken with the wire and the sonic depth finder reveals a remarkable agreement in most cases, and in practically all cases the difference is well within the allowable error for such depths. The maximum error occurs in depths less than 100 fathoms and as a result of a conference between the Chief of Party, the Chief of Field Work, and Chief of Field Records, all sonic soundings of 100 fathoms and less were omitted.

10. The accompanying tables give in tabular form the results of the survey from the standpoint of comparison with wire soundings. A brief explanation of the tables follows:

Table 1

This table gives all the comparative soundings between wire and sonic taken during the progress of the survey. These soundings are arranged in numerical order and run all the way from 47 fathoms to 1052 fathoms. The column marked S-W gives the difference between the sonic depth and the depth by wire, while the next column gives the same difference expressed in terms of per cent.

It will be observed that in all the comparative readings only two erratic ones exist, these being doubtless caused by failure to get the proper echo. They are shown encircled in red and were not used in the computation of Table 2.

Table 2

This table gives the errors in percent for groups of depths.

Column 1 includes all the wire depths for groups of 100 fathoms; that is in any group, say 100-200 fathoms, all the comparative soundings within these limits that are given in Table 1 were used to compute the values given in columns 2 and 3.

Column 2 gives the average percentage error between the sonic and the wire soundings without regard to whether the error is plus or minus. It is obtained by taking the mean of all the % errors as given in Table 1 but disregarding the sign for the particular group.

Column 3 gives the average resultant error for the various groups of depths. That is for depths ranging between, say 200 and 300 fathoms the difference between the sonic sounding and the wire sounding will average -1.6%. The values in this column are obtained by taking the algebraic sum of all the percentages given in Table 1 for the particular group and dividing by the number of comparative readings taken. In other words we can expect in these depths a sonic reading of 1.6% less than the wire would give.

It will be seen from the table that no consistent progressive errors exist for the various groups of depths. Nor is it reasonable to suppose that there would be. For in comparing two methods of sounding both of which are subject to certain

errors, such as verticality of the wire, the personal equation of the observer in synchronizing outgoing signals and returning echoes, the variations in the velocity of sound for different physical conditions of the water, all make it impossible to get absolute comparisons. That is why the results of this work should be considered in the light of average resultant errors as shown in Column 3.

It will thus be seen that for depths up to 100 fathoms the apparatus in its present form does not give acceptable results for charting purposes. An average resultant error of +17.8% is much too great for such depths when it is remembered that the allowable error for tube sounding in such depths is between 3 and 5 per cent. However, above 100 fathoms the results are remarkable, the average resultant error ranging from +0.9 to -2.5 per cent. It is interesting to note that above 200 fathoms the average resultant error is always minus, that is, the sonic reading will always be less than the wire reading by an average amount of 1.3%. From this it may be concluded that, inasmuch as the tendency is to get greater depths with the wire than actually exist on account of failure to obtain a vertical cast, the sonic depths (when speaking in terms of averages) give perhaps a more accurate sounding than is obtained by the wire.

11. Rating of work (Surveying - very good.
(Drafting - good.

Reviewed by A. L. Shalowitz, September, 1925.

L.O.K.

TABLE 1

Comparisons of Sonic and Wire Soundings

Wire	Sonic	S - W	%	Wire	Sonic	S - W	%
47	64	+17	36	265	200	-65	25
53	59	+ 6	11.3	265	260	- 5	1.9
53	64	+11	21	275	242	-33	12
57	74	+17	30	279	267	-12	4.3
61	83	+22	36	276	277	+ 1	.3
63	70	+ 7	11	287	280	- 7	2.4
63	84	+21	33	288	290	+ 2	.7
66	70	+ 4	6.1	288	310	+22	7.6
75	83	+ 8	10.6	290	265	-25	8.6
84	80	- 4	4.8	290	295	+ 5	1.7
92	107	+15	16.3	290	296	+ 6	2.1
93	100	+ 7	7.5	310	304	- 6	1.9
100	113	+13	13	327	343	+16	4.9
102	98	- 4	3.9	331	331	0	0
106	115	+ 9	8.5	331	337	+ 6	1.8
107	81	-26	24.3	332	305	-27	8.1
111	116	+ 5	4.5	343	339	- 4	1.2
130	123	- 7	5.4	351	364	+13	3.7
138	140	+ 2	1.4	362	351	-11	3.0
140	139	- 1	0.7	365	358	- 7	1.9
141	151	+10	7.1	366	368	+ 2	.5
144	142	- 2	.8	370	364	- 6	1.6
148	149	+ 1	.7	375	370	- 5	1.3
168	168	0	0	377	387	+10	2.6
181	184	+ 3	1.6	377	334	-37	9.8
184	178	- 6	3.2	384	385	+ 1	.3
186	189	+ 3	1.6	387	382	- 5	1.3
189	193	+ 4	2.1	392	412	+20	5.1
190	177	-13	6.8	399	396	- 3	.8
191	191	0	0	399	411	+12	3.0
194	196	+ 2	1	401	390	-11	2.7
195	188	- 7	3.7	403	378	-25	6.2
200	201	+ 1	.5	412	396	-16	3.9
215	234	+19	8.8	421	446	+25	6.0
227	237	+10	4.4	449	422	-27	6.0
228	230	+ 2	.9	450	408	-42	9.3
239	223	-16	6.7	465	464	- 1	0.2
251	260	+ 9	3.6	472	459	-13	2.8
254	254	0	0	478	464	-14	2.9
256	219	-37	14.5	478	477	- 1	0.2
260	229	-31	11.9	483	460	-23	4.8

TABLE 1 (Cont.)

Comparisons of Sonic and Wire Soundings

Wire	Sonic	S - W	%	Wire	Sonic	S - W	%
483	478	- 5	1.0	682	722	+40	5.6
494	500	+ 6	1.2	686	714	+28	4.1
501	508	+ 7	1.4	687	640	-47	6.8
512	495	-17	3.3	688	681	- 7	1.0
518	517	- 1	0.2	690	708	+18	2.6
531	522	- 9	1.7	694	646	-48	6.7
535	522	-13	2.4	695	705	+10	1.4
535	510	-25	4.7	695	704	+ 9	1.3
537	541	+ 4	0.7	702	686	-16	2.3
543	510	-33	6.1	705	701	- 4	0.6
548	518	-30	5.5	706	670	-36	5.1
549	552	+ 3	0.5	710	708	- 2	0.3
552	571	+19	3.4	710	724	+14	2.0
558	554	- 4	0.7	711	716	+ 5	0.7
574	576	+ 2	0.3	715	716	+ 1	0.1
585	551	-34	5.8	716	710	- 6	0.8
591	577	-14	2.4	718	715	- 3	0.4
596	568	-28	4.7	718	726	+ 8	1.1
598	588	-10	1.7	721	707	-14	1.9
601	604	+ 3	0.5	721	716	- 5	0.7
603	598	- 5	0.8	722	710	-12	1.7
604	592	-12	2.0	723	702	-21	2.9
604	618	-14	2.3	723	722	- 1	0.1
604	610	+ 6	1.0	725	748	+23	3.2
607	590	-17	2.8	727	714	-13	1.8
611	618	+ 7	1.1	743	740	- 3	0.4
616	614	- 2	0.3	745	732	-13	1.7
618	593	-25	4.0	788	774	-14	1.8
620	618	- 2	0.3	793	768	-25	3.2
620	598	-22	3.5	810	760	-50	6.2
622	618	- 4	0.6	819	827	+ 8	1.0
626	616	-10	1.6	833	838	+ 5	0.6
630	618	-12	1.9	843	824	-19	2.3
634	650	+16	2.5	847	819	-28	3.3
636	653	+17	2.7	886	882	- 4	0.5
648	623	-25	3.9	892	890	- 2	0.2
654	626	-28	4.3	910	894	-16	1.8
659	650	- 9	1.4	947	899	-48	5.1
678	668	-10	1.5	965	944	-21	2.2
678	670	- 8	1.2	968	990	+22	2.3
678	698	+20	2.9	1052	1046	- 6	0.6

TABLE 2

Showing Average Percentage Error between Sonic and Wire Soundings

Depths	Average percentage error	Average resultant percentage error	
47 - 100	18.6	+17.8	
100 - 200	3.5	+ 0.9	
200 - 300	4.8	- 1.6	
300 - 400	2.7	- 0.5	
400 - 500	3.6	- 2.5	
500 - 600	2.7	- 1.9	Average error = -1.3%
600 - 700	2.4	- 0.7	
700 - 800	1.5	- 0.9	
800 - 900	2.0	- 1.5	
900 - 1052	2.4	- 1.5	

Compiled and computed by A. L. S.

Approved -

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4447 a.

Osborn Bank.

Surveyed- December, 1925
March, 1926

U.S.C.& G.S.S.Pioneer.

Chief of Party:- R.F.Luce.

Surveyed by:- C.Shaw, H.Odessey, E.P.Morton.

Protracted by:- S.B.Grenell.

Soundings plotted by:- S.B.Grenell.

Verified and Inked by:-Earle A. Deily.

1- The records conform to the requirements of the general instructions.

2- This sheet is principally a tube sounding sheet altho there are several sonic sounding lines.

3- The usual field plotting was done by the field party. This plotting was found to be in error and the work was replotted by an office cartographer.

4- The sonic work corresponded favorably with the tube work except in one case where a sonic 94 fathoms is found beside 56, 45, and 36 fathom tube soundings.

5- Rating of work (Surveying- good)
(Drafting- good)

Reviewed by Earle A. Deily, June 1927.

Respectfully submitted,

Earle A. Deily

Earle A. Deily.

This work was found defective and was erased and replotted by C. E. Christopherson. See review by E.P. Ellis, Mar 22, 1928

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

March 22, 1928.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4447a

Osborn Bank, California

Surveyed in 1925-1926

Instructions dated Oct. 20, 1925 (PIONEER)

Chief of Party, R. F. Luce.

Surveyed by C. Shaw, H. Odessey, E. P. Morton.

Protracted by C. E. Christopherson.

Verified and inked by E. A. Deily.

1. The records as well as the plan and character of the survey conform to the requirements of the General Instructions.

2. The plan and extent of the survey satisfy the specific instructions.

3. The sounding line crossings are adequate and the information is sufficient for drawing the usual depth curves.

4. The usual field plotting was done by the field party, but the protracting was found to be from 200 to 500 meters in error (always in the same directions). Without doubt the errors were due to defect in the protractor. The work was re-plotted in the office.

5. The junction with H. 4447 is adequate and no further surveying is required.

6. The character and scope of the surveying are adequate.

7. Reviewed by E. P. Ellis.

Approved:

_____

Chief, Section of Field Records (Charts)

_____

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

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 November 13, 1929.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4447 - Additional Work
(Plotted in red)

Surveyed between November, 1925 and March, 1926.

Chiefs of Party, R. F. Luce and R. R. Lukens.

Surveyed by party of Steamer PIONEER.

Protracted and soundings plotted by C. E. Christopherson.

Verified and inked by G. Risegari.

Most of the fixes on the bank east of San Nicolas Island are based on tangents. The original plotter used tangents on the shoreline which was not visible due to the distance from the ship. This part of the work was therefore replotted by E. P. Ellis using the proper contours for tangents.

Reviewed by E. P. Ellis, January, 1929.

Approved:

_____

Chief, Section of Field Records (Charts)

_____

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

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

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4447 (Additional Work)

Southwestward of Santa Catalina Island, California

Additional Work in 1928

Instructions dated December 16, 1927 (DISCOVERER)

Chief of Party, F. G. Engle.

Surveyed by F. G. Engle.

Protracted and soundings plotted by T. B. Reed.

Verified and inked by J. C. MacNab.

1. The records conform to the requirements of the General Instructions.

2. The plan and extent of development satisfy the specific instructions, paragraph 16 a, b, and d.

(a) Paragraph 16 c, specific instructions. An attempt to develop the 119 fathom sounding was made but the development was to the westward. For further discussion of this 119 fathom bank see the review of H. 4550, Additional Work, paragraph 3-b and paragraph 8.

(b) The 69 fathom sounding noted in paragraph 16 (e) of the specific instructions was not developed and no reason was given in the descriptive report. The 69 fathom sounding is not plotted on H. 4447 and is not charted. This sounding was probably taken from the HULL and CORY work of the Navy. This sounding is not of sufficient importance to require further additional work.

(c) The development of the bank referred to in specific instructions, paragraph 16 (a) was taken care of on H. 4549a and is referred to in the review of that sheet.

(d) The split line from San Nicholas Island, paragraph 16 (b) specific instructions, was run. Positions 2 to 14 L day of the original work were replotted, the original plotting being crossed out. L day was replotted to agree with adjacent lines

and the additional work. The crossing with the additional work at the 319 fathom sounding between L6 and L7 was held fixed and the difference was distributed proportionally from L2 to this point. The line was moved without proportional adjustment from here to L9, and from L9 to L14 the difference was again distributed proportionally. After making these changes the 1000 fathom curve is smoothed out, and the crossing with the additional work is good.

The astronomical fix at L7 can be considered good for the new position as well as for the position selected in the original plotting, the difference coming in an interpretation of the mean position from several lines of sight.

(e) Paragraph 16 (d), specific instructions, refers to a 105 fathom sounding in lat. 33° 00', long. 119° 36'. This area was investigated and it appears that the original line upon which the sounding is located is probably in error, the 105 sounding being plotted too far west and south. About 1 1/2 miles north of the 105 fathom sounding a 111 fathom sounding was obtained by the additional work.

It is recommended that the 105 fathom sounding be removed and the 111 fathom sounding charted. This is not in accordance with standard practice, but it sppears evident that the 105 fathom sounding is incorrectly plotted.

From the crossings it is evident that comparatively slight shifts of the various lines in this area would smooth out the 200 fathom curve, but as this would involve considerable labor it is recommended that the additional work be accepted for the delineation of the 200 fathom curve and the soundings on the original work affecting this curve be disregarded, and these soundings have accordingly been crossed out, and a note to that effect added on the smooth sheet.

3. The sounding line crossings between different lines of additional work, and the additional work with the original work in the locality covered by paragraph 2 (d) above are satisfactory. The crossings between additional work and the original work mentioned in paragraph 2 (c) above, where position 29 A to 41 A cuts across the original work of this sheet (4447) were so in error that as the additional line contained no soundings of importance it was omitted. The crossings between original and additional work, paragraph 2 (e), are taken up in that paragraph.

4. The information was sufficient for drawing the usual depth curves.

5. The usual field plotting was completed by the field party and with the exception of the development taken up in paragraph 2 (d) no further adjustment of the additional work was found necessary. The customary check of the value and spacing of soundings was carried out.

6. The junctions with H. 4549a and H. 4550 are now complete.

7. No further surveying is believed necessary on this sheet in the immediate future.

8. Reviewed by A. M. Sobieralski and J. C. MacNab, January 25, 1929.

Approved:

_____

Chief, Section of Field Records (Charts)

_____

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

4447

Form 537
11—5812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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. (A) 4447

State California

General locality ~~Southern California, Southwestward of Santa Catalina Id.~~ San Pedro — Offshore

Locality Santa Catalina I. — Southwestward

Chief of party R.R.Lukens and R.F.Luce

Surveyed by R.R.Lukens and R.F.Luce

Date of survey December 22, 1924--February 17, 1925.

Scale 1 : 120 000

Soundings in Fathoms

Plane of reference Mean lower low water

Protracted by C.J.I. Soundings in pencil by C.J.I.

Inked by . . . . . Verified by . . . . . .

Records accompanying sheet (check those forwarded):

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

...5... Sounding books, ... Wire-drag books, ... Photographs.

Data from other sources affecting sheet 1 Astronomic Sight Book

Remarks: Rec'd 9 press. tube corr. graphs. J.R.

Form 537
11—5812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

4447a

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. 4447a ~~-Supplementary to Add'l Work~~

State . California. . . . . .

General locality . Outer Santa Barbara Passage. ~~Island.~~ . . . . . .

Locality . . Osborn Bank . . . . . .

Chief of party . R.F. Luce. . . . . .

Surveyed by . ~~Str. Pioneer~~ " C. Shaw, H. Odessey, E.P. Morton . . . . . .

Date of survey . . ~~Nov. 17~~ Dec. 9, 1925 to Mar. 12, 1926. . . . . .

Scale . 1:60,000. . . . . .

Soundings in . . Fathoms. . . . . .

Plane of reference . . . MLLW . . . . . .

Protracted by S.B.G. . . Soundings in pencil by . . . . .

Inked by S.B.G. . . . . Verified by . . . . . .

Records accompanying sheet (check those forwarded):

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

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

Data from other sources affecting sheet . . . . . .

Remarks: This sheet is supplementary to R.R. Lukens' Sheet #4447 for Str Pioneer, 1924.

4447 Add'l Wk

Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

E. Lester Jones, *Director*

C. & G. SURVEY
L & A
MAY 17 1928
Acc. No.

State: CALIFORNIA

DESCRIPTIVE REPORT

~~*Topographic*~~ x
Hydrographic } *Sheet No.* H4447 Add'l.Wk.

LOCALITY

COAST OF SOUTHERN CALIFORNIA

Southwest
~~VICINITY~~ OF SAN NICHOLAS ID.

1928

CHIEF OF PARTY

F. G. Engle

GOVERNMENT PRINTING OFFICE

80222

Add'l Wk

DESCRIPTIVE REPORT

T O A C C O M P A N Y

HYDROGRAPHIC SHEET NO. 4447 - - - - SCALE: 1:120,000
COAST OF SOUTHERN CALIFORNIA - - VICINITY OF SAN NICHOLAS ID.
ADDITIONAL WORK BY DISCOVERER IN 1928

This work was done in accordance with Director's Instructions dated December 16, 1927, Par., 16(a), (b), (c) and (d).

All soundings are by fathometer and were corrected by temperature curves and data filed with sheet No. 4560.

On A and B days deviations obtained on ship swing of Jan., 26 were used. On C & D days, deviations from azimuths taken on the line were used.

The line on A day is a continuation of D day sheet No. 4549(a) Pos., 1A being taken from 13 D of the latter sheet. From 1 A to Pos., 41 A a straight time adjustment was made.

A straight time adjustment was also made of the line on B day.

On C day a straight time adjustment was first made and then Pos., 40 was arbitrarily moved one mile 90 degrees true to make better crossing with D day and a second second adjustment made.

A straight time adjustment was made of the line on D day.

The least water found near the 119 fathom sounding line in Lat., 33 - 03, Long., 120 - 10 was 251 fathoms about 2 miles northward. It is possible that the 119 fathom sounding is correct and approximately in the above position and that it was missed by the lines on C & D days. A sounding of 126 fathoms about 10 miles northwest of it was obtained on what appears to be a separate bank.

Respectfully submitted,

F. G. Engle

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

STATISTICS FOR HYD. SHEET NO. H4447

Date 1928	Letter	Volume	Positions	Sdgs.	Miles(st)	Vessel
Mar. 16	A	1	41	248	94.3	DISCOVERER
" 20	B	1	49	287	83.3	"
" 21	C	1	56	252	127.0	"
" 23	D	1	69	342	135.0	"
		TOTALS--	215	1129	439.6	

(11)

T.H.

Copy for Section of Field Records files.

June 5, 1928.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
1 volume(s) of sounding records for

HYDROGRAPHIC SHEET 4447 and 4471.

Locality: SOUTHERN CALIFORNIA.

Chief of Party:
Plane of reference R. G. Ingle, 1928.
8.5 ft. on tide staff at M. L. L. W. Los Angeles.

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.

G Rude

Chief, Division of Tides and Currents.

Form 537
11—5812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4447 Add'l, Wk.

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. ------

REGISTER NO. H4447 Add'l, Wk.

State California

General locality Southern Coast. San Pedro - Offshore

Locality Southwest ~~Vicinity~~ of San Nicholas Island

Scale 1/120,000 Date of survey March, 1928

Vessel DISCOVERER

Chief of Party F. G. Engle

Surveyed by F.G.E.

Protracted by T. B. Reed

Soundings penciled by T.B.R.

Soundings in fathoms ~~xfeetx~~

Plane of reference MLLW

Subdivision of wire dragged areas by

Inked by

Verified by

Instructions dated Dec., 16, 1927

Remarks:

GPO

Form 537
11—5812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

4447

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. ~~4447~~ (Add'l WK)

State . California . . . . . .

General locality . ~~South of~~ San Pedro — Offshore. . . . . .

Locality . San Catalina I. — Southwestward ~~Osborn Bank, and San Nicolas I. and Vicinity~~ . . . .

Chief of party . . R. F. Luce, H.& G.E. . . . . .

Surveyed by . . " C. Shaw, H. Odessey, A.J. Hoskinson, E.P. Morton ~~(Str. Pioneer)~~ . . . . . .

Date of survey . . November 17, 1925 to ~~December 23, 1925~~ Mar. 12, 1926.

Scale . . . . . 1:120 000 . . . . . .

Soundings in . . . Fathoms . . . . . .

Plane of reference M L L W . . . . . .

Protracted by . . . . . Soundings in pencil by . . . . .

Inked by . . . . . Verified by . . . . . .

Records accompanying sheet (check those forwarded):

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

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

Data from other sources affecting sheet Log rating record.
Log run projection.
Navigational note book.
Buoy location projection.

Remarks:

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

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4447 (Additional Work)

Southwestward of Santa Catalina Island, California

Additional Work in 1928

Instructions dated December 16, 1927 (DISCOVERER)

Chief of Party, F. G. Engle.

Surveyed by F. G. Engle.

Protracted and soundings plotted by T. B. Reed.

Verified and inked by J. C. MacNab.

1. The records conform to the requirements of the General Instructions.

2. The plan and extent of development satisfy the specific instructions, paragraph 16 a, b, and d.

(a) Paragraph 16 c, specific instructions. An attempt to develop the 119 fathom sounding was made but the development was to the westward. For further discussion of this 119 fathom bank see the review of H. 4550, Additional Work, paragraph 3-b and paragraph 8.

(b) The 69 fathom sounding noted in paragraph 16 (e) of the specific instructions was not developed and no reason was given in the descriptive report. The 69 fathom sounding is not plotted on H. 4447 and is not charted. This sounding was probably taken from the HULL and CORY work of the Navy. This sounding is not of sufficient importance to require further additional work.

(c) The development of the bank referred to in specific instructions, paragraph 16 (a) was taken care of on H. 4549a and is referred to in the review of that sheet.

(d) The split line from San Nicholas Island, paragraph 16 (b) specific instructions, was run. Positions 2 to 14 L day of the original work were replotted, the original plotting being crossed out. L day was replotted to agree with adjacent lines

and the additional work. The crossing with the additional work at the 319 fathom sounding between L6 and L7 was held fixed and the difference was distributed proportionally from L2 to this point. The line was moved without proportional adjustment from here to L9, and from L9 to L14 the difference was again distributed proportionally. After making these changes the 1000 fathom curve is smoothed out, and the crossing with the additional work is good.

The astronomical fix at L7 can be considered good for the new position as well as for the position selected in the original plotting, the difference coming in an interpretation of the mean position from several lines of sight.

(e) Paragraph 16 (d), specific instructions, refers to a 105 fathom sounding in lat. 33° 00', long. 119° 36'. This area was investigated and it appears that the original line upon which the sounding is located is probably in error, the 105 sounding being plotted too far west and south. About 1 1/2 miles north of the 105 fathom sounding a 111 fathom sounding was obtained by the additional work.

It is recommended that the 105 fathom sounding be removed and the 111 fathom sounding charted. This is not in accordance with standard practice, but it appears evident that the 105 fathom sounding is incorrectly plotted.

From the crossings it is evident that comparatively slight shifts of the various lines in this area would smooth out the 200 fathom curve, but as this would involve considerable labor it is recommended that the additional work be accepted for the delineation of the 200 fathom curve and the soundings on the original work affecting this curve be disregarded, and these soundings have accordingly been crossed out, and a note to that effect added on the smooth sheet.

3. The sounding line crossings between different lines of additional work, and the additional work with the original work in the locality covered by paragraph 2 (d) above are satisfactory. The crossings between additional work and the original work mentioned in paragraph 2 (c) above, where position 29 A to 41 A cuts across the original work of this sheet (4447) were so in error that as the additional line contained no soundings of importance it was omitted. The crossings between original and additional work, paragraph 2 (e), are taken up in that paragraph.

4. The information was sufficient for drawing the usual depth curves.

5. The usual field plotting was completed by the field party and with the exception of the development taken up in paragraph 2 (d) no further adjustment of the additional work was found necessary. The customary check of the value and spacing of soundings was carried out.

6. The junctions with H. 4549a and H. 4550 are now complete.

7. No further surveying is believed necessary on this sheet in the immediate future.

8. Reviewed by A. M. Sobieralski and J. C. MacNab, January 25, 1929.

Approved:

A. M. Sobieralski

Chief, Section of Field Records (Charts)

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

WW B

June 19, 1926.

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Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
5 volumes of sounding records for

HYDROGRAPHIC SHEET NO. 4447 (Add'l Work)

Locality: Southern California

Chief of Party: R. F. Luce in 1925 and 1926

Plane of reference is MLLW
3.7ft. on tide staff at La Jolla
4.0 ft. on tide staff at Long Beach

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.
x 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.

Tube corrections and tide reducers not entered by field party and the former have not been entered by this division.

G Parker

Chief, Division of Tides and Currents.