

4559¹/₁a

C. & G. SURVEY
L. & A.
OCT 2 1926
Apn No.

4559¹/₁a

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

State: California

11-0013

DESCRIPTIVE REPORT.

Sheet No. 4559

LOCALITY:
 Coast
 Southern California;

Southeast
 South of Santa Rosa and Santa

Cruz islands.

1925-'26

CHIEF OF PARTY:
 R. F. Lucas

26430 15v

H 4559

The junction with H-1403 is satisfactory.

There is a gap between H-541 and the sheet and should be filled in.

The junction with H-1341² is satisfactory.

South of Point Reine between the limbs of sheets H-1403, H-1341² and H-4559 there is a large blank area that needs to be surveyed.

The outer banks of the submarine valley at H-1341² at the offshore end should have additional soundings, as well the valley itself should be better developed as far up as the at well.

The junction with H-1417 is satisfactory.

The junction with H-4560 (not renewed) is satisfactory.

The junction with H-1413 is satisfactory.

The junction with H-4447 is satisfactory.

The yinchen result H-1459⁹ is satisfactory but
additional development necessary on the 7 father
spot on H-1459⁹ and as well as some lines between
the 7 father spot and the hind of the sheet
(H-4559). There are several other suspicious looking
spots on this sheet that should be investigated.

H-4547 (not verified)

October 15, 1926.

(11)

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
 15 volumes of sounding records for
 HYDROGRAPHIC SHEET NO. 4559

Locality: SOUTHERN CALIFORNIA

Chief of Party: R. F. Luce in 1926

Plane of reference is MLLW

3.8 ft. on tide staff at La Jolla

3.7 " ----- do ----- San Pedro.

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.



Chief, Division of Tides and Currents.

DESCRIPTIVE REPORT.

To accompany Hydrographic Sheet A, Southern California.

AUTHORITY.

The work on this sheet was executed in accordance with instructions of the Director, U.S. Coast & Geodetic Survey to the Commanding Officer of the Str. PIONEER dated October 20, 1925.

LIMITS.

This sheet represents part of the hydrography executed by the Str. PIONEER during the Southern California season, 1925-'26. The area surveyed extends approximately from Lat. 33 25 N to Lat. 33 58 N and from Long 117 25 W to Long 120 05 W. The area is bounded on the north by Santa Rosa, Santa Cruz and Anacapa Islands, on the south by San Nicolas and Santa Barbara Islands, on the east by inshore work previously executed a few miles off the mainland, and on the west by work executed by this vessel during the present season. (Sheet B)

The area surveyed is completely developed except for a small area of tube sounding off San Nicolas Island.

METHODS AND CONTROL.

With the exception of M' and P' days, and part of X, D', T' and V' days, on which lines were controlled by R.A.R., all lines were controlled by visual fixes.

The area was developed by a system of parallel lines normal to

the trend of the shore-line. It was planned to space lines $1/4$ mile apart in depths less than 50 fathoms, $1/2$ mile apart between the 50 and 100 fathom curves, 2 miles apart between the 100 and 300 fathom curves, and 4 miles apart outside the 300 fathom curve. However, in general, lines were spaced more closely than this to avoid running splits, and to cover the area more adequately. In addition to the regular system of lines, a large amount of development work was done on various banks and shoals. Lines cross at frequent intervals.

Because of the irregularity of the bottom in this locality, large errors in depth can easily occur through a small error in position. However, all of the crossings are considered to be acceptable except those mentioned below. The discrepancies are due possibly to a considerable extent to the fact that all sonic operators had had but little experience at the beginning of the season.

Soundings between positions 2W and 3W and one sounding beyond position 3W have been rejected and erased from the line. The discrepancy here is probably due to the failure of an inexperienced sonic operator to detect the rapid shoaling on a narrow bank with relatively shoal water on both sides.

An unexplained discrepancy exists at the crossing of S and G lines. Both of these are sonic lines.

The crossings of X and M' lines are poor. As these lines are rigidly fixed by bomb positions, no attempt was made to shift the lines to obtain better crossings.

D' line from position 41 to 46 has been shifted slightly to the S.W. to obtain more probable crossings. This necessitated increasing the distance between positions 39 and 41.

Position 16 P' has been shifted slightly to the south to obtain a more probable crossing.

Soundings between positions 27 and 29 A' do not check those on cross lines and on adjacent lines. This may be due to an error in location of A' line, but as it was controlled by visual fixes, no attempt was made to shift it.

Soundings between positions 32A' and 34A' are deeper than those on cross lines and adjacent lines. A' line is a sonic line while those crossed are tube lines. The depths obtained by tubes are shoaler than those for which the sonic sounding machine is normally used.

An unexplained difference in depth occurs at the crossing of X and R lines. This may be due, partly, to an error in location of X line which is controlled by R.A.R.

Inside the 100 fathom curve, soundings were taken by means of Rude-Fischer sounding tubes, from the vessel proceeding at a speed of about 5 knots, and outside that depth by means of the sonic sounding apparatus with the vessel proceeding at about a 10 knot speed; except that between the 80 and 100 fathom curves depths were obtained by a combination of tubes, sonic, and vertical casts. Check vertical soundings and bottom samples were taken at frequent intervals.

Tidal reducers were applied in all cases where the reducers

exceeded one percent of the depth. These reducers were obtained from the San Pedro and La Jolla gauges, and during the latter part of the season when both of these gauges were out of commission, from the Long Beach gauge.

BOTTOM CONTOUR.

The bottom is very irregular throughout the area. Near the center of the area developed is located a submarine basin. This basin is roughly elliptical in shape with its major axis lying in a N.N.W.-S.S.E. direction. The walls are very steep, particularly those to the north and west. The center of the basin is located in approximate Lat 33 42 N and Long. 119 31 W. A maximum depth of 1052 fathoms was obtained.

From Santa Rosa Island, a shoal area makes off in a S.S.E. ly direction. The bottom here is regular except for a narrow submarine valley which traverses the shoal. The center line of this valley lies, roughly, in an E.-W. direction.

There is also a shoal area making off in a N.W.ly direction from San Nicolas Island. In the portion of this area which has been developed, the bottom is uniform except for a sharp change in depth in approximate Lat. 33 18 $\frac{1}{2}$ N., Long. 119 27 $\frac{1}{2}$ W. Here after adequate Development a least depth of 12 fathoms (reduced sounding) was obtained at a point 3.9 miles nautical, 69° true from triangulation station SPRING.

A single sounding also indicates a sharp change of depth in approximate Lat. 33 21 $\frac{1}{2}$ N. Long. 119 35 W, between positions 51 X' and 52 X'. This sounding has not been verified by a development of

the area.

A small shoal makes off in a N.W.ly direction from Santa Barbara Island.

North of Santa Barbara Island is located a bank having its center in approximate Lat. 33 37N, Long. 119 05 W, and whose major axis extends in a N.W.-S.E. direction. This bank has two separate areas of less than an hundred fathoms in depth, the northern one of which is relatively small.

Santa Cruz and Anacapa Islands are bordered by relatively deep water.

CURRENTS.

In general, currents were found to be weak, and due almost entirely to wind, except that rather strong tidal currents appear to exist on the two banks off the southeast and northwest ends of San Nicolas Island.

ANCHORAGES.

Anchorage in this area are covered in the current edition of the Pacific Coast Pilot.

Statistics Sheet No. *A*
 Southern California - 1925-26

Date	Letter	Volume	Positions	Soundings	Miles (Statute)	Vessel
1925						
December...9	A	1	9	39	20.1	Pioneer
December...15	B	1	3	10	1.0	"
December...21	C	1	9	41	21.3	"
December...28	D	1	31	133	71.0	"
December...31	E	1	29	141	73.0	"
1926						
January...5	F	1	38	144	75.0	"
January...6	G	1	23	100	53.6	"
January...6	G	2	17	86	47.0	"
January...11	H	2	11	49	25.1	"
January...12	J	2	28	131	68.0	"
January...13	K	2	34	158	70.1	"
January...14	L	2	33	162	83.8	"
January...15	M	2	12	51	26.1	"
January...15	M	3	19	92	48.2	"
January...18	N	3	36	169	82.4	"
January...20	P	3	36	164	77.0	"
January...21	R	3	31	154	45.5	"
January...22	S	4	44	139	74.0	"
January...25	T	4	41	147	71.0	"
January...27	U	4	49	206	53.0	"
January...27	H	5	10	55	10.5	"
January...28	V	5	62	289	56.0	"
February...8	W	5	10	46	26.0	"
February...11	X	5	19	70	11.5	"
February...11	X	6	47	146	71.0	"
February...12	Y	6	3	9	1.0	"
February...16	Z	6	85	123	54.0	"
February...17	A'	6	57	189	71.0	"
February...17	A'	7	10	50	10.0	"
February...18	B'	7	64	185	59.0	"
February...19	C'	7	77	315	68.5	"
February...19	C'	8	2	8	1.5	"
February...23	D'	8	46	194	64.0	"
February...24	E'	8	51	226	44.5	"
February...25	F'	8	29	104	24.0	"
February...25	F'	9	53	157	55.0	"
February...26	G'	9	59	223	56.5	"
March...1	H'	9	43	114	37.3	"
March...5	J'	10	82	109	60.6	"
March...8	K'	10	38	106	33.3	"
March...10	L'	10	42	114	46.0	"
March...11	M'	10	34	110	50.2	"
March...12	N'	11	14	47	19.0	"
March...15	P'	11	16	46	17.0	"

Date	Letter	Volume	Positions	Soundings	Miles (Statute)	Vessel
1926						
March 18	Q'	11	99	308	69.5	Pioneer
March 19	R'	11	32	91	44.0	"
March 22	S'	12	68	117	85.0	"
March 23	T	12	101	293	65.0	"
March 26	U'	12	40	84	17.7	"
March 30	V'	12	18	53	22.9	"
March 30	V'	13	27	51	12.3	"
March 31	W'	13	160	500	62.0	"
April 1	X'	14	115	353	59.4	"
April 2	Y'	14	71	172	34.3	"
April 2	Y'	15	69	172	33.5	"
April 9	Z'	15	19	55	27.0	"
April 12	A''	15	62	152	26.5	"
			2317	7752	2592.7	Totals

Section of Field Records.

Report on sheet No 4559
Surveyed in 1925 + 1926
Chief of Party - R. F. Luce
Surveyed by - Field Party.
Protected by - R. L. Pfan
Soundings plotted by - R. L. P.
Verified and inked by - H. M. MacEwen

1. The records conform to the requirements of the general instructions.
2. The plan and character of the development fulfil the requirements of the general instructions.
3. The normal depth curves can be completely drawn.
4. The field plotting was completed to the extent prescribed in the general instructions.
5. There were numerous instances of erroneous plotting due apparently to an improperly adjusted protractor. Although some lines had to be shifted slightly and several positions changed the errors in all cases were not serious.
6. The junctions with adjacent sheets are satisfactory.

7. No further surveying is required to fully develop important areas within the limits of the sheet.

8. Remarks: The work on this sheet is controlled almost entirely by shore point and fixed fixes and may be considered dependable. The fixes depending on the radio acoustic signals cannot be considered strong due to the imperfect reception of flashes from shore stations. In many cases only one station was heard from and other factors had to be used to determine positions. Although the method is unsatisfactory and of questionable accuracy there seems to be no conflict between the lines established with stronger fixes.

Mr. Hutchinson who was on the party at the time the work was done reported that custom of the commanding officer was to go over carefully at the end of each day the work completed to clear up doubtful points and establish definitely the work completed that day. In view of this statement the officer draftsman accepted as correct ~~and not in doubt~~ the treatment

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

4559

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. 4559

State California.

General locality Southern ^{Coast} California.

Locality ^{Southeast} ~~South~~ of Santa Rosa and Santa Cruz Islands.

Chief of party R. F. Luce.

Surveyed by Str. Pioneer.

Date of survey Dec., 1925 --- April, 1926.

Scale 1 : 120,000

Soundings in fathoms.

Plane of reference M.L.L.W.

Protracted by R.L. Pfau. Soundings in pencil by R.L. Pfau

Inked by Verified by

Records accompanying sheet (check those forwarded):

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

Sounding books, Wire-drag books, Photographs.

Tube Graphs, RAR Computations, Bomb Rec. Bk. Hor. Ang. Bk. Statistics Sh.

Data from other sources affecting sheet

Remarks:

4559 Add'l Wk

4559 Add'l Wk

C. & G. SURVEY
L. & A.
MAY 17 1928

Form 504

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

State: CALIFORNIA

11-5613

DESCRIPTIVE REPORT.

HYD. Sheet No. H4559 Add'l. Wk.

LOCALITY:

COAST OF SOUTHERN CALIFORNIA

SANTA MONICA BAY -- WESTWARD.

1928

CHIEF OF PARTY:

F. G. ENGLE

5-27 24

DESCRIPTIVE REPORT

T O A C C O M P A N Y

HYDROGRAPHIC SHEET NO. 4550 - - - - - SCALE, 1:120,000
COAST OF SOUTHERN CALIFORNIA, SANTA MONICA BAY - WESTWARD.
ADDITIONAL WORK DONE BY DISCOVERER IN 1928.

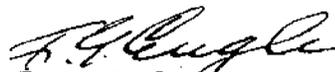
The work was done in accordance with Director's Instructions of December 16, 1927, Par., 18(c) and (d) and Par. 22.

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

The lines were fixed by visual fixes on triangulation points and objects located by cuts.

The work called for in Par., 18(a) and (b) was not done on account of closing of season.

Respectfully submitted,



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

STATISTICS FOR HYD. SHEET NO. H4559

<u>Date</u>	<u>1928</u>	<u>:</u>	<u>Letter</u>	<u>:</u>	<u>Volume</u>	<u>:</u>	<u>Positions</u>	<u>:</u>	<u>Sdgs.</u>	<u>:</u>	<u>Miles(st)</u>	<u>:</u>	<u>Vessel</u>
Mar.	30	:	A	:	1	:	25	:	102	:	19.0	:	DISCOVERER
		:		:		:		:		:		:	
Apr.	3	:	B	:	1	:	76	:	369	:	67.8	:	"
		:		:		:		:		:		:	
"	4	:	C	:	1 & 2	:	104	:	623	:	95.5	:	"
		:		:		:		:		:		:	
"	5	:	D	:	2	:	93	:	543	:	94.1	:	"
		:		:		:		:		:		:	
TOTALS --							298		1637		276.4		

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

December 17, 1928.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4559 (Additional Work)

Southern California

Surveyed in 1928

Instructions dated Dec. 16, 1927

Chief of Party, F. G. Eagle.

Surveyed by F. G. E.

Protracted by T. B. Reed and G. A. Nelson.

Soundings plotted by G. A. Nelson.

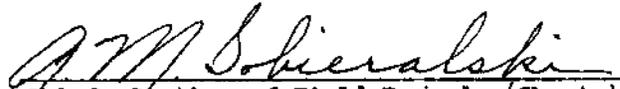
Verified and inked by F. B. Kelly.

1. The records conform to the requirements of the General Instructions.
2. The plan and character of development fulfill the requirements of the General Instructions.
3. Specific instructions were carried out with the exception of Paragraphs 18 a and 18 b.
4. The additional work generally shows good agreement with the original work.
5. No depth curves were drawn in the field.
6. Report by F. B. Kelly, November 10, 1928.

-
1. The junctions and crossings with the previous work are adequate.
 2. The specific instructions have been complied with except for Paragraphs 18 a (north~~east~~^{west} of San Nicholas Island) and 18 b (split line south of Santa Rosa Island). No additional work is required except on these two areas. *and.*

3. Character and scope of surveying and field drafting are excellent.
4. Reviewed by E. P. Ellis, November, 1928.

Approved:


Chief, Section of Field Records (Charts)

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

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

4559 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. H4559 Add'l. WK.

State California

General locality Southern Coast.

Locality Santa Monica Bay -- Westward.

Scale 1:120,000 Date of survey March & April, 1928

Vessel DISCOVERER

Chief of Party F. G. Engle

Surveyed by F. G. Engle

Protracted by T.B.R. & G.A.N.

Soundings penciled by G. A. N.

Soundings in fathoms ~~1854~~

Plane of reference MLLW

Subdivision of wire dragged areas by _____

Inked by _____

Verified by _____

Instructions dated Dec., 16, _____, 1927

Remarks: _____

appended to Chart 5115 Feb 13, 1936 - J. S. ...
appended to Chart 511X Feb 24, 1936 - J. S. ...

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. *H 4559 (add'l work)*

The following statistics will be submitted with the cartographer's report on the sheet:

Number of positions on sheet *298* . .
Number of positions checked *.56* . .
Number of positions revised *.8* . .
Number of soundings recorded *1637* . .
Number of soundings revised *.67* . .
Number of signals erroneously
plotted or transferred *0*

Date: *Nov 10, 1928*

Cartographer: *Francis B. Kelly*