

6211

U. S. COAST & GEODETIC SURVEY
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DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. Patton *Director*

State: CALIFORNIA

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. 83
Hydrographic }

LOCALITY

~~Offshore~~ - Southern California Coast
Southwest
~~West and South of Tanner and Cortes~~

Banks

1936

CHIEF OF PARTY

H. B. Campbell, H. & G. Engr.

U. S. GOVERNMENT PRINTING OFFICE: 1928

68

6211

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

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. 83

REGISTER NO. H6211

State CALIFORNIA

General locality ~~Offshore~~ Southern California Coast
Southwest

Locality West and south of Tanner and Cortes Banks

Scale 1:80,000 Date of survey June 6 to Nov. 6, 1936

Vessel PIONEER

Chief of Party H. B. Campbell

Surveyed by do

Protracted by W. M. Scaife

Soundings penciled by do

Soundings in fathoms ~~feet~~

Plane of reference M. L. L. W.

Subdivision of wire dragged areas by

Inked by W. R. Jackson

Verified by W. R. Jackson

Instructions dated June 25, 1934 and July 16, 1935. 102

Remarks:

DESCRIPTIVE REPORT

TO ACCOMPANY HYDROGRAPHIC SHEET

FIELD NO. 83.
Season of 1936.

U.S.C. & G.S.S. PIONEER

H. B. Campbell, Commanding.

AUTHORITY

This survey, a part of Project No. HT-187, was made under the Director's Instructions dated June 23, 1934, and Supplemental Instructions dated July 16, 1935. ✓

LOCALITY

This survey covers a part of the offshore area off the coast of Southern California. Its sub-locality is southwest of San Nicolas Island, west of Tanner Bank, and west and south of Cortes Bank. ✓

CONTROL

The hydrography was controlled entirely by R. A. R. The following R. A. R. stations were used: ✓

STATION	LOCATION	POSITION (NA 1937 Datum)		
		Lat.	Long.	Height
MIKE	San Miguel Island	34° 00'	120 19	+ 1213 meters
				1355
NICK	San Nicolas Island	33 12		650
		119 26		964
CHINA	China Point, San Clemente Island	32 47		996
		118 26		397
TANNER	Tanner Bank	32 41		1714
		119 08		48
LAN	Bank west of Tanner Bank	32 40		1080
		119 35		1480
AN-2	ditto	32 40		830
		119 35		1055
CORTES	Cortes Bank	32 28		906
		119 13		299
CORTEZ 2	ditto	32 28		556
		119 12		1227

STATION	LOCATION	POSITION		
		(NA 1927 Datum)		
CORTES-3	Cortés Bank	Lat.	32° 28'	556
		Long.	119 12	866

The chartered launch JOANNE was used for the floating stations, moored to buoys anchored on the banks and located by bomb distances from other stations.

All shore station hydrophones were located by sextant angles on signals ashore.

On station CORTES, armored cable was laid along the mooring cable from the buoy to the anchor, and thence along the bottom to a hydrophone anchored at some distance from the mooring buoy anchor. This station was used but little, owing to the fact that, although several attempts were made to reestablish or repair it, it was invariably put out of commission by the rough usage to which the cable was subjected in such an exposed locality. On all other floating stations the hydrophone was hung over the side of the JOANNE.

Stations CORTES-2 and TANNER were located on Sheet Field No. 41. All other ^{floating} stations were located directly on this sheet.

CORTES-2 was used as a master station, and time circles were drawn from it as center. Hydrographic positions using CORTES and CORTES-3 were plotted from the master circles, and eccentric corrections were made with a template to refer them to their true centers. In such cases the preliminary bomb distances were plotted in dashed lines, and the corrected distances in solid lines.

This method was also used for plotting bomb distances from AN, using AN-2 as the master station.

SURVEY METHODS

The usual methods of determining positions by R. A. R. and soundings by fathometer supplemented by vertical casts were used.

Owing to obstruction of sound waves by banks or other irregularities in this area of very irregular bottom, there were at times large triangles of error in hydrographic positions. In some cases bombs failed to come through from all

stations, and in many other cases only one bomb came through. It was found that with the errors to which bomb distances are subject, a position is not necessarily exactly where the bombs place it.

In plotting the sheet, all factors, such as bomb distances, course, log, time, crossings, etc. were taken into consideration, and in cases of non-agreement of certain factors, positions were plotted in what were decided to be the most probable locations.

It is believed there is no appreciable error in the positions as finally plotted.

All soundings are by fathometer except where noted V. C.

A table of fathometer corrections is appended to volume No. 1 of the sounding records and to this report.

For details of fathometer corrections see "Special Report on Fathometer Corrections, Season of 1936", U.S.C. & G.S.S. PIONEER.

DANGERS

There are no dangers on this sheet.

INVESTIGATION OF REPORTED SHOALS

The following soundings in the area covered by this sheet have been reported by a Captain Hanson (See memorandum from Office, 1935)

See Chart Letter 205 of 1929.

A 68 fathom bank reported in approximate latitude $32^{\circ} 40'$, Longitude $119^{\circ} 35'$.

The shoalest sounding obtained on this bank by the present survey was 70 fathoms in Latitude $32^{\circ} 40'7$, Longitude $119^{\circ} 35'9$.

A thirty fathom sounding reported in approximate latitude $32^{\circ} 00'$ longitude $119^{\circ} 20'$. The Office memorandum further states: "The (USS) Hull and (USS) Corey in 1922 obtained a definite indication of a bank here, with a depth of 30 fathoms in practically the same spot as reported by Captain Hanson". This reported shoal is shown on U. S. Hydrographic Office Bathymetric Chart No. 5194.

No evidence of this shoal was found. A vertical cast of 949 fathoms was obtained in Latitude $32^{\circ} 00.3'$, Longitude $119^{\circ} 19.5'$ (Pos. 36 S-day). The adjacent soundings on all sides are greater than 900 fathoms.

See par. 10 review.

An attempt to locate this reported shoal was made at the beginning of the season, (part of A-day, and all of B and C days), with the object in view of using it for a floating R. A. R. station.

It was necessary to reject all of A-day after Position 16, and all of B. and C days, due to unsatisfactory receipt of bomb distances. However, during this time the area was cruised over extensively, thus furnishing many lines of soundings in this vicinity in addition to those shown on the sheet.

DISCREPANCIES

Latitude 32° 15.8', Longitude 119° 10.8', Position 38-39D, with 820 ~~200~~ fathoms, crosses 30-31P between 765 and 800 fathoms. Keep the shoaler soundings-- they are better controlled.

Latitude 32° 04', Longitude 119° 12', Position 85-86F, with 600 fathoms, crossing 27-28S between 540 and 530 fathoms. These soundings are on a very steep slope. It is probable that a shoaler sounding near the 600 fathoms between 85 and 86 F was missed by the fathometer operator. It is recommended the shoaler soundings be retained, as very unsteady voltage was reported by the fathometer operator ^{between} 85-84F, shortly prior to these soundings.

JUNCTIONS WITH OTHER SHEETS

This survey joins the following sheets:

Sheet Register No. 5775 (1933): } On the north. ✓
do 5646 (1932-33): }

Sheet Field No. ^{H-6209} 201 (1936) On the west and south. ✓

Sheet Field No. ^{H-6206} 41 (1936): }
Sheet Register No. 6120 (1935): } On the east. ✓
do 6121 (1935): }

Sheet Register No. 4447 (1924-25): On the northeast.

(The area covered by sheet 4447 has been partly covered by new surveys, and will be completely covered by new surveys during the field season of 1937.)

COMPARISON WITH PREVIOUS SURVEYS

This sheet is a resurvey of the area covered by parts of the following sheets:

Sheet Register No. 4265b (1922-23) ✓ See review for
do 4447 (1924-25) ✓ additional prior surveys.
do 4549a (1925). ✓

The agreement of the present with the previous surveys is fair after taking into account some large and variable displacements.


W. M. Scaife,
H. and G. Engineer,
U.S.C. & G.S.S. PIONEER.

Approved and forwarded:

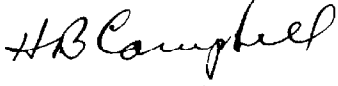

H. B. Campbell,
H. & G. Engineer,
Commanding Ship PIONEER.

TABLE OF STATISTICS

Sheet Field No. 83

1936

Date	Day Letter	Positions			Soundings			Statute Miles Sounding Lines
		Bomb	Other	Total	Fathometers	V. C.	Total	
6/13	A	15	1	16	257	-	257	82.8
14	B	REJECTED						
15	C	REJECTED						
7/10	D	32	11	43	301	-	301	67.0
11	E	37	16	53	429	-	429	146.0
12	F	48	40	88	541	1	542	152.0
13	G	32	13	45	280	-	280	125.0
14	H	44	21	65	472	-	472	117.0
15	J	12	1	13	123	1	124	43.8
26	K	3	2	5	19	1	20	6.0
9/4	L	6	-	6	80	-	80	16.0
24	M	24	8	32	212	1	213	64.5
25	N	21	9	30	268	1	269	61.0
26	P	43	23	66	543	-	543	125.3
27	Q	34	15	49	481	2	483	135.0
28	R	36	33	69	642	3	645	135.0
29	S	35	25	60	314	5	319	111.0
10/10	T	31	10	41	367	1	368	124.0
11	U	39	13	52	547	1	548	129.3
12	V	39	23	62	519	1	520	130.0
13	W	43	23	66	589	-	589	136.0
22	X	31	15	46	397	2	399	103.0
23	Y	33	18	51	452	2	454	148.0
24	Z	45	31	76	572	2	574	145.0
25	AA	30	18	48	390	2	392	114.0
11/6	BB	25	17	42	245	4	249	64.0
Totals		738	386	1124	9040	30	9070	2480.7

TABLE IV
FINAL FATHOMETER
CORRECTIONS
 (Depths over 200 Fathoms)

Depth Range (Fms)	Velocity Corrn. (Fms.)	Fast Disc Speed		Slow Disc Speed	
		Index Cor. (Fms)	Final Cor. (Fms.)	*Index Cor. (Fms.)	Final Cor. (Fms.)
200- 269	- 2	+ 3	+ 1	+ 2	0
270- 349	- 3	+ 3	0	+ 2	- 1
350- 429	- 4	+ 3	- 1	+ 2	- 2
430- 509	- 5	+ 3	- 2	"	- 3
510- 599	- 6	"	- 3	"	- 4
600- 679	- 7	"		"	- 5
680- 769	- 8	"		"	- 6
770- 869	- 9	"		"	- 7
870- 999	- 10	"		"	- 8
1000-1140	- 11	"		"	- 9
1150-1689	- 12	"		"	- 10
1690-1819	- 11	"		"	- 9
1820-1929	- 10	"		"	- 8
1930-2019	- 9	"		"	- 7
2020-2089	- 8	"		"	- 6
2090-2159	- 7	"		"	- 5
2160-2219	- 6	"		"	- 4

No soundings taken in
 these depths by fast
 disc speed.

* Combination of fast disc speed Index correction and mean comparison between fast disc speed and slow disc speed in depths of 200 fathoms.

Fast speed Index error	+ 3.3 fms.
Mean of comparison (fast disc speed minus slow disc speed)	- 1.2 "
Slow disc Index error	+ 2.1

FINAL FATHOMETER CORRECTIONS
UNDER 200 FATHOMS

(Season 1936)

✓

Nos. 3 & 4 Hydrophone Big Oscillator		No. 1 Hydrophone Small Oscillator	
Depth	Correction	Depth	Correction
10.0 - 10.2	+ 0.6	30 - 39	+ 3.5
10.3 - 10.4	0.7	40 - 87	3.0
10.5 - 10.9	0.8	88 - 126	2.5
11.0 - 11.4	0.9	127 - 160	2.0
11.5 - 11.9	1.0	161 - 192	1.5
12.0 - 12.4	1.1	193 - 200	1.0
12.5 - 12.9	1.2		
13.0 - 13.4	1.3		
13.5 - 13.9	1.4		
14.0 - 14.9	1.5		
15.0 - 15.9	1.6		
16.0 - 16.9	1.7		
17.0 - 17.9	1.8		
18.0 - 18.9	1.9		
19.0 - 22.9	2.0		
23.0 - 108	2.5		
109 - 150	2.0		
151 - 183	1.5		
184 - 200	1.0		

NOTE

Bottom characteristics obtained on some of the vertical casts were recorded in the Serial Water Temperature volumes only, and not in the sounding records. These volumes were forwarded to the Office before this data was taken from them. It is believed the missing bottom characteristics can be found in the above named volumes.

See par. 1c,
review.
LJ

CHIEF OF PARTY'S REPORT OF INSPECTION
OF RECORDS AND SHEET

This sheet and the records accompanying it have been
examined and are approved by me.

The sheet was plotted, the soundings penciled, and the
descriptive report written by Lieutenant W. M. Scaife.

No further work in this area is recommended.

H B Campbell

H. B. Campbell,
H. & G. Engineer,
Chief of Party,
Commanding Ship PIONEER.

VERIFICATION REPORT, HYDROGRAPHIC SURVEY H-6211 (R. A. R.)

1. The records are satisfactory, except that it would have been easier to plot and verify the sheet had the sounding records contained the bomb distances. ✓
2. The sounding line crossings are in good agreement. ✓
3. The usual depth curves were completely drawn. ✓
4. There are no aids to navigation on the sheet. ✓
5. The junctions with contemporary adjacent surveys, H-5775, H-6206, H-6120 and H-6121 are in general satisfactory. Where the agreement is not good the soundings have been left in pencil. The All junctions junction with H-6209 will be effected when that sheet has been satisfactorily verified. The junction with H-5646 was left in pencil as the agreement adjusted. was not very good.
6. The field plotting was, in general, satisfactory. Too hard a pencil was used making deep indentations in the paper. ✓

The plotting of the preliminary arc (bomb distance) in a dashed line and the arc for the eccentric correction in a solid line is very confusing. The only explanation to this being in the descriptive report. Only the final corrected arc should be plotted on the sheet. ✓

Positions 1-8 BB were rejected in the records by the field plotter and yet are plotted on the sheet and are satisfactory. ✓

The position numbers are too large. In some cases as large as and some even larger than the soundings. ✓

Degree and minute marks left off sheet. ✓

7. Attention is called to the discrepancy at

Lat. $32^{\circ}16'$
Long. $119^{\circ}11'$ - 820 on about 770. Changing depths. Satisfactory.

Lat. $32^{\circ}12.5'$
Long. $119^{\circ}42.5'$ - A 665 questioned in the records, yet this O.K. is a quick changing depth.

Lat. $32^{\circ}42'$
Long. $119^{\circ}52'$ - A fathometer sounding and vertical cast of 387 fms. surrounded by 450 fms. Slightly out of position. Retain as is.

Respectfully submitted,

William R. Jackson

William R. Jackson.

Sept. 3, 1937.

GEOGRAPHIC NAMES

Survey No. E-6211

Name on Survey	Source											
	A	B	C	D	E	F	G	H	K			
<u>Cortes Bank</u>	✓											1
<u>Tanner Bank</u>	✓											2
												3
												4
												5
												6
												7
												8
												9
												10
												11
												12
												13
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												21
												22
												23
												24
												25
												26
												27

Names underlined in red approved
 by JAE on 7/6/37

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. **H6211**

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

Number of positions on sheet	..1124.
Number of positions checked	...59.
Number of positions revised	...34.
Number of soundings recorded	..9070.
Number of soundings revised	...49.
Number of signals erroneously plotted or transferred

Date: *Sept. 3, 1937.*

Verification by *W.R. Jackson*

Time: *108 hrs.*

Review by *J.A. McCormick*, Nov. 17, 1937.

Time: *49 hrs.*

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
DESCRIPTIVE REPORT
~~PHOTOSTAT OF~~

No. H-6211
~~No. 5~~

{ received June 28, 1937
registered June 29, 1937
verified
reviewed
approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
24			
25			
26			
30			
40			
62			
63			
82			
83			
88			
90			

RETURN TO

82	C. K. Green
----	-------------

✓

200

TIDE NOTE FOR HYDROGRAPHIC SHEET

July 14, 1937.

Division of Hydrography and Topography:

✓ Division of Charts: Attention: Mr. E. P. Ellis.

Plane of Reference

~~Tide Reducers are~~ approved in
6 volumes of sounding records for

HYDROGRAPHIC SHEET 6211

Locality Southwest of Tanner and Cortes Banks, Coast of Southern California.

Chief of Party: H. E. Campbell

Plane of reference is mean lower low water, reading

3.6 ft. on tide staff at Wilson Cove

16.2 ft. below B.M. 2

Height of mean high water above plane of reference is 4.4 feet.

Condition of records satisfactory except as noted below:

Acting Chief, Division of Tides and Currents.

HYDROGRAPHIC SURVEY NO. H-6211

Smooth Sheet Yes

Boat Sheet Yes

Sounding Records 6 Vols. _____

Bomb Records 2 " _____

Descriptive Report Yes

Title Sheet Yes

List of Signals Page #1, D. R.

Landmarks for Charts (Form 567) None

Statistics Yes

Approved by Chief of Party Yes

Recoverable Station Cards (Form 524) None

Special Chart for Lighthouse Service None
(Circular Nov. 30, 1933)

Remarks _____

HYDROGRAPHY

Total Days 26

Last Date Nov. 6, 1936

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6211 (1936) FIELD NO. 83

Southwest of Tanner and Cortes Banks, Southern California Coast
Surveyed in June - November 1936, Scale 1:80,000
Instructions dated June 23, 1934 and July 16, 1935 (PIONEER)

Fathometer Soundings.

RAR control.

Chief of Party - H. B. Campbell.
Surveyed by - H. B. Campbell.
Protracted by - W. M. Scaife.
Soundings plotted by - W. M. Scaife.
Verified and inked by - W. R. Jackson.

1. Condition of Records.

The records are neat and legible and conform to the requirements of the Hydrographic Manual except as follows:

- a. No reference station was indicated on the smooth sheet. This was accomplished in the office.
- b. Positions were not determined for the majority of the fathometer comparisons. They were spotted approximately between previous and subsequent fixes and in several cases were removed from the sheet in the office because of the uncertainty of position and lack of agreement with adjacent soundings.
- c. Bottom characteristics obtained on nine vertical casts were recorded in the Serial Water Temperature records only and not transferred to the sounding volumes nor shown on the smooth sheet. These characteristics were transferred to the sounding volumes in the office and plotted in their proper positions on the smooth sheet.
- d. Bomb distances are recorded in the bomb records only. It is preferable that final adjusted distances also be entered in the sounding records in order to facilitate the plotting and verification of the smooth sheet.
- e. Degree and minute symbols were omitted from values of latitude and longitude shown on parallels and meridians. These were added in the office.
- f. Values in seconds of the time arcs were shown in too many places, many of them within the sounded area, resulting in possible confusion with the soundings. Values falling among the soundings were removed in the office.

- g. Position numbers and day letters on the smooth sheet are in general too large, some being as large as the soundings.
- h. A slight departure from usual practice was employed in the plotting of bomb intersections from eccentric hydrophone stations. A preliminary intersection arc was plotted from the time circles using the adjusted bomb distance and ignoring the eccentricity. This preliminary arc was inked in a dashed line. The eccentricity was then applied to the preliminary arc and the final arc inked in a solid line.

The Descriptive Report satisfactorily covers all items of importance except the following:

- i. No mention was made of the method used in plotting the time circles on the sheet for stations MIKE and CHINA which fall a considerable distance outside the limits of the survey.
- j. The method of obtaining the velocity of sound (1482.5 meters per second) used in plotting RAR distances is not given.
- k. More details should have been given concerning the scope of the anchor chain on the station buoys and the swing of the hydrophones with the current.

2. Compliance with Instructions for the Project.

The survey satisfies the instructions for the project.

3. Shoreline and Signals.

This is an offshore survey and no shoreline has been shown.

Locations of hydrophone stations originate with the following sources:

- a. "Mike", "Nick" and "China", shore hydrophones at San Miguel Island, San Nicolas Island and San Clemente Island respectively, were located by three-point fixes on shore signals. There is no information in the records for the present survey, however, to indicate where the fixes are recorded. The geographic positions are given on page 1 of the Descriptive Report.
- b. See paragraphs 3b and 3c of the review of H-6206 (1936) for the origins of the positions of floating hydrophone stations "Cortes 2" and "Tanner". Station "Tanner" on the present survey is the same as Station "Tan" on H-6206 (1936).
- c. Floating hydrophone station "An" was located from bomb intersections at pos. 1-4 X in volume 8 of the records for the present survey.

- d. Floating hydrophone station "An 2" was located from bomb intersections at pos. 1 - 4 CC in volume 8 of the records for the present survey.
- e. Floating hydrophone station "Cortes 3" was located from cuts at pos. 31 and subsequent positions on "N" day in volume 7 of the records for the present survey.
- f. Floating hydrophone station "Cortes" was located from cuts at various positions on "E" day in volume 3 of the records for H-6208 (1936).

4. Sounding Line Crossings.

Sounding line crossings are in general very good. The average difference is well within the allowable limits.

5. Depth Curves.

Within the limits of the present survey the usual depth curves may be satisfactorily drawn.

6. Junctions with Contemporary Surveys.

- a. The junctions with H-6209 (1936) on the west and south, H-6206 (1936), H-6120 (1935) and H-6121 (1935) on the east and H-5775 (1933) on the north are satisfactory.
- b. The junction with the survey on the northeast will be considered when it is received from the field.
- c. The junction with H-5646 (1933) on the north is, in general, satisfactory. There are, however, discrepancies in the crossings of the sounding lines of the two surveys. The major differences have been minimized by office adjustment but several of the minor ones could not be improved without making others worse. Part of the discrepancies may be due to difference in fathometer procedure and part of the difference in control used on the two surveys (RAR in 1936, fixed position supplemented by RAR in 1933).

7. Comparison with Prior Surveys.

- a. H-289 (1851), 1:375,000.

This is a reconnaissance survey which contains only a few no bottom soundings within the area of the present survey. It need not be considered in future charting.

- b. H-4265a (1922-28) 1:120,000.

This survey contains only one sounding within the area of the present survey. The method of control is based on

astronomic fixes and dead reckoning. The sounding is approximately three miles out of position with relation to the depths on the present survey. It is of no current value in charting and should be superseded by the present survey.

c. H-4265b (1922-28) 1:120,000.

This survey covers a portion of the present survey south of Cortes Bank. The original work done in 1922-23 and consisting of wire soundings controlled by astronomic fixes and dead reckoning is out of position with relation to the present survey. The additional work done in 1928 and consisting of fathometer soundings controlled by dead reckoning from Cortes Bank Whistle Buoy is in general good agreement with the present survey. The 416 and 418 fathom fathometer soundings (not charted) in lat. $32^{\circ} 06'$, long. $119^{\circ} 11'$ on H-4265b (1922-28) originate with pos. 10-11B (red) and fall in depths of 470 fathoms on the present survey with the minimum depth in this vicinity of 432 fathoms 1-1/2 miles to the southeast. The 432 is in good agreement as to position with a 436 which is the next shoalest depth to the 416 and 418 on the prior survey. There is a strong possibility that the 416 and 418 are 100 fathoms in error as they fall beside a 517 on the same survey. In view of the above arguments and considering the fact that the fathometer soundings obtained by the slow red light method on the present survey are undoubtedly more accurate than those obtained by the white light method on the prior survey, the retention of the 416 and 418 is not considered justified and they have not been carried forward to the present survey. The above survey as a whole contains no features which need to be retained and should be superseded in future charting.

d. H-4267 (1923-28), 1:40,000.

This survey contains a very few soundings within the limits of the present survey in the area south of Cortes Bank. The depths are in fair agreement with those on the present survey but are slightly out of position. The present survey should supersede for charting purposes.

e. H-4447 (1924-28) 1:120,000.

This survey covers the northern portion of the present survey with soundings obtained mostly by pressure tubes and sonic depth finder. Depths are in fair agreement with those on the present survey but are considerably out of position due to the method of control which is based on precise dead reckoning. The present survey because of its better development and more accurate control, should supersede the above survey in future charting.

f. H-4549a (1925-28) 1:140,000.

This survey covers the southern portion of the present survey with soundings obtained mostly by pressure tubes and sonic depth finder. The fathometer was used for the additional work done in 1928. Depths are displaced in position in varying amounts and directions with relation to the present survey due to the method of control which is based on dead reckoning. The following are some of the more important discrepancies:

- (1) The 196 fathom sonic sounding (charted) in lat. $32^{\circ} 32.5'$ long. $119^{\circ} 23.0'$ on H-4549a (1925-28) originates with pos. 47 W' (blue) and falls in depths of 300 fathoms on the present survey. A wire sounding of 249 fathoms was presumably obtained at the same time and is so shown on the smooth sheet but is not clearly indicated in the sounding volumes. Surrounding depths on the prior survey are from 350 to 536 fathoms with a 500 fathom sounding (not plotted) falling almost squarely on the 196. In contrast to this, the surrounding depths on the present survey are from 290 to 317 fathoms. It is evident that the soundings on the prior survey are not in agreement within themselves and are out of position with relation to the present survey. The 196 and 249, if authentic, undoubtedly belong farther to the eastward in similar depths on the present survey. They should be disregarded in future charting.
- (2) The 198 fathom sonic sounding (charted) in lat. $32^{\circ} 30.5'$ long. $119^{\circ} 21.8'$ on H-4549a (1925-28) originates with pos. 5 W' (blue) and falls in depths of 240 to 355 fathoms on the present survey. A 96 fathom sonic sounding obtained just previous to the 198 on the same line was not plotted although it falls outside the 200 fathom curve on the prior survey. The 198 is undoubtedly out of position as the soundings on the line of which it is a part average 50 to 100 fathoms shoaler than those which they cross. It should, therefore, be disregarded in future charting.
- (3) The 123 fathom red light fathometer sounding (charted) in lat. $32^{\circ} 33.7'$, long. $119^{\circ} 29.8'$ on H-4549a (1925-28) originates with pos. 11-12B (red) of the 1928 additional work and falls in depths of 155 to 161 fathoms on the present survey with a minimum depth in this vicinity of 145 fathoms 0.5 mile to the southeast. Surrounding depths on the two surveys are in good agreement. As the 123 is verified by similar shoal depths of 126 and 128 fathoms on the same line, these three soundings have been brought forward to the present survey.

- (4) The 250 fathom sonic sounding (charted) in lat. 32° 26.5', long. 119° 25.8' on H-4549a (1925-28) originates with pos. 89-90 U' (blue) and falls in depths of 475 fathoms on the present survey. Surrounding depths on the two surveys are in fair agreement when due allowance is made for the difference in control. The next shoalest depth obtained in this area on the prior survey is 325 fathoms as against a minimum depth of 328 fathoms on the present survey. As the sounding immediately following the 250 on the line 89 - 90 U' is 593 fathoms it is possible that the 250 was an erroneous reading of a 500 fathom depth (a common error in reading the sonic depth finder is to halve or double the depth) and it has not been carried forward.

H-4549a (1925-28) contains no other features which need to be considered and should be superseded by the present survey, including transferred soundings, in future charting.

- g. H-4549b (1925) 1:20,000; H-4551a (1926), 1:100,000;
H-4561 (1926), 1:140,000

Each of these surveys covers a very small portion of the present survey. Depths are in fair agreement but are out of position in varying amounts and directions. They contain no information of current value in charting and should be superseded by the present survey.

8. Comparison with Chart 5002 (New Print dated June 2, 1937)
Chart 5101 (New Print dated Oct. 23, 1937)
Chart 5113 (New Print dated Mar. 30, 1936)

a. Hydrography.

Within the area of the present survey the charts are based on surveys discussed in the foregoing paragraphs and contain no other information which needs consideration in this review.

b. Aids to Navigation.

There are no aids to navigation within the area of the present survey.

9. Field Plotting.

The field plotting is satisfactory. *H. H. H.*

10. Additional Field Work Recommended.

No additional field work is recommended.

11. Reported Shoals.

The following two shoals were reported within the area of the present survey by Captain A. Hanson of Oakland, California, in March 1929. (See Chart Letter 205 of 1929 for correspondence relative to shoals and Descriptive Report, pages 3 and 4, for discussion of search made for them on present survey). Neither of the reported depths is shown on the latest charts.

- a. The 68 fathom bank reported about 34 miles south (magnetic) of the east end of San Nicolas Island corresponds to the bank shown on the present survey with a least depth of 70 fathoms in lat. $32^{\circ} 40.7'$, long. $119^{\circ} 35.9'$. Chart 5101 shows a least depth on the bank of 75 fathoms which originates with H-4549a (1925-28). As the soundings on the present survey are undoubtedly more accurate than those obtained by Capt. Hanson, the 70 should be charted as the least depth on the bank.
- b. The 30 fathom sounding reported in approximate lat. $32^{\circ} 00'$ long. $119^{\circ} 20'$ falls in depths of about 950 fathoms on the present survey. The nearest indication of such shoal depths is on Cortes Bank, 30 miles to the north. The development on the present survey is considered sufficient to disprove the existence of the 30 in the position reported and it should be disregarded in future charting.

12. Superseded Old Surveys.


Within the area covered the present survey supersedes the following surveys for charting purposes:

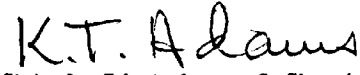
H-289 (1851) in part	H-4549a (1925-28) in part
H-4265a (1922-28) in part	H-4549b (1925) in part
H-4265b (1922-28) in part	H-4551a (1926) in part
H-4267 (1923-28) in part	H-4561 (1926) in part
H-4447 (1924-28) in part	

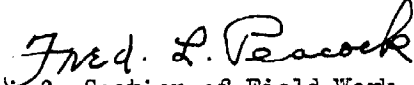
13. Reviewed by - J. A. McCormick, Nov. 17, 1937.


Inspected by - A. L. Shalowitz.

Examined and approved:


T. B. Reed,
~~acting~~ Chief, Field Records Section.


K.T. Adams
Chief, Division of Charts.


Fred L. Peacock
Chief, Section of Field Work.


G. H. De
Chief, Div. of H. & T.

Remarks

Decisions

	Remarks	Decisions
1	<i>For Title</i>	<i>see H-6206</i>
2	<i>For Title</i>	" "
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Applied to drawing of Chart 5101

" " Compilation of near Chart 5020

Applied to Chrt. 5113, 2-10-39 *K.R.*

July 1938 *SBM*

Aug 1938 *SBM*