5666

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Form 504
Rev. Dec. 1933

DEPARTMENT OF COMMERCE
U.S. COAST AND GEODETIC SURVEY
R. S. PATTON, DIRECTOR

DESCRIPTIVE REPORT

~~Topographic~~
Hydrographic } *Sheet No.* 18 - 1934

State CALIFORNIA

LOCALITY

SOUTHERN CALIFORNIA COAST

OFF SAN DIEGO

193 4

CHIEF OF PARTY

ROBERT W. KNOX

U. S. GOVERNMENT PRINTING OFFICE: 1934

Form 537

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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. 18 5666

REGISTER NO.

State CALIFORNIA

General locality SOUTHERN CALIFORNIA COAST

Locality OFF SAN DIEGO

Scale 1:10000 Date of survey Mar. 10-Oct.11, 1934

Vessel Chartered Launches JOANNE and ROMANCE

Chief of Party R.W. KNOX

Surveyed by R.J. SIPE and K. McBEAN

Protracted by R.A. PHILLEO

Soundings penciled by H.D. DUDD

Soundings in ~~fathoms~~ feet

Plane of reference M L L W

Subdivision of wire dragged areas by None

Inked by

Verified by IRVIN MICHAELSON

Instructions dated April 14, 1932

Remarks:

U. S. GOVERNMENT PRINTING OFFICE

Survey No. H 5666

GEOGRAPHIC NAMES

Date. Mar. 4. 1935 CALIFORNIA Chart No. 5102

Diagram No. 5102-3

Approved by the Division of Geographic Names, Department of Interior. ✳

Referred to the Division of Geographic Names, Department of Interior. R

Under investigation. Q

Status	Name on Survey	Name on Chart	New Names in local use	Names assigned by Field	Location
	----------	✓San Diego			
	Point Loma	Same			
	North Island	"			
	Coronado	"			
	----------	Zuniga Shoal ✳ R			

(M-130)

DESCRIPTIVE REPORT

To Accompany

SHEET (field) NO. 18

Off San Diego

Southern California

Scale 1:10000

1934

INSTRUCTIONS:

The authority for the execution of this survey was contained in the Director's Instructions dated April 14, 1932, Supplemental Instructions dated September 13, 1933, and Supplemental Instructions dated March 9, 1934. Also, in part, by the Director's Instructions to the Commanding Officer, U.S.C.&G.S.S. PIONEER, dated June 23, 1934.

SURVEY METHODS:

The vessels used in making this survey were the chartered launches JOANNE and ROMANCE, and, for work close inshore, a whaleboat powered by an outboard motor. The work of the JOANNE covers "a" to "p" days (blue), and the ROMANCE "a" to "g" days (red), with the whaleboat being used from Positions 1 to 106 on "f" day (red). (Note: On the Boat Sheet, the day letters for the ROMANCE are shown as "r" to "x", instead of "a" to "g", as they were erroneously plotted in continuation of the series of the JOANNE. They are, however, in their proper color, - red.)

The sounding lines are, in general, spaced slightly less

than 100 meters apart. Positions were obtained by the customary 3-point sextant fixes, or, in a few cases, by a distance and bearing from a single signal closeby. The great majority of the soundings were taken with the usual hand lead line graduated in fathoms and half-fathoms. A few soundings in the deeper water were taken with a modified trolley rig by which the lead (36 lb.) was dropped and hauled in by means of the gas-driven sounding machine over a boom rigged out on the port side forward. The measuring line consisted of a length of the usual graduated lead line spliced to an 8 fathom length of stranded wire inserted between the lead and the graduated portion, and was read by the leadsman stationed on the port side aft. This was used in depths over 10 fathoms only.

DISCREPANCIES:

No serious discrepancies in the soundings are apparent, and there appears to be a consistent agreement throughout.

A slight indication of shoaling at Lat. 32-39.7, Long. 117-13.2, was not extensively developed. The least depth obtained was 16 feet immediately after Pos. 181 e, pg. 56, Vol.2.

Some difficulty was encountered in plotting the inshore line just east of Point Loma, between Lat. 32-40.0 and 32-40.8. The shore line and rocks in this vicinity were originally traced from Air Photo Compilation Sheet No. T5373. The line as plotted did not check the rock locations, and in some cases appeared to pass directly over them. The site was visited by two members of this party, and the actual rock locations were obtained by sextant cuts. The rocks have been changed on the smooth sheet to

agree with these observations.* A copy of these field observations accompanies this report (page 3a). The recorded location of the rock awash on the sounding just before Pos. 62 f, pg.58, Vol.8, does not check the observed position by about the length of one sounding interval. It is believed that this can be attributed to not recording the exact time the rock was abeam, Observed Position accepted

Difficulty was encountered in plotting Pos. 44 and 45 a, pg.13, Vol.1, and the source of error (probably wrong right object) could not be verified. Both positions were finally plotted on left angle and time.

South and west of Point Loma the fixes on the outer lines are of necessity very weak, and there appears to be a number of course changes which have not been recorded. While no discrepancies in the soundings seem to have resulted, there are some cases (e.g. Pos. 50 to 64 c, pgs.50-53, Vol.1) where the time interval is not consistent, and where there is considerable deviation from a straight course.

It may be mentioned that throughout "a" day, Vol.1, Signal "Lo" was erroneously recorded as "Lom", which also appears on the sheet. This has been corrected in red in the record.

Three positions taken to locate buoys are recorded on page 28, Vol.9. These cannot be plotted inasmuch as Signal "East", the left object, falls considerably off the sheet. If these positions are desired they may be plotted on Sheet (field) No. 30 (1:20000). Locations of these buoys recorded as a direction and distance from sounding line positions have not

COPY OF SEXTANT ANGLES AND CUTS TAKEN TO VERIFY POSITIONS

OF ROCKS ON EASTERN SHORE OF POINT LOMA

Sextant - Loaned by City of San Diego Harbor Department - OK
Angles taken by Lt.(j.g.) J.C. Mathisson
Recorded by R.A. Philleo

(△East Radio Tower 1933 ---------- 114 - 51
Position 1 (△Tidewell Pipe 1933
(△Flag Pole Ft. Rosecrans 1933 --- 105 - 28

Cuts:

Rock No.1 - △Tidewell Pipe 1933 ----- 73 - 05
△Tidewell Pipe 1933 - Rock No.2 ----- 17 - 55

(△Bluff 1899 ---------- 80 - 56
Position 2 (⊙Jet
(△Ballast Point Light House 1899 - 75 - 11

Cuts:

Rock No.1 - ⊙Jet ---------00---00- ✓
⊙Jet -- Rock No.2 -------- 95 - 18
Extreme outside rock off △Bluff - ⊙Jet ----- 74 - 42 ✓

(⊙Jet ---------- 16 - 15
Position 3 (△Tidewell Pipe 1933
(△Ballast Point Light House 1899 - 39 - 36

Cut:
Extreme outside rock off △Bluff - ⊙Jet --- -00---00-

(⊙Jet ---------- 17 - 32
Position 4 (△Tidewell Pipe 1933
(△Ballast Point Light House 1899 - 58 - 24

Cut:
Rock No. 2 - ⊙Jet ----- 24 - 13

These rocks are plotted on T-6222 a (Graphic Control Sheet) and on T-5373 (Air Photo Compilation)

been plotted, as it is believed that the positions taken alongside are more accurate. Positions of buoys were checked by verifies from data p. 28 Vol. 9

DANGERS:

There are no dangers on this sheet which constitute a menace for navigators following the established approach to San Diego Harbor.

Around the shores of Point Loma there are numerous rocks, submerged and bare. Probably refers to 2 rocks baring 5 feet at M.L.L.W All, however, lie so close inshore, and in such shoal water, that they do not constitute a direct menace.

Off the southern tip of Point Loma a foul area is formed by numerous rocks and rock ledges. A patch of very thick growing kelp lies just to southward, and the passage between the point and the kelp bed is unused except by small local fishing craft. All deep draft vessels entering the port of San Diego keep to southward of Whistle Buoy "1A".

A shoal centering in Lat. 32-39.2, Long. 117-14.2 was found and thoroughly developed. The bottom in this vicinity is very uneven. Least depths, obtained by drifting over the area, are 25 feet on Pos. 125 m, and 27 feet on Pos. 123 m, pgs. 46-47, Vol.5. The buoyed approach to the harbor gives this shoal ample berth. It may be noted that the limit of the shoal is well defined by the edge of the kelp bed previously mentioned.

A stone jetty, protecting the main ship channel on the east, extends in a southerly direction from the southwest point of North Island for over a mile to seaward. The portion of this between Lat. 32-40.0 and 32-40.5 (shown by dashed lines on the

smooth sheet) is completely submerged at HW, and bares slightly at various points at LW. The southern end is marked by a red and black horizontal banded spar buoy (Pos. 1 f, pg.44, Vol.8). Changed to red and white Light List June 4/35.

The area lying immediately east of this jetty and south of North Island, known as Zuninga* Shoal, is unsurveyed on present charts. No dangers are indicated in this area, only a gradual shoaling from east to west being revealed.

* This name is before Pur. Geog. Names for adoption.

Small patches of growing kelp were found in the following locations: Lat. 32-39.9, Long. 117-11.7; Lat. 32-39.3, Long. 117-10.0; Lat. 32-39.1, Long. 117-10.0; and Lat. 32-38.8, Long. 117-10.0. None of these are of sufficient extent to affect navigation.

CHANNELS:

The only channel on this sheet is the main entrance channel to San Diego Harbor, which is maintained by the U.S. Engineers. The axis and ranges for this channel have been shifted since publication of present charts. Geographic positions of the new range lights were forwarded to the Director under date of December 1, 1934.* Controlling depth for this channel is maintained at 40 feet which is ample for any commercial vessels using the harbor. Shoaler depths within the harbor off the limits of this sheet control the time of entry for some of the larger Navy vessels.

ANCHORAGES:

Commercial and pleasure craft in this vicinity will normally anchor within the harbor. The area east of the main channel and south of North Island and Coronado is frequently

* For geographic positions of range lights, see lithographed sheets of Cal. Dr. p. 48. Data forwarded Dec. 1. not located S.M.A. Sec. IV

used by Navy ships for experimental purposes, but is of little value as a shelter, and of no importance as a commercial anchorage.

COMPARISON WITH PREVIOUS SURVEYS:

Previous surveys covering this area completely or in part are: Sheet 566 (1856); Sheet 2561, 1:5000, (1902); Sheet 4258, 1:40000, (1922-23); Sheet 4268, 1:10000, (1922-23); Sheet 4810, 1:20000, (1928). Of these, copies of Sheets 4258 and 4268 only are available for comparison.

Comparison with Sheet 4258 (1922-23) is of little value because of the scale of the latter (1:40000). The general agreement of the soundings is good, and a similar bottom configuration is revealed.

Sheet 4268 (1922-23) overlaps the present sheet in the channel area east of Point Loma only. Subsequent dredging has increased the depth of the channel and produced minor changes in the vicinity thereof. The shoaling in Lat. 32.39.7, Long. 117-13.2, is confirmed with a least depth of 16 feet in the present survey against 17 feet on Sheet 4268. The older survey does not extend far enough westward to confirm entirely the shoal at Lat. 32-39.2, Long. 117-14.2, also noted in this report under "Dangers", but the extreme western line has a shoal indication with two 29 foot soundings at Lat. 32-39.2. The least depth of 25 feet obtained in the present survey (Pos. 125m, pg.47, Vol.5) is not found on this sheet, however. Inasmuch as this sounding was obtained by drifting over the spot for some time for the express purpose of finding the least

depth, it is believed to be reliable. Other portions of the two sheets show good agreement in depths and configuration.

GEOGRAPHIC NAMES:

No new or conflicting names were encountered in the execution of the survey.

PLOTTING:

This sheet was plotted in San Diego subsequent to the departure of the hydrographic party, and it was not possible to consult with either of the hydrographers.

Respectfully submitted,

R.A. Philleo

R.A. Philleo,
Surveyor, C.&G.S.

Forwarded, approved

Robert W. Knox

Robert W. Knox,
C.&G.E., Chief of Party

STATISTICS

SHEET (field) NO. 18

1934

DAY	DATE	VOLUME	NUMBER OF SOUNDINGS	NUMBER OF POSITIONS	STATUTE MI. OF SDG.LINE
		Launch JOANNE (blue)			
a	Mar. 10	1	243	60	12.7
b	Apr. 27	1	457	126	23.1
c	Aug. 7	1	254	64	9.5
d	" 8	1&2	626	203	23.7
e	" 9	2	849	243	30.2
f	" 10	3	545	189	21.1
g	" 13	3	527	206	27.2
h	" 14	4	564	177	25.3
j	" 16	4	288	97	12.1
k	" 17	4&5	519	222	31.8
m	" 20	5	717	216	28.2
n	" 21	5&6	498	198	27.8
p	" 24	6	324	111	16.7
		Launch ROMANCE (red)			
a	Oct. 3	6&7	395	109	16.0
b	" 4	7	452	111	14.6
c	" 5	7	896	239	32.9
d	" 8	8	470	106	14.2
e	" 9	8	405	110	16.0
f	" 10	8&9	680	149	21.5
g	" 11	9	295	93	10.6
	TOTALS		10334	3029	415.1

Field Records Section (Charts)

HYDROGRAPHIC SHEET NO. ..5666

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

Number of positions on sheet	3,029
Number of positions checked	190
Number of positions revised	1
Number of soundings recorded	10,334
Number of soundings revised	44
Number of signals erroneously plotted or transferred	.....

Date:

Verification by IRVIN MICHAELSON Time: 29 hrs.

Inked by Mc Cann.

Review by B. Riegar Time: 8 3/4 hrs.

R. J. Christman 13 1/2 hrs.

Report on H-5666 — Surveyed – Mar – Oct 1934.

Chief of Party - R.W Knox — Surveyed by R.J. Sipe and K. McBean

Protracted by R.A Philleo — Soundings plotted by H.D Dudd

Verified by Irvin Michaelson — Inked by Mc Cann

1. The records are neat, legible and complete conforming to the general requirements of the Hydrgraphic Manual. ✓

2. The usual depth curves may be completely drawn. 12 + 18 ft. off Pt. Loma excepted. Since soundings were plotted only to the nearest foot- and not in ½ ft- depth curves are irregular.

3. Soundings were correctly plotted with but few exceptions. Protracting was excellent.

4. Field drafting was excellent.

5. Junctions

   a. With H-5679 (1935) Overlap appears on that sheet

   b. with H-5677 (1934) Overlap has been made } and curves adjusted.

   c with H-5678 (1934) " " " "

6. Comparison with Topographic Sheets-

   Air photo compilations – Low water line and shoreline were correct.

7. Misc'l

   Pos. of Buoys in Vol 9, page 28 were plotted as suggested in note and transferred to H-5666.

Respectfully Submitted,

Irvin Michaelson

5/31/35.

Fae

May 2, 1935.

F.E

Division of Hydrography and Topography:

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

Tide Reducers are approved in
9 volumes of sounding records for

HYDROGRAPHIC SHEET 5666

Locality Off San Diego, California

Chief of Party: R. W. Knox in 1934
Plane of reference is mean lower low water, reading
3.3 ft. on tide staff at San Diego, Municipal Pier #1
12.9 ft. below B.M. 13 M

Height of mean higher high water above plane of reference is 5.8 feet

Condition of records satisfactory except as noted below:

Chief, Division of Tides and Currents.

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5666 (1934) - FIELD NO. 18

Off San Diego, California
Surveyed in March 10 to October 11, 1934
Instructions dated April 14, 1932 (KNOX)
Supplemental dated September 13, 1933 (KNOX)
" dated June 23, 1934 (PIONEER)

Hand Lead and Machine Soundings (Trolley Rig). 3 Point fixes on shore signals.

Chief of Party - R. W. Knox.
Surveyed by - R. J. Sipe, K. McBean.
Protracted by - R. A. Phillco.
Soundings penciled by - H. D. Dudd.
Verified and inked by - I. Michaelson.

1. Condition of Records.

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

No copy of Landmarks for Charts on Form 567 accompanied this particular sheet (par. 168).

The Descriptive Report is complete as to essential details and satisfactorily covers all items of importance.

2. Compliance with Instructions for the Project.

The survey complies with the instructions for the project.

3. Sounding Line Crossings.

No general system of cross lines were run but the adjacent lines show good agreement.

4. Depth Curves.

Within the limits of the survey the usual depth curves may be satisfactorily drawn, including portions of the 6 foot curve, except in the area east of Pt. Loma Light (1892) where the work was not carried far enough inshore to complete the 12 foot curve.

5. Junctions with Contemporary Surveys.

Satisfactory junctions are made with H-5677 (1934) on the northwest and with H-5678 (1934) on the south.

The junction with H-5679 (1935) on the southeast will be considered in the review of that sheet.

The junction with H-4256 (1923) on the west is satisfactory. See par. 6i of this review.

6. Comparison with Prior Surveys.

a. H-268 (1851).

This survey covers the area near Pt. Loma and the channel entrance of the present survey with widely spaced lines.

The agreement in depth is generally good offshore but in the area which includes the channel a complete change in the depths and configuration has occurred as a result of channel improvements.

b. H-269 (1856).

This is a reconnaissance survey on a very small scale with very widely spaced lines and has no present value for charting purposes.

c. H-566 (1856).

This survey covers the eastern half of the area of the present survey. A general deepening from the 40 foot contour seaward has occurred since the survey, but inside the 40 foot curve the agreement in depth is, in general, good.

There is nothing of importance on this old survey for present charting purposes.

d. H-564 (1856), 1420 (1878).

These surveys cover the San Diego Harbor entrance to Ballast Point and are in general agreement in depths over 40 feet and in shoaler depths away from the influence of the channel and jetty. Except for the soundings carried forward from H-564 (1856), in the vicinity of Pt. Loma, to fill a gap on the present work, these surveys should not be used for future charting purposes.

e. H-2185 (1893-4).

This survey covers the area around Pt. Loma and the channel to Ballast Pt. and is in general agreement in areas away from the influence of the dredged channel.

(1) A 20 foot sounding (charted) in latitude 32° 39.5', longitude 117° 14.37', falls in greater depths on the new survey. An examination of the original records shows that the 20 and several adjacent soundings on the line were plotted erroneously. In its revised position the 20 falls near a 25 on the present survey and because of the irregular nature of the bottom in this general vicinity it has been carried forward to H-5666 (1934).

(2) The following shoal soundings fall among deeper soundings of the present survey where surrounding depths are in good agreement. These soundings are being carried forward as in each case there is an indication of a shoaling on the present survey on a hard bottom in a kelp area.

29 foot sounding (uncharted) in latitude 32° 39.32', longitude 117° 14.65'
28 foot sounding (charted) in latitude 32° 39.3', longitude 117° 14.35'.

(3) A 21 foot sounding on H-2185 (1893-4) in latitude 32° 39.72', longitude 117° 14.03' (not charted since (1922) is probably erroneously located on that survey. The original record notes that the party was "Examining shoalest spots on bar". By reversing the angles, the position (2c blue) is placed on the bar and is in harmony with other soundings of the survey as well as with the later surveys. The 21 has not been retained.

(4) A 20 foot sounding, latitude 32° 39.8', longitude 117° 15.87' (not charted), falls among depths of the present survey of which 23 feet is the shoalest. This sounding is nearly in the same location as the 20 listed under par. 6j - 2, and has been retained. The present survey covers this area with sounding lines fairly close together and shows no indication of shoaling.

(5) The 26 foot sounding in latitude 32° 39.59', longitude 117° 15' (uncharted) has been disproved by a later survey, H-4810 (1928), which made a special investigation of the spot and found 45 feet the shoalest depth. The present survey shows a 46 foot sounding in this area which corroborates the depth found in 1928.

The 26 foot sounding is undoubtedly erroneous and as noted by the Chief of Party in the original records the "lead very probably had lodged in the kelp".

The detached 30 foot spot (charted) latitude 32° 39.63', longitude 117° 14.8' is the first sounding on a line and in view of later surveys as well as surrounding depths on H-2185 (1893-4), was probably recorded 1 fathom too shoal. Both the 1928 survey and the 1934 survey cover this spot without any indication of shoaling. It should not be retained in future charting.

f. H-2407 (1898-9).

This survey covers the channel entrance to Ballast Point and extends east of the jetty approximately a mile.

The agreement of the depths east of the jetty is generally good to the 12 foot curve but in most places beyond the 12 foot curve the present survey shows that a slight shoaling has occurred.

In other portions of the survey a comparison shows a complete change in the bottom configuration as well as changes in depths, evidently caused by the construction of the jetty and dredging in the channel.

(1) Several 18 foot and one 19 foot shoal spots between latitude 32° 40' and 32° 40.2', longitude 117° 12.7' and 117° 12.9' (charted) fall among slightly greater depths on the present survey. No indication of these shoal spots are in evidence on the present survey and comparison shows that there has been a levelling of the bottom here. These soundings should not be used for charting.

(2) The 19 foot soundings (charted) in the vicinity of latitude 32° 39.8', longitude 117° 13.8' fall in depths of 21 to 23 feet on the present survey. An examination of the surrounding depths indicates that a deepening has occurred here. The least depth developed on the present survey in this vicinity is 20 feet. The 19 foot sounding should be disregarded in future charting.

(3) A number of rocks (charted as bare rocks) on the east side of Pt. Loma originate with T-2370 (1898-99). Some of them were located by sextant cuts on the present survey as rocks awash. (See D. R. page 3a). As there is no direct evidence that the rocks on T-2370 (1898-99) were definitely located by cuts the representation on H-5666(1934) and the similar representation on air photo compilation (T-5373) should be accepted for future charting purposes.

g. H-2561 (1902), H-2561a (1902).

These surveys cover the San Diego Bar, and the channel at the entrance. The channel dredging operations and the extension to seaward of the jetty since the survey have materially changed the configuration of the bottom and depths in this vicinity and the surveys should be superseded by H-5666 (1934) for future charting purposes.

h. H-3918 (1916-17).

This survey covers the area between Pt. Loma and the jetty from the channel entrance to Ballast Point with only a few sounding lines.

The agreement with the present survey is good, except in the channel which shows much deeper soundings due to dredging operations.

This survey adds nothing to the value of the present survey and it should not be used for future charting purposes.

i. H-4258 (1922-23).

This survey overlaps the present survey in the outer channel entrance and adjacent areas with widely spaced soundings.

The agreement in depth is generally good, except in the channel in latitude 32° 39.2', where the depths have been increased through subsequent dredging operations.

The present survey adequately developed the area common to the two surveys and the old survey should not be used for charting this area.

j. H-4268 (1922-23).

This survey covers the channel entrance off Pt. Loma to Ballast Pt. and in general is in good agreement, except in the areas immediately adjacent to the channel where a general deepening has occurred.

(1) The 10 foot shoal sounding (charted) in latitude 32° 40.52', longitude 117° 13.4', was found to be erroneous. The records show this sounding to be 19 feet which is in agreement with the present survey. The 10 should be expunged from the chart.

(2) The following are charted soundings that fall in deeper depths on the present survey. In each case the bottom is sandy and shows no indication of a shoaling on the present survey. The spots have apparently become levelled-off and

the soundings should not be used in future charting.

6 foot sounding in latitude 32° 40.82', longitude 117° 13.95'
9 foot sounding in latitude 32° 40.55, longitude 117°13.9'.

(3) The 9 foot sounding (charted) in latitude 32° 40.62', longitude 117° 13.95', falls in a blank area between a 10 and 14 foot sounding on the present survey. Since the surrounding depths are in good agreement on the two surveys, the 9 has been carried forward.

(4) The 16 foot sounding (charted) in latitude 32° 40.25', longitude 117° 13.35', falls close to the jetty on a 23 foot sounding on the present survey. The surrounding depths show no indication of a shoaling and evidently this sandy spot has been levelled-off. The sounding has not been retained.

(5) Two 20 foot soundings (charted) in latitude 32° 39.8', longitude 117° 13.88', latitude 32° 39.68', longitude 117° 13.8', fall among depths of from 23 to 25 feet on the present survey and the surrounding depths of which are in good agreement with the present survey.

The soundings are being carried forward.

Because of the general good agreement between this survey and the new survey at the inshore limits in the vicinity of Point Loma, a number of soundings from H-4268 (1922-23) have been carried forward to H-5666 (1934) in this vicinity in order to fill a gap on the latter survey.

k. H-4810 (1928).

This survey is an investigation of a reported shoal spot in latitude 32° 39.6', longitude 117° 14.9', and shows a very good agreement with the present survey.

There is no outstanding sounding or feature to be carried forward as the present survey has developed this area very satisfactorily.

7. Comparison with Charts Nos. 5105, 5107.

Within the area of the present survey the charts are based on surveys discussed in the foregoing paragraphs and a number of U. S. Engineers blueprints covering the San Diego Entrance Channel.

a. Hydrography.

The following charted soundings originate with U. S. Engineers surveys:

(1) 14 foot sounding in latitude 32° 40.20', longitude 117° 13.85', Bp. 23137 (1930).

(2) 17 foot sounding in latitude 32° 40.07', longitude 117° 13.80', Bp. 23137 (1930).

(3) 18 foot sounding in latitude 32° 39.95', longitude 117° 13.80', Bp. 23137 (1930).

(4) 20 foot sounding in latitude 32° 39.60', longitude 117° 13.75', Bp. 21381 (1927).

These soundings are not covered by later engineers surveys and are not definitely disproved by the present survey. In view of the lumpy nature of the bottom in this vicinity, these soundings should be retained on the charts until more definitely disproved.

b. Aids to Navigation.

The buoys were located in substantially the same positions as charted with the following exceptions:

(1) Buoy Bell "1 S D" which marks the west entrance to the channel is charted approximately 400 meters west of the position given.

(2) Red buoy No. "2" near the entrance to the channel was located by the present field party on November 16, 1934, approximately 100 meters east of its charted position, the latter originating with Notice to Mariners of April 3, 1934. The buoy which is charted as marking the eastern edge of the 40 foot dredged channel is in reality inside the 30 foot depth curve and might prove a menace to deep draft vessels running close to this buoy. The differences between the present locations of the above buoys and the charted locations have been referred to the Lighthouse Bureau.

(3) Two charted torpedo range buoys which would fall on the southern limit of the sheet were not plotted nor were they mentioned in the Descriptive Report, as to whether or not they were in place at the time of the survey. This matter was taken up with the field party in connection with the review of H-5678 (1934). The field party reported (see letter attached to review of H-5678 (1934) that the buoys were not planted at the time of the survey. The San Diego Naval Base has been requested to advise as to the future status of these buoys.

8. Field Plotting.

Protracting of positions and plotting of soundings was well done.

9. Additional Field Work Recommended.

No additional work is required.

10. Superseding Old Surveys.

Within the area covered, the present survey, with the indicated additions from previous surveys, supersedes the following surveys for charting purposes:

H-268	(1851)	in part.
H-289	(1856)	" "
H-564	(1858)	" "
H-566	(1856)	" "
H-1420	(1878)	" "
H-2185	(1893-94)	" "
H-2407	(1898-99)	" "
H-2561	(1902)	entirely.
H-2561a	(1902)	"
H-3918	(1916-17)	in part.
H-4258	(1922-23)	" "
H-4268	(1922-23)	" "
H-4810	(1928)	" "

11. Reviewed by - G. Risegari and R. J. Christman, June 17, 1935.

Inspected by - A. L. Shalowitz.

Examined and approved:

C. K. Green, Chief, Section of Field Records.

Chief, Section of Field Work.

Chief, Division of Charts.

Chief, Division of H. & T.

VERIFICATION REPORT

To Accompany

HYDROGRAPHIC SHEET NO. 18

CALIFORNIA COAST

Hydrographic Sheet No. 18, and accompanying records, have been inspected and approved by me. The field work, blue letter days was done under the direct supervision of Lieut. (j.g.) R.J.Sipe, red letter days was done by K. McBean, Surveyor, under the occasional supervision of Lieut. (j.g.) John C. Mathisson.

The office work was accomplished by civilian draftsmen under the supervision of Lieut. Mathisson.

No additional work is considered necessary.

Robert W. Knox

Robert W. Knox
H. & G.Engineer
Chief of Party

Applied to chart 5107 H.M.A. Jan. 1936 25 Jan 15, 1936
" " " 5105 H.M.A. Feb "
" " " 5101 - May 26, 1936 L.M.Z.