

5171

5171

Form 504

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

R. S. Patton, *Director*

U. S. COAST & GEODETIC SURVEY
LIBRARY AND ARCHIVES

APR 14 1932

State: California

Acc. No. _____

DESCRIPTIVE REPORT

Topographic } Sheet No. **5171**
Hydrographic } Field #42

LOCALITY

Northern Coast

Duncans Lndg., to Black Pt.

1931-32

CHIEF OF PARTY

E. L. Peacock

GOVERNMENT PRINTING OFFICE

UP

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

REG. NO. 5171

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. 42

REGISTER NO. **5171**

State California

General locality ~~Bodega Head to Stewart Point~~ Northern Coast

Locality Duncans Lndg. to Black Pt.

Scale 1:40,000 Date of survey Nov. 19, 1931 to Jan. 19 6, 1932.

Vessel GUIDE

Chief of Party K.T.A. Fred. L. Peacock

Surveyed by K. T. Adams, Fred. L. Peacock

Protracted by A. Newton Stewart

Soundings penciled by A. Newton Stewart

Soundings in fathoms ~~feet~~

Plane of reference M.L.L.W.

Subdivision of wire dragged areas by

Inked by J. D. Torrey

Verified by J. D. T.

Instructions dated September 29, 1931.

Remarks:

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET FIELD NO. 42

COAST OF CALIFORNIA

U.S.C. & G.S.S. GUIDE

1931 - 1932

INSTRUCTIONS:

Instructions for the hydrography on this sheet are dated September 29, 1931. ✓

CHARACTER OF WORK:

The hydrography on this sheet is all fixed position hydrography. The soundings were all obtained by the fathometer, red light method (direct). ✓

LIMITS:

The work on this sheet comprises about 209 square statute miles of previously uncompleted area extending northward from Latitude $38^{\circ} 20'$ N., in the vicinity of Bodega Head. It joins hydrographic sheet field No. 41 on the southeast, and it overlaps the inshore fixed position hydrography executed by the chartered launch party of Lieutenant (jg) L. C. Johnson during the seasons 1930 and 1931, on the east. On the west and north it overlaps fathometer hydrography of the Ship DISCOVERER executed in 1929, Sheet Registry Nos. 4988 and 4987. ✓

DATES OF SURVEY:

Hydrography on this sheet began on November 19, 1931, and continued during such weather as permitted the necessary seeing of signals, to completion on January 6, 1932.

The hydrography on Sheet Field No. 41 was executed concurrently with this sheet.

On November 30, 1931, the command of the Ship GUIDE and the supervision of this work was transferred from Lieutenant-Commander K. T. Adams to Lieutenant-Commander Fred. L. Peacock. Each of these two chiefs of party exercised close supervision of the portions of the work executed during the respective times they were chiefs of party.

CONTROL:

The control for the hydrography on this sheet consisted of existing triangulation stations and topographically located signals as per list appended to this report. The topographic signals had been located by the party of Lieutenant (jg) L. C. Johnson, and the positions were obtained from the Washington office.

TIDE REDUCERS:

Soundings obtained prior to December 13, 1931, were reduced from the records obtained from a portable automatic gauge in operation at Fort Ross Cove.

On December 13th, this tide gauge installation was wrecked by a storm.

Under date of December 17th, the Washington office telegraphically authorized the use of modified San Francisco Tide Station tides for the reduction of soundings made subsequent to December 13th. Accordingly all soundings subsequent to December 13th, have been reduced by the tidal records obtained from the San Francisco Tide Station modified by the difference in time and range of tide at the two stations.

APPARATUS CORRECTION:

The apparatus correction, consisting of the constant fathometer correction and the velocity of sound correction for the density, temperature, and depths of the water sounded, was obtained by consideration of 53 comparative soundings with wire, 47 surface temperatures, 3 intermediate temperatures, 48 bottom temperatures, and 6 salinity observations, all obtained in the area of Sheets Field Nos. 41 and 42 during the progress of the hydrography.

The apparatus correction proved to be less than 1.7 feet for all depths up to 68.5 fms. As the depth unit used in recording the soundings on this sheet was $\frac{1}{2}$ fathom, the effective apparatus correction was applied only in depths of 68.5 fms. and greater, the maximum depth recorded being 72 fms.

All soundings to which this correction was applied fall between positions 63 to 73, A-day, and 68 to 75, B-day.

A detailed report of the study of the velocity and constant fathometer correction for this area has been submitted.

Registering Sheave No. 204-H was used in obtaining the comparative soundings with wire. This sheave has no correction.

BOTTOM CHARACTERISTICS:

Thirteen bottom characteristics were obtained on this sheet. These are distributed over the whole area but not as uniformly as might be wished. It is deemed however, that, together with those obtained previously in this area, they will prove adequate.

DANGERS:

The least sounding obtained on this sheet is 16 fathoms in the overlap with Lieutenant (jg) Johnson's work. In general the slopes are very easy throughout the entire area. There are a number of localities where the bottom is very flat for considerable distances. Apparently no dangers exist until inshore of the junction with Lieutenant (jg) Johnson's work.

In accordance with penciled notes on the photostat of sheet No. 5097, fathometer lines were run across the two shoals developed by Lieutenant (jg) Johnson near the junction with the GUIDE hydrography. It was not practicable to thoroughly redevelop these shoals with the GUIDE. The results obtained indicate that the shoalest soundings obtained by Lieutenant (jg) Johnson near deep water are on humps of small extent. The fathometer lines over these shoals were run at greatly reduced speed and the fathometer profile of the lines was carefully observed. It will be noted that the shoalest depths obtained by Lieutenant (jg) Johnson close to these lines were missed and therefore must be small. It will also be noted that the fathometer lines in general corroborate the soundings obtained by Lieutenant (jg) Johnson.

CHARTED 26 FATHOM SOUNDING:

The area in the vicinity of the charted 26-fathom spot, 10 miles northwestward from Bodega, was thoroughly developed and the existence of such a lump disproved.

Call 101-1932

DISCREPANCIES:

Positions 12C to 20C:

The soundings on this portion of sounding line were apparently in error. The officer at the fathometer was undoubtedly reading a stray which has been quite persistent in the vicinity of 36 fathoms on the fathometer. The area was resounded, positions 48-K to 61-K, and the erroneous soundings on C-day rejected in favor of those on K-day.

Positions 1-H to 3-H

Positions 67-H to 69-H

Positions 64-K to 73-K:

The soundings between these positions are from 1 to 2 fathoms shoaler than adjacent soundings at crossings. This has probably resulted from an accumulation of error in the same direction from reading the soundings in half fathoms and entering tidal reducers to half fathoms.

Positions 103-K to 105-K:

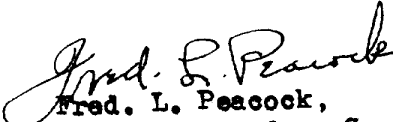
In Latitude $38^{\circ} 25'$ N and Longitude $123^{\circ} 16'$ W. a crossing of one fathom in an area where the bottom is very flat makes the exact position of the fifty-fathom curve a little doubtful. The curve in this area is in all probability very regular. ✓

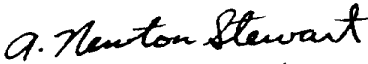
A second crossing differing by one fathom near here gives some indication that the recorded depths between the above positions may have been read by a half fathom too shoal.

GENERAL:

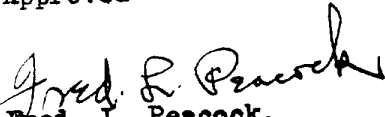
A few other instances in which lines crossed with a discrepancy of one fathom were noted. This amount of discrepancy is always possible without error in position or sounding in connection with the depth unit used. The majority of crossings are exact.

Respectfully submitted,


Fred. L. Peacock,
Lieutenant-Commander, C. & G.S.


A. Newton Stewart,
Lieutenant (jg), C. & G.S.

Respectfully forwarded,
Approved:

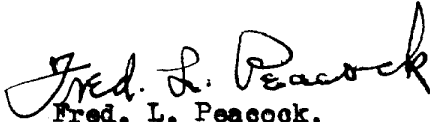

Fred. L. Peacock,
Chief of Party from December 1, 1931
U.S.C. & G.S.S. GUIDE.

STATEMENT
TO ACCOMPANY
HYDROGRAPHIC SHEET FIELD NO. 42
COAST OF CALIFORNIA
U.S.C. & G.S.S., GUIDE
1931 - 1932

The field work subsequent to November 30, 1931, was carefully supervised by the undersigned.

The smooth plotting has been accomplished under his general supervision.

The completed smooth sheet has been inspected and is approved.


Fred. L. Peacock,
Chief of Party, C. & G. Survey,
Commanding Ship GUIDE.

Oakland, California
March 31, 1932.

STATISTICS

to accompany

HYDROGRAPHIC SHEET FIELD NO. 42

DATE 1931-2	DAY	STAT.MIS. SND'G LINE	NO. OF POS.	SOUNDINGS	
				ECHO (RL)	WIRE
11-19	A	63.4	95	321	2
11-24	B	65.0	97	317	2
12-10	C	82.3	118	501	2
12-11	D	53.8	78	280	2
12-16	E	108.9	156	544	4
12-17	F	17.2	27	94	-
1-3	G	49.1	75	380	-
1-4	H	63.7	100	516	1
1-5	J	65.4	120	655	1
1-6	K	100.6	159	658	3
TOTALS	--	669.4	1025	4266	17

AREA -- In Square Statute Miles 209.0

LIST OF SIGNALS

To Accompany

HYDROGRAPHIC FIELD SHEET NO. 42

TRIANGULATION

KNIPP	1878
HORSESHOE POINT	1906
STOCKHOFF (2)	1906
TIMBER COVE	1891
PINNACLE ROCK (Out)	1906
CHAPPARAL	1906
DRY CREEK	1906
PEAKED HILL	1906
LARGE WHITE ROCK S. OF PEAKED HILL (Gull)	1929
LONE BARE TREE	1929
<u>BODEGA HILL</u>	1860
BLACK TANK	1930
BODEGA HEAD	1906
BODEGA	1906

TOPOGRAPHIC
(From L.C. Johnson, 1930)

HA
LEO
BEN
STY

Note: The underlined portions of the names of the triangulation stations, or the names in parenthesis, were used as hydrographic names.

APR 27 1932

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
3 volumes of sounding records for

HYDROGRAPHIC SHEET 5171

Locality Duncan's Landing to Black Point, California Coast

Chief of Party: K. T. Adams and E. L. Peacock in 1931, 1932.

Plane of reference is mean lower low water, reading

3.6 ft. on tide staff at Fort Ross

7.0 ft. below B. M. 1

5.5 ft. above datum of tabulations at San Francisco (Presidio).

10.3 ft. below B.M. 173

Allowance made for time of tide on working grounds -0.65 hr. earlier than
at San Francisco.

Condition of records satisfactory except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered in wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks.

Paul P. Whitney
Chief, Division of Tides and Currents.

Section of Field Records.
Report on Hydrographic Sheet No. 5171
California; Northern Coast.

Duncan Landing to Black Point.

Surveyed in 1932.

Instructions dated September 29, 1931 (Guide)

Chief of Party H. T. Adams and F. L. Peacock.

Surveyed by H. T. Adams and F. L. Peacock.

Protracted and soundings plotted by A. N. Stewart.

Verified and inked by J. D. Torrey.

1. The records conform to the requirements of the General Instructions.
2. The plan and Character of development conform to the requirements of the General Instructions.
3. The plan and extent of development satisfy the specific instructions.
4. The soundred line crossings are adequate.
5. The information is sufficient for drawing the depth curves.
6. The cross line between Lat. $38^{\circ}20'$ and $38^{\circ}22'$ appear in error of about two fathoms and has not been inked.
7. The junction with the general sheets is satisfactory except that a 27 and a 29 fathoms sounding appear on sheet H-4988 just of Duncan Landing which appear to be in error as the adjacent soundings are from four to six fathoms

shoulder.

8. A 39 fathom detached sounding is shown on Sheet H-4987 on Lat. $38^{\circ}38'$ and between Longt. $23^{\circ}26' + 28'$ and $38^{\circ}38'$ and with adjacent soundings of 42 and 44 fathoms; This is evidently in error and should be investigated.

9. The additional development just South of Timber Cone does not credit or discredit the 18 fathom sounding shown on Sheet H-5997.

John D. Torrey
June 23, 1932

SECTION OF FIELD RECORDS

Review of Hydrographic Sheet No. 5171
Duncans Landing to Black Point, California.
Surveyed Nov. 1931 - Jan. 1932.
Instructions dated Sept. 29, 1931 (Guide)

Chief of Party - K. T. Adams, F. L. Peacock.
Surveyed by K. T. Adams, F. L. Peacock.
Protracted and soundings plotted by - A. N. Stewart.
Verified and inked by - J. D. Torrey.

Fathometer, fixed position.

1. The records were neatly kept and conform to the requirements of the Hydrographic Manual.
2. The plan and extent of development satisfy the specific instructions.
3. Soundings. The depths at line crossings are in good agreement, seldom exceeding a difference of 1 fathom, see Descriptive Report for special cases. Additional bottom characteristics have been added in red from H. 3224.
4. Depth curves. The 50 fathom and a part of the 20 fathom curves are shown on the sheet. The bottom is gently sloping and the curves are regular. The apparent irregularity of the 50 fathom curve in lat. $38^{\circ} - 18'$ where three sheets overlap is probably due to a slight variation in the fathometer readings although the differences in general are less than 1 fathom.
5. Junctions with contemporary survey sheets are generally satisfactory. Discrepancies were noted as follows: A sounding of 39 fathoms (lat. $38^{\circ}-38'$, long. $123^{\circ}-26'.5$) from H. 4987 falling between depth of 42 and 44 on this sheet was rejected, it being an unsupported sounding on the former survey. The examination off Fort Ross does not prove or disprove the existence of the 18 fathom spot shown on H. 5097. The general depths in the vicinity are corroborated by the fathometer survey.

Three soundings 29, 27 and 24 (lat. $38^{\circ}22'.8$ long. $123^{\circ}07'$) from H. 4988 were rejected. They were taken by fathometer at the end of a day's work and were probably misread by 5 fathoms (too deep). This is further corroborated by the adjoining sheet H. 5098.

A line of soundings, 47N to 49N (beginning lat. $38^{\circ}20'$ long. $138^{\circ}16'$) on H. 4988 appears to be 2 fathoms too deep as shown by a cross line and also subsequent surveys on sheet H. 5171. The line was omitted from H. 5171 and a note "Do not chart depths on this line" placed on H. 4988.

Sheet H. 4988 shows three soundings of 67 in lat. $38^{\circ}28'.7$ long. $123^{\circ}-25'.5$ with a crossing line of 70 and 71 explained as probable strays. This sheet H. 5171 has 69 on these three positions.

6. Comparisons.

The previous survey (H. 3224 of 1911, scale 1-200,000) was of a reconnaissance nature. The agreement in depth is good, the present survey showing

Report H. 5171.

deeper water, 1 to 3 fathoms, with a few exceptions outside the 50 fathom curve.

The existence of the 26 fathom spot of the earlier survey in lat. 38°-23' long. 123°-13' has been disproved and it has been expunged from the 1932 edition of Chart 5502 (chart letter 101 of 1932).

No dangers are shown on the chart in the area covered by this sheet.

7. Recommendation.

It is recommended that this sheet (H. 5171) supersede all previous surveys for charting purposes in the area covered by the sheet.

No further surveys are deemed necessary.

8. Reviewed by R. J. Christman - Sept. 21, 1932.

Memorandum by - A. L. Shalowitz

The irregularity in the 50 fathom curve at the southeastern end of the sheet is doubtless due to the flatness of the bottom and the units used for sounding, a difference of but one fathom in such areas causing an irregularity that would be otherwise eliminated were a closer unit used.

It is therefore recommended that in the compilation of the chart this portion of the curve be generalized.

Sheet inspected and recommendations approved by - A. L. Shalowitz.

Approved: A. M. Sobieralski. (*signed*).