41

4989

Diag. Cht. No. 5602-2

Form 504
Ed. June, 1928

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

State: CALIFORNIA

DESCRIPTIVE REPORT

~~*Topographic*~~
Hydrographic } *Sheet No.* 41 4989

LOCALITY

Mendocino

NORTHERN COAST OF CALIFORNIA

~~CAPE VIZCAINO~~ * MENDOCINO BAY

TO CAPE VIZCAINO

19 29

CHIEF OF PARTY

F. G. Engle, H. & G. En'r.
F. B. T. Siems, H. & G. Eng'r.

U. S. GOVERNMENT PRINTING OFFICE: 1928

4989

DESCRIPTIVE REPORT

to accompany

HYDROGRAPHIC SHEET NO. 41

Scale 1:40,000

U. S. C. & G. S. S. DISCOVERER F. B. T. SIEMS, H. & G. ENG'R.

Instructions dated March 25,

1 9 2 9

LIMITS: The limits of sheet 41 are those described in paragraph 21 of the instructions of March 25, 1929; i. e. from latitude 39° 42' south to latitude 39° 17' and from approximately the 70 fathom curve in longitude 123° 24' westward to about the 200 fathom curve in longitude 123° 59'. In addition there are 4 lines just westward of the launch work on the northern portion of the sheet, between the 20 and the 40 fathom curves.

CONTROL: All control was by visual fixes, the majority of the signals being 24 foot tripods built over recovered triangulation stations.

METHOD: Soundings were obtained by fathometer red light to as great a depth as possible--generally around 135 fathoms during the first part of the work and after the personnel became more experienced in the operation of the red light in the greater depths, to practically the limits of the sheet. Some difficulty was experienced in keeping the middle reed of the tachometer vibrating, but no corrections to depth were made in the records because repeated tests in the field failed to disclose any appreciable change in the sounding due to even abnormal variations in disc speed.

Vertical casts were taken at suitable spacings over the area to obtain comparison with fathometer, surface and bottom temperatures, bottom specimens and water samples for salinity determinations. All of the latter samples were shipped to the Scripps Institute for analysis. The mean salinity for the season was 33.5. This value was used in the reduction of soundings for all sheets.

The sheaves were tested before and after the season and the results entered on page 3 of volume 1. The corrections were all less than the 1% allowed in the Hydrographic Manual.

VELOCITY CORRECTIONS: A constant correction for the fathometer red light was applied in addition to the temperature correction. It was arrived at by tabulating comparative readings, applying the temperature corrections to the fathometer sounding and taking a mean of the differences. This correction was determined to be -0.6 fathoms. A list of corrections to red light soundings is included with this report. A table of velocity corrections to white light soundings is also included with the report.

SLOPE CORRECTIONS: Slope corrections were computed in a manner similar to that developed upon the GUIDE in 1927, except that corrections were determined from distances between depth curves rather than soundings. The curves were drawn as accurately as possible on the boat sheet and the corrections computed with the aid of a celluloid scale. Slope corrections of less than 1% were neglected.

FATHOMETER: The fathometer was read at 30 second intervals on the red light, and at one minute intervals on the white light.

CROSSINGS: In 76 crossings on the sheet for the fathometer red light, the average discrepancy is 0.6 fathoms, with a maximum of 4 fathoms.

SHOALS: A 39 fathom spot in latitude 39° 21.5', longitude 123° 53' was developed. There is a submarine valley of a marked nature extending from latitude 39° ~~54~~ 34', longitude 123° 58' south-southeast about three miles.

ANCHORAGES: There are no anchorages in the area covered by this sheet, and those along this section of the coast have been described in the reports of the adjacent launch sheets.

LANDMARKS: But one landmark of importance, other than those mentioned in the Coast Pilot, was noted--that of the two mill stacks at Fort Bragg. In clear weather these stacks can be seen for miles; in low lying haze the stacks are often visible when the landing and town are entirely shut out.

JUNCTIONS AND COMPARISONS WITH PREVIOUS SURVEYS: No difficulty was experienced in obtaining a satisfactory junction with previous work shown on sheets 1643a, 1586b and 1586a. The 70 fathom curve was transferred from these bromides to the boat sheet. The agreement between the old and new work was remarkably close. The same applied to the inshore lines run.

(see note following page)

Robert W. Knox

Robert W. Knox,
Jr. H. & G. Engr.

Approved and forwarded:

F. B. T. Siems

F. B. T. Siems,
H. & G. Engr.,
Commanding.

APPROVAL OF CHIEF OF PARTY

Sheet number 41 and accompanying records have been inspected and approved by me. The field work was not done under my supervision; the office work, at all times. No additional work is considered necessary.

F. B. T. Siems,
H. & G. Eng'r.,
Commanding.

Note: Referring to last sentence of paragraph one, of this report page, 1, a tracing scale 1/40,000 of soundings transferred from launch sheet 21, scale 1/20,000, was made and accompanies the smooth sheet. It appears that in some cases the fathometer did not pick up the shoals found by the launch party. Along regular bottom the agreement between the two surveys is satisfactory. (see notes E day in Sounding record)

TIDAL NOTE

Auto-portable tide gauge number 133 at Mendocino Bay, California, in latitude 39° 18', longitude 123° 48', was used to reduce the soundings on this sheet. The tabulations of highest and lowest tides observed have not been made.

STATISTICS, SHEET NO. 41

DATE 1929	LETTER	VOL.	POSITIONS	VC	SOUNDINGS FATH. R. L.	SOUNDINGS FATH. W. L.	TOTAL	MILES	VESSEL
May 4	A	1	82		332	47	379	48	Ship
5	B	1	140	4	810	74	888	92	"
8	C	1	34	1	252		253	22	"
8	C	2	103	2	578	51	631	81	"
8	D	2	38	3	280		283	26	"
10	E	2	85	-	612		612	55	"
June 2	F	2	36	-	268		268	26	"
20	G	3	36	1	308	10	319	36	"
July 12	H	3	71	5	356		361	31	"
		TOTALS	636	16	3796	182	3994	417	

SECTION OF FIELD RECORDS
REPORT ON SHEET No. 4989

CHIEF OF PARTY — F. B. T. Liems
DATE SURVEYED — May 5 - July 12, 1929.
SURVEYED BY F. C. Engle
PROTRACTED BY C. Le Ferer
SOUNDINGS PLOTTED BY P. L. Bernstein
VERIFIED & INKED BY Harold W. Murray

1. The records conform to the requirements of the General Instructions.
2. The sounding line crossings appear to be adequate. However, attention is called to two crossings which have a rapid change in depths in Lat. 39°34' and Long. 123°58'.
3. The usual depth curves can be completely drawn.
4. The field plotting was quite accurate up to the middle of "C" day. From then on considerable trouble was had in checking fixes and time intervals. A consistant error was present in the fixes which

may have been caused by changes in the paper.

5. The overlap in long. 123°49' which was transferred to H-4982 has a difference averaging from 1 to 2 fathoms.
6. The three small shoals in lat. 39°22' and long. 123°53' are well surveyed.
7. The work from 310 to 350 in lat 39°39' does not correspond with the last sheet through the smooth sheet has been checked and accepted.
8. A shoal sounding of 19 fathoms in lat. 39°19' and long. 123°49' was disregarded by the field in plotting as a portable error. Investigation with previous surveys proves the existence of a shoal in this area. On H-4984, two 12-fathom depths have been recorded in this area.
9. In lat. 39°41½' and long. 123°51', soundings of 34, 31, 35, 31 & 36 fathoms were taken. The 31 fathom depths were not plotted by the field although the record was not questioned.

Respectfully submitted Harold O. Murray
Sept. 25, 1930

CORRECTIONS TO RED LIGHT SOUNDINGS

SHEET 41

DEPTH	TEMP. CORR. FOR MAX. DEPTH	INITIAL CORRECTION	TOTAL CORRECTION	CORRECTION USED
fms	fms	fms	fms	fms
0 - 15	- 0.3	- 0.6	- 0.3	$-\frac{1}{2}$
16 - 45	0.8	0.6	- 0.2	0
46 - 75	1.3	0.6	0.7	$+\frac{1}{2}$
76 - 125	2.0	0.6	1.4	1
126 - 250	3.2	0.6	2.6	2
251 - 375	4.2	0.6	3.7	3
376 - 450	4.5	0.6	3.9	4

CORRECTIONS TO WHITE LIGHT SOUNDINGS

SHEET 41

DEPTH	CORRECTION
fms	fms
100	+ 2
200	3
340	4
440	5

CORRECTIONS TO RED LIGHT SOUNDINGS

SHEET 41

DEPTH	TEMP. CORR. FOR MAX. DEPTH	INITIAL CORRECTION	TOTAL CORRECTION	CORRECTION USED
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0 - 15	- 0.3	- 0.6	- 0.3	$-\frac{1}{3}$
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46 - 75	1.3	0.6	0.7	$+\frac{1}{3}$
76 - 125	2.0	0.6	1.4	1
126 - 250	3.2	0.6	2.6	3
251 - 375	4.2	0.6	3.7	3
376 - 450	4.5	0.6	5.9	4

CORRECTIONS TO WHITE LIGHT SOUNDINGS

SHEET 41

DEPTH	CORRECTION
fms	fms
100	+ 2
200	3
340	4
440	5

April 24, 1930

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in
volumes of sounding records for

HYDROGRAPHIC SHEET 4989

Locality: California (Usal to Mendocino Bay)

F. G. Engle, in 1929

Chief of Party:

Plane of reference is 1.8 ft. on tide staff at → mean lower low water, reading
ft. below B. M. Mendocino City

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.

L.P.D.

Acting Chief, Division of Tides and Currents.

IN REPLY ADDRESS THE DIRECTOR
U. S. COAST AND GEODETIC SURVEY
AND NOT THE SIGNER OF THIS LETTER

AND REFER TO No. 11-WSW

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON

March 10, 1931.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4989.

Mendocino Bay to Cape Vizcaino, Coast of California.

Surveyed in 1929

Instructions dated March 25, 1929. (Discoverer)

Supplemental Instructions dated May 1, 1929.

Fathometer Soundings

Chief of Party, F. B. T. Siemø, F. G. Engle

Surveyed by, F. G. Engle

Protracted by, C. Le Fever

Soundings plotted by P. L. Bernstein

Verified and inked by H. W. Murray

1. The records conform to the requirements.
2. The plan, character and extent of the survey satisfy the General and Specific Instructions.
3. The sounding line crossings are satisfactory with the exception of one crossing in the vicinity of lat. 39° 33.9', long. 124°57.7'.
4. The information is sufficient for drawing the usual depth curves. The 20 fathom curve north of lat. 39°32' was drawn to conform to the work on the inshore sheet, H. 4982.
5. The junction on the northwest with H. 4136 is satisfactory.

The junction on the west will be reported in the review of H. 4991, when that sheet is completed.

The junction on the south with H. 4990 is satisfactory.

The junction on the southwest with H. 4984 is satisfactory.

The junction of the lines in the vicinity of the 20 fathom curve with the inshore sheets H. 4982 is satisfactory, but the fathometer soundings are from 1 to 2 fathoms deeper.

The junction with H. 4983 is satisfactory.

The work was extended far enough within the limits of the old work shown on sheets H. 1643 a, H. 1586 b and H. 1586 a to obtain a very close agreement although it was noticed that the fathometer soundings were consistently a trifle deeper. More development in the vicinity of lat. 39°24', long. 123°54' would have been desirable since shoaler depths are shown on H. 1586 b than the surrounding depths on the recent work. The soundings from H. 1586 b in this area should be retained.

6. The usual amount of field plotting was well done by the field party. The positions well off shore do not check very closely probably due partly to the weakness of some of the fixes and also to possible changes in the paper.

7. Character and scope of surveying - good.

In general the ground has been well covered and the results obtained appear to be accurate.

8. No additional work is recommended.

9. Reviewed by R. L. Johnston October 21, 1930.

Approved

A. M. Robinowski

Chief, Section of Field Records (CHARTS)

H. B. Borden

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

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. 4989

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

Number of positions on sheet	636
Number of positions checked	151
Number of positions revised	9
Number of soundings recorded	3994
Number of soundings revised	421
Number of signals erroneously plotted or transferred	.....

Date: Sept. 22, 1930

Cartographer: Harold W. Murray

Form 537
11—5812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4989

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. 41

REGISTER NO. 4989

State CALIFORNIA

General locality ~~NORTHERN COAST~~ Pt. Cabrillo ~~MENDOCINO~~

Locality ~~CAPE VISCAINO to~~ MENDOCINO BAY to CAPE VISCAINO

Scale 1:40,000 Date of survey May 5 to July 12, 1929

Vessel U. S. C. & G. S. S. DISCOVERER

Chief of Party F. B. T. SIEMS, H. & G. Eng'r.

Surveyed by F. G. ENGLE

Protracted by Curtis LeFever

Soundings penciled by P. L. Bernstein

Soundings in fathoms ~~feet~~

Plane of reference mean lower-low water

Subdivision of wire dragged areas by

Inked by

Verified by

Instructions dated March 25, 1929, 192

Remarks:

GPO