

4097

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

State: *California*

11-5613

DESCRIPTIVE REPORT.

Hyd. Sheet No. *4097*

LOCALITY:

Humboldt Bay.

St. Wenonah

1919

CHIEF OF PARTY:

Lukens, R. R.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. 4097

State California

General locality Humboldt Bay

Locality Fairhaven to Arcata
~~Upper part of Humboldt Bay~~

Chief of party R. R. Lukens

Surveyed by Party on Stmr. Wenonah

Date of survey October, November, 1919.

Scale 1:10000

Soundings not reduced

Plane of reference

Protracted by C. E. C. Soundings in pencil by

Inked by Verified by

Records accompanying sheet (check those forwarded):

1 Des. report, Tide books, Marigrams, 1 Boat sheets,

4 Sounding books, Wire-drag books, Photographs.

Data from other sources affecting sheet

Remarks:

Hydro. Sheet 4097.

9. Rating of the work:

Character and scope of the surveying - Good.

Field drafting (protracting only) - Excellent.

10. Remarks: Considering the difficulties under which this survey was made it is a creditable piece of work. The only serious criticism is the paucity of notes in the sounding records, particularly regarding the boat's course.
11. Reviewed by E. P. Ellis, September 20, 1920.
12. Two copies of this report to be sent to Hydrography and Topography Division.

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

September 22, 1920.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet 4097, Surveyed in 1919.

Chief of Party R. R. Lukens, Surveyed by R. R. Lukens, W. H. Kearns,
H. R. Bartlett.

Protracted by C. E. Christopherson. Soundings plotted by E. K. Ellis.

Verified and inked by J. D. Torrey.

1. The sounding records do not conform to the General Instructions in the following respects: No reference to wind, sea nor currents. Boat's course omitted throughout. Bottom characteristics should have been noted more often.
2. The use of zig-zag lines in developing the channels is contrary to the General Instructions. The failure to note the time of changing boat's course made it impossible to place the soundings on these zig-zag lines correctly.
3. The plan and extent of the development satisfy the specific instructions for the survey.
4. The sounding line crossings are good except in cases of the zig-zag lines.
5. The development is sufficient to completely draw the curves.
6. The sheet was sent in without soundings having been plotted - probably due to uncertainty of plane of reference. Position numbers and day letters were frequently omitted.
7. Except for adjusting zig-zag lines the field drafting was found by the office draftsman to be entirely adequate.
8. This survey shows that only 11 feet is available in the Arcata Channel, although the chart gives 14 feet. As this channel is very narrow it is possible that the maximum depth was not obtained, and that an additional examination should be made at this point.

ADDRESS THE SUPERINTENDENT
U. S. COAST AND GEODETIC SURVEY

AND REFER TO NO.

41-EMK

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

March 17, 1920.



Division of Hydrography and Topography:

Division of Charts: ✓

Tidal reductions are approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 4097

Humboldt Bay, California
R.R. Lukens in 1919

Plane of reference is
Mean lower low water, reading

3.0 ft. on tide staff at Knights Wharf.
3.2 ft. on tide staff at Arcata Wharf.

Condition of records, very satisfactory.

A handwritten signature in cursive script, appearing to read "E. R. Rude".

Chief, Section of Tides
and Currents.

Statistics sheet No. 3.

Date, 1919.	Letter	Volume.	Positions	Soundings	Miles, statute	Vessels
September 25	a	1	36	101	2.3	Clyde
October 1	b	2	76	265	6.3	"
" 3	c	2	121	422	9.5	"
" 4	d	2	34	140	1.3	Whaleboat
" 7	e	2	63	285	5.0	Clyde
" 8	f	3	88	485	5.4	"
" 14	g	3	109	660	9.6	"
" 15	h	3	94	499	8.4	"
" 15	h	4	31	158	2.5	"
" 16	j	4	129	597	11.7	"
" 25	k	4	85	422	9.5	"
Total			866	4034	71.5	

SURVEY METHODS The hydrography in the minor channels consists of zig-zag lines. In plotting the soundings due allowance must be made for the change in speed near the turn of the line at the edge of the mud flats. One of the channel lines in the Arcata channel does not cross with the cross lines. It is believed that this channel line should be rejected. I can give no reason except that the leadsman was not very reliable. This occurred while H.R. Bartlett was in charge of the CLYDE. Every effort was made to produce accurate work but it is impossible for one man to watch everything. For nearly all of this work a copper cored leadline was used. This line was constant in length, and was very sensitive to the feel of the bottom.

CHANGES By comparison with the published chart, it appears that the depths are nearly the same as at the last survey which was made in 1911 by the Corps of Engineers. The note on the chart that the Eureka Channel has shoaled to 16 feet does not seem to be justified.

THE WRECK OF THE ~~MILWAUKEE~~ USS MILWAUKEE lies on the outside beach opposite Samoa. The M.E. Mast was located by sextant angles. The wreck is about 75 meters from the M.W. line and is not quite high and dry at low water. At this point the shore line has built out slightly due to this big obstruction disturbing the inshore currents

R. R. Luimers.
R. R. LUIMERS
COMDG.

To the Superintendent,
Coast & Geodetic Survey,
Washington, D.C.

DESCRIPTIVE REPORT.

4097

To accompany

SHEET NO. 3.

Str. WENONAH

R. RLukens,
Chief of Party

1919.

LIMITS. This sheet covers Humboldt Bay from the Rolph Shipbuilding Plant, to the Arcata Long wharf. It embraces the Eureka water front and covers all the channels which are ever used by vessels

TIDE GAUGES For the reduction of soundings on this sheet tide staffs were erected and read at Knights Dock, Eureka water front and at the Arcata Long wharf. The staff at Eureka was connected with the old bench mark at the city hall which is given as 34.3 feet above MLLW. The results of our observations indicate that this may be in error. In order to get a better plane the automatic gauge was left in operation at the North Jetty, and there should now be 4 months records available in which to deduce a plane. Both the staffs referred to above were connected to the North Jetty staff by means of simultaneous observations.

CHARACTER OF BOTTOM The bottom of the entire sheet consists of mud and sand. In the channels it is very sticky; considerable effort being required to pull the lead free at times, while on the flats the bottom is harder. There is no rock at any place.

CONTROL The geographic positions were furnished by Mr. Latham. Additional signals were cut in by the plane table for use in hydrography. There are so many natural objects in this bay that a survey could be made without building signals.

PORT FACILITIES
The only channels used by ships are those leading to Eureka, Samoa, and Arcata. A great deal of lumber is shipped from Arcata, and Samoa, while the passenger vessels and local freighters load and discharge at Eureka. The water front at Eureka is in a very delapidated condition. All along the docks there are snags of old piling, so that it is necessary to use big logs as camels to keep the ships clear of these piles. The Eureka water front can not be used by vessels much over 1500 tons burden. The front at Samoa however would be capable of accommodating any ships that could get over the bar. In past years the Arcata channel has been slowly filling in, but this has been overcome by extending the wharf further and further out until it is now a mile and a half long.