

4216

AUG 2 - 1922

U. S. COAST AND GEODETIC SURVEY

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Form No.

Diag. Chart No. 5702-1

4216

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

State: *California*

11-5813

DESCRIPTIVE REPORT.

Hyd. - Sheet No. *4216*

LOCALITY:

Northern Coast -

Trinidad Head to

~~*Lat 41° 20'*~~

Redding Rock Light

1921-'22

CHIEF OF PARTY:

R. H. Luce

ridges and spurs. A very prominent scar being signal "Road" about $2\frac{1}{2}$ miles south of \triangle Sharp Point, and another being at the top of the rocky head about $2\frac{3}{4}$ miles north of \triangle Shart Point.

INSHORE DANGERS.

Along the shoreline from Big Lagoon to the northward there are numerous rocks and from the character of the bottom as revealed around the Turtle Rocks and Redding Rock it was not considered advisable to carry the soundings into less than 18 fathoms with the ship.

BOTTOM.

The soundings in this area reveal a very uniform character of the bottom, no dangers or indications being found. The bottom is sandy and slopes gradually and uniformly from the 18 to 70 fathom curves, however the slope at the southern end is steeper than at the northern end.

SURVEY METHODS.

All but a very few of the soundings were taken with trolley; however when the trolley was not in operation or the depth was too great, up and down casts were obtained with the ship stopped using a steam sounding machine with stranded wire, 35# lead, and registering sheave. Fixes were obtained by the usual sextant angles to shore objects.

TROLLEY.

In the operation of the trolley soundings were obtained with headway on the ship, the speed of the ship being about $4\frac{1}{2}$ knots gradually decreasing to about 3 knots in the deeper water; soundings up to about 45 fathoms were obtained with engine moving slowly; beyond that depth, the headway had to be checked somewhat in order to get up and down casts, this was accomplished by merely stopping the engine for an interval before taking the sounding and allowing the ship to coast; again starting the engine as soon as lead struck bottom.

The trolley gear was composed of an electric sounding machine for reeling in the lead; the wire used was a high tensile strength airplane strand, and the lead was made of a piece of pipe about $2\frac{1}{2}$ feet long filled with lead weighing about 30-35 lbs.; this shape of lead offered less resistance while travelling thru the water and thus made it possible to carry the trolley soundings into deeper water.

The depth was measured on an ordinary registering sheave which was fastened to a carriage threaded on the trolley wire. The sounding wire was lead from the reel over the registering sheave to the lead. The carriage also had the tripping device for letting go the lead. In getting soundings the carriage was reeled forward by an endless wire over a hand reel, the lead tripped, and the carriage reeled aft at a rate of speed such that the wire running out with the lead was maintained in a nearly vertical position, so that when the lead struck bottom the wire was up and down. In order to obtain soundings over various depths the tripping block was shifted along the trolley wire to drop the lead at any point up to the limit of the trolley.

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Sept. 20, 1922.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 4216

Locality: N.W. of Trinidad Head, Northern Coast of California.

Chief of Party: R. F. Luce in 1922.

Plane of reference is mean lower low water, reading
4.0 ft. on tide staff at North Jetty Landing, Humboldt Bay.

For reduction of soundings,
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. P day.
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 each 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.



Chief, Division of Tides and Currents.

Hydrographic Sheet No. 4216.

Trinidad Head to Redding Rock Light
"California".

The work of the Field Party covered by this sheet is exceptionally good. The area surveyed being well sounded and the crossings agree. The two adjoining sheets Nos 4185 + 4186 also agree closely. No additional work appears necessary.

This sheet was developed entirely by the office force

John D. Torrey
Dec 3 1922

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

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4216.

Surveyed in 1921.

Instructions dated March 23, 1921.

Chief of Party R. F. Luce.

Surveyed by party of Str. Lydonia.

Protracted and soundings plotted by F. M. Albert.

Verified and inked by J. D. Torrey.

1. The records conform to the requirements of the General Instructions except that bottom characteristics are ^{almost} entirely omitted.
2. The plan and character of development fulfill the requirements of the General Instructions.
3. The instructions direct that, in case the old work should be found defective then lines one-fourth mile apart should be run normal to the shore. As the new survey clearly indicates that the old one is erroneous the new work should have been carried in to the coast line in accordance with the instructions. There are indications that the defects on H. 1934 are lead-line errors confined mostly to the deeper soundings in the area covered by H. 4216, and that H. 1934 may be used for charting the inshore area.

Aside from the failure to detect the error in the old survey and to lay out the new work with that fact in mind, H. 4216 fully complies with the specific instructions.

4. The sounding line crossings are adequate and the information is sufficient for drawing the usual depth curves.
5. All the work of plotting was done in the office.

H. 4216 - 2.

6. The junctions with adjoining contemporary work are excellent.
7. No further work is required within the area covered by this sheet, except that in case it is deemed necessary to re-survey alongshore then split lines should be carried into the eastern edge of H. 4216 where the lines are one-half mile apart.
8. The character of the surveying is excellent, but its scope is subject to the criticism noted.
9. Reviewed by E. P. Ellis, January, 1925.

Approved
EP

Index number 774 a
re-examination of field
data of 1934 shows the
date of the observations
OK

DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

Washington, Dec. 11, 1927

Respectfully referred to *Jules Carante*
(CR)

The soundings on hydrographic sheet 4216 outside of the 20 fathom curve are, with practically no exceptions 1 to 3 fathoms deeper than those on hydrographic sheet 1934.

The difference appears to be a difference in the tidal planes rather than an actual deepening of the water.

As sheet 1934 is the only survey close inshore it is suggested that the tidal data be checked.