

# 4986

D. ag. Ckt. No. 5502-2

Form 504 Ed. June, 1928	
DEPARTMENT OF COMMERCE U. S. COAST AND GEODETIC SURVEY	
....., Director	
C. & G. SURVEY L. & A. APR 10 1930 Acc. No.	
State: CALIFORNIA	
DESCRIPTIVE REPORT	
<del>Topographic</del> Hydrographic	Sheet No. 25 4986
LOCALITY	
South of Pt. Arena	
<del>ARENA COVE TO BOWEN'S LANDING</del>	
Bowens Landing to Arena Cove	
<del>COAST OF NORTHERN CALIFORNIA</del>	
19..29	
CHIEF OF PARTY	
F. B. T. SIEMS	

U. S. GOVERNMENT PRINTING OFFICE: 1928

4986

DESCRIPTIVE REPORT  
To Accompany Hydrographic Sheet No. 25

SCALE 1:20,000

Coast of Northern California ----to---- Bourns Landing  
Point Arena Bowen's "

Instructions Dated March 25, 1929

STR. DISCOVERER

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

Surveyed by: R.W. Knox  
G.L. Anderson

Aug. 21 - Nov. 14, 1929.

LIMITS:

The survey on this sheet includes the inshore waters out to a junction with ship sheet no. 43, from latitude  $38^{\circ} 55.0'$  near Arena Cove to latitude  $38^{\circ} 46.5'$  near Bowen's Landing. The work on this sheet joins the work on sheet no. 24 on the north and the work on sheet no. 26 on the south. Only one days work on sheet no. 26 was accomplished during the season.

SURVEY METHODS:

Hand lead and hand sounding machine using 12 lb. and 18 lb. leads respectively were used. In general the 12 fathom curve was developed with the hand lead and the machine was used for greater depths. Stranded wire and a standard sheave, supported by a davit on the stern, were used with the hand sounding machine. A leadline made of phosphor bronze wire center tiller line was used. Frequent checking of the leadline disclosed small leadline corrections. The sheaves used were tested at the beginning of the season and once during the latter part of the season. No appreciable error was found.

The launch party based at Point Arena during the progress of the work from Arena Cove to Iverson Point. South from Iverson Point the ship was used as a base, using both launches during good weather.

Foggy weather prevented hydrography much of the time during the progress of the work on this sheet.

DANGERS AND SHOALS:

The shoreline on this sheet is rocky and precipitous. There are steep bluffs and many indentations forming a rugged shoreline.

There are no dangers to navigation outside of the 20 fathom curve, however, there are many shoals and rocks awash inside of the 20 fathom curve, the most important of which are given below:

There are many rocks awash and shoals extending out from the north shore of Arena Cove. A special effort was made to locate all rocks of danger to navigation in this vicinity. The location of these

rocks are recorded in the sounding record together with their relation to MLLW. There is also a shoal with rocks awash extending out from the point south of Arena Cove Dock. There is much growing kelp in Arena Cove, the approximate limit of which was inked on the boat sheet and recorded in the sounding record during the progress of the hydrography. There is a shoal in  $38^{\circ} 55' 810$  meters, longitude  $123^{\circ} 44' 240$  meters, with a least depth of 7.9 fathoms. A least depth of 7 fathoms was given on the bromide of sheet 1508. ✓

There is a rock awash at high water about 550 meters west by south of triangulation station High Bluff. ✓

There is an extensive foul area extending about 420 meters offshore from the point near triangulation station Moat. There are many sunken rocks and the entire area breaks during moderate swells. Thick kelp extends about 1100 meters to the 10 fathom curve in this area. A least depth of  $7-1/4$  fathoms was found in latitude  $38^{\circ} 52' 1050$  meters, longitude  $123^{\circ} 41' 410$  meters, near the 10 fathom curve. ✓ *5 1/2 fath at pos 32 of green*

Saunders Reef extends offshore in latitude  $38^{\circ} 51'$ . There are a number of rocks covered about 1 foot at MHW about 800 meters west by south of hydrographic signal 'Eng'. These rocks are awash at high water. The two sunken rocks shown about 1260 meters west of hydrographic signal 'Rif' were observed by the launch party, positions 151-e and 48-g. ✓ They have approximately two fathoms of water on each, they break during heavy swells. The rock near position 88-g may be the same rock as the one located by the topographic party about 700 meters west by south of hydrographic signal 'Eng'. The direction <sup>of the rock from the launch toward</sup> the buoy checks the topographic location, the estimated distance from the launch to the rock may be too short. The whistle buoy "2SR" is in 16 fathoms of water about 500 meters southwest of the foul area. *R.L.J.*

A shoal with a least depth of  $4-1/2$  fathoms is shown about 1000 meters south of Iversen Point. ✓

A shoal with a least depth of 10.7 fathoms is shown about 800 meters south of Sail Rock. ✓

A small area of kelp marks a shoal with a least depth of  $4-5/6$  fathoms about 1000 meters southwest of hydrographic signal 'An' in latitude  $38^{\circ} 49.3'$ . This shoal was not shown on bromide of sheet 1507-b. ✓

There are many rocks inshore between Havens Neck and Bowens Landing. The most important of these have been located and are plotted on the smooth sheet. ✓

A sunken rock with a least depth of  $1/2$  fathom is shown about 800 meters south by east of triangulation station Bourne. The bromide shows 2 or 3 small islets there. ✓

#### ANCHORAGES AND LANDINGS:

Arena Cove is the only landing of importance within the limits of this sheet. Lumber vessels with a draft of about 10 feet make regular stops at Arena Cove Dock. Many cross ties and other freight are shipped from this point as there are no railroads in the vicinity.

A detail survey of the waters near the dock is given on page 27, volume 1, S.M.S. The average depth near the outer end of the dock is 11 feet and this depth increases gradually offshore toward the bell buoy. The deepest channel to the dock is found from a point 300 meters north of the bell buoy straight for the dock. This channel is clear of kelp, although there are small areas of kelp on either side and over the entire cove. There are dangerous rocks extending from the points on the north

and south side of the cove. Vessels entering should make the bell buoy before heading for the dock.

The DISCOVERER anchored south of the bell buoy in 18 fathoms, sandy bottom, while working in this vicinity. The holding ground to the north of the bell buoy is very poor. There is very little protection from the north-west swell.

HAVENS ANCHORAGE AND BOWENS LANDING:

There is no landing in this vicinity in use at the present time. There is moderate protection for small boats except during heavy swells, when there is no protection, breakers extending over the entire inshore area. During a strong northerly wind and choppy sea, moderate protection is afforded for vessels anchoring in Anchor Bay in latitude  $38^{\circ} 47.7'$ . The DISCOVERER anchored in this location while working in this vicinity, except during heavy westerly swells when the ship could not anchor safely.

BOTTOM CHARACTERISTICS:

The vicinity of the shoreline is rocky with many rocks awash. In general, the bottom is sandy except in the vicinity of the shore line.

An area of kelp extends almost the entire length of the sheet. The bottom is rocky and usually somewhat shoaler in the kelp areas. The approximate limit of the kelp is shown on the boat sheet.

TIDES:

Tides at Arena Cove were used for the reduction of the soundings on this sheet. A few days when the record at Arena Cove was incomplete, the tide at San Francisco was used by applying a time correction of 6 tenths of an hour (later at San Francisco).

Respectfully submitted,

*George L. Anderson*  
George L. Anderson  
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 25 and accompanying records have been inspected and approved by me. Both the field work and office work were done under my supervision. A general wire drag survey is not considered necessary, as the bottom in the vicinity of the 20 fathom curve seems to be rather regular. Wire drag examinations of certain shoal areas, particularly the large shoal areas of 8 to 15 fathoms about one mile westward of Arena Cove are recommended.



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

STATISTICS

Date, 1929	Letter (Green)	Vol.	Pos.	Soundings	Miles St. sdg. line	Vessel
Aug. 21	a	1	97	114	8.5	S.M.S./
Sept. 9	b	1	64	256	7.1	S.M.S.
" 10	c	1	68	164	5.0	S.M.S.
" 24	d	1	108	204	14.5	S.M.S.
" 26	e	1 & 2	153	465	26.3	S.M.S.
" 27	f	2	74	107	5.8	S.M.S.
Oct. 4	g	2	101	234	12.5	S.M.S.
" 5	h	2	135	291	19.2	S.M.S.
" 30	j	2 & 3	179	391	17.8	S.M.S.
" 31	k	3	19	38	3.5	P.M.S.
Nov. 13	l	3	140	301	20.9	P.M.S.
" 14	m	3	31	81	2.8	P.M.S.
	(Red)					
Sept. 8	a	1	139	436	21.6	P.M.S.
" 12	b	1	35	41	1.7	P.M.S.
" 27	c	2	43	160	5.4	P.M.S.
Oct. 4	d	1	40	162	13.9	Ship
" 5	e	1	194	440	13.1	S.M.S.
" 18	f	2	155	317	20.0	S.M.S.

Section of Field Records.

April 22, 1930.

ECM

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in  
5 volumes of sounding records for


HYDROGRAPHIC SHEET 4986

Locality: California (Vicinity of Point Arena)

Chief of Party: F. B. T. Siems, in 1929  
Plane of reference is mean lower low water, reading  
0.0 ft. on tide staff at Point Arena  
ft. below B. M.

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.

  
Chief, Division of Tides and Currents.

Section of Field Records.  
Report on Hydrographic Sheet No. 4986.  
Bowers Landings to Arena Cove, California.

Surveyed in 1929.  
Instructions dated March 25, 1929 (Discoverer)

Chief of Party. F. T. B. Siems.  
Surveyed by P. W. Knox and G. L. Anderson.  
Protracted and soundings plotted by J. R. Rubottom.  
Verified and inked by J. D. Torrey.

1. The records conform to the requirements of the General instructions, except that the Note on page 28, Vol. 2 should have been in Vol. 1.
2. Page 16 opposite the soundings to which it refers.
2. The plan and character of development conforms to the requirements of the General Instructions.
3. The plan and extent of development satisfy the specific instructions.
4. Sounding line crossings are adequate.
5. The information is sufficient for drawing the depth curves.
6. The field protracting and plotting is satisfactory.
7. A note on page 33 Vol. 2 of the records states that the 2 and  $5\frac{3}{4}$  fathom soundings on "A" day are incorrect but as nothing



appears in the records or the adjacent soundings to disapprove the 2 fathom sounding it is retained. The  $5\frac{3}{4}$  sounding cannot be fully identified but probably is the  $5\frac{1}{2}$  fathom sounding on page 16 Vol 1 position 91-92 A. There is nothing to disapprove this sounding and it is retained.

8. The junction with sheet H-4985 is satisfactory.

9. The character of the surveying is excellent, all dangers appear to be well developed and further surveying is not required.

John D. Turrey.

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

AND REFER TO NO. 81-DRM

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

SECTION OF FIELD RECORDS

Review of Hydrographic Sheet No. 4986

Coast of Northern California

Surveyed in 1929

Hand lead and machine soundings

Instructions dated March 25, 1929.

Chief of Party, F. B. T. Siems.

Surveyed by R. W. Knox, G. L. Anderson

Protracted and plotted by I. R. Rubottom

Verified and inked by J. D. Torrey

1. The records conform to the requirements.
2. The plan, character and extent of the survey satisfy the general and specific instructions.
3. In general the sounding line crossings are satisfactory for an area of such irregularity.

A 2 fathom sounding at pos. 96 a (red) in lat.  $38^{\circ} 52'.7$ , long.  $123^{\circ} 41'.25$  and a  $5 \frac{4}{6}$  fathom sounding at pos. 32 a (green) in lat.  $38^{\circ} 52'.55$ , long.  $123^{\circ} 41'.3$  appear doubtful. The field party implies that these soundings are incorrect as a subsequent search failed to confirm them, but as this locality is so broken it was decided to retain these soundings.

4. The information is sufficient for drawing the usual depth curves except some of the shoaler curves close inshore.
5. The junction on the north with H. 4985 is satisfactory.

The offshore junction with H. 4987 is satisfactory and the soundings agree well.

The survey south of this sheet has not yet been completed.

6. Comparison with previous surveys.

The old hydrographic surveys of 1881, H. 1508 and H. 1507b agree only fairly well with the new work. Probably no two surveys of this area would give exactly the same results. It is believed that the recent work on this sheet, H. 4986, should supersede the old work, at least to some extent, although it is not intended that any shoals, shown on the old sheets, which have been missed by the later work, should be discarded. The worst discrepancy occurs in the vicinity of lat.  $38^{\circ} 48'$ , long.  $123^{\circ} 35'$ , where the new work shows no indication of several shoal soundings shown on H. 1507b. The most critical soundings from the old surveys have been added to this sheet in green.

The numerous rocks as shown on the old topographic surveys, T. 1228, T. 1535b and T. 1535a, generally agree fairly well with the rocks as located on the recent topographic sheets T. 4504, T. 4505 and T. 4506, with the following exceptions:

A bare and sunken rock shown on T. 1535b in lat.  $38^{\circ} 49'.6$ , long.  $123^{\circ} 37'$ . Neither of these ~~xxxx~~ are shown on the recent sheets, but the sounding line pos. 17c to pos. 18c passed close to the position of the bare rock and would hardly have missed it if a bare rock existed. A 2 fathom sounding shown in this position on H. 1507 b was added to the sheet and the bare rock omitted. The sunken rock was added.

Three sunken rock symbols and kelp which may be only intended for kelp patches, shown on T. 1535b in lat.  $38^{\circ} 49'$ , long.  $123^{\circ} 36'.5$  are not shown on the new work. Although these rocks are doubtful, they have been added to the sheet as they fall in a broken and rocky area.

Three sunken rocks and a small bare rock shown on T. 1535a in the vicinity of lat.  $38^{\circ} 48'$ , long.  $123^{\circ} 35'$  are not shown on the new work. The two sunken rocks just north of lat.  $38^{\circ} 48'$  and west of long.  $123^{\circ} 35'$  were marked "not verified" on T. 4506 and have been omitted, but the sunken rock and small bare rock just north of lat.  $38^{\circ} 48'$  and east of long.  $123^{\circ} 35'$  were not mentioned. While these two rocks may not exist, it is impossible to decide this in the office. In order to be on the safe side these two rocks were added to the sheet but they should be referred to the field party.

A bare and sunken rock shown on T. 1535a farther southwest than the rock awash located on this sheet southwest of Fish Rocks, in about lat.  $38^{\circ} 47'.9$ , long.  $123^{\circ} 35'.6$ , which were marked "not verified" on T. 4506. These rocks were also searched for by the hydrographic party and were not found, although soundings were taken at approximately low water. Their omission from the chart is recommended.

A sunken rock shown on T. 1535a in about lat.  $38^{\circ} 47'.4$ , long.  $123^{\circ} 33'.95$  which was marked "not verified" on T. 4506. While this was not found by the topographer, Kelp was seen and he may have been unable to see the rock. As no hydrographic examination was made, the rock has been added as well as a few other rocks farther inshore.

A small bare rock shown on T. 1535a in about lat.  $38^{\circ} 47'.03$ , long.  $123^{\circ} 33'.63$  not shown on the new work. There is evidence that the old topographer has shown many rocks as dry rocks on the old sheets which were found to be rocks awash or even sunken rocks. This rock would hardly have been missed by the new topographic survey if above water, but as kelp is shown here and the area is irregular and not covered by soundings, a sunken rock symbol has been placed ~~xxxx~~ here.

Several bare rocks are shown on H. 1507b which do not appear on the old contemporary topographic surveys. A search of the records of H. 1507b fails to show any mention being made of these rocks. As the new topographic and hydrographic surveys do not show them either, their existence seems doubtful. The only explanation which can be offered as to how these rocks got on H. 1507b is as follows. It is noted that the topographic surveys were made in 1880 but were not inked until 1884. The plotting of H. 1507b was completed in 1882, while the old topographic sheets were still in pencil and it is possible there may have been some doubt as to whether pencil dots and smudges were actually rocks when the shoreline and rocks were transferred to H. 1507b. The rocks referred to are listed below.

A small bare rock 120 m. S.S.W. of Sail Rock. This is believed to be an error in transferring the old topographic sheet, and this rock has been omitted.

Two bare rocks south of Havens Neck in about lat.  $38^{\circ} 48'.4$ , long.  $123^{\circ} 36'$ . These have been added as rocks awash as the other rocks shown as bare on the old survey were found to be rocks awash.

A bare rock 160 m. southwest of signal Pin, in lat.  $38^{\circ} 47'.8$ , long.  $123^{\circ} 35'.5$ . The new topographer searched for and could not find this and a sounding line run at low water also failed to find it. The rock was omitted as it is believed not to exist.

A bare rock in lat.  $38^{\circ} 47'.5$ , long.  $123^{\circ} 34'.1$ . It is clear that this is not a dry rock. If it exists at all there is a possibility that it may be a rock awash, and it has been added to the sheet as a rock awash.

A bare rock in lat. 38° 47', long. 123° 34'.8. This is believed to be an error in transferring the old topographic sheet. Two sunken rocks close to this spot were located by the hydrographic party and a bare rock certainly would not have been missed. This rock has been omitted.

An investigation of these rocks so that they could be removed from the chart if found non-existent, would have been desirable. It is realized that many of the conclusions regarding rocks are arrived at on rather weak evidence. A check of the rocks mentioned in this report by the field party should be made if they have an opportunity to do so.

7. The usual amount of field plotting was well done by the field party.
8. Character and scope of surveying - The survey as a whole is considered good. The area is certainly a most difficult one to survey. The ground is fairly well covered, and most of the shoal indications are fairly well developed. Some of the shoal soundings shown on the old surveys might have been more closely examined.
9. Additional lead line work is not recommended unless it would be considered worth while to examine some of the shoal spots shown on H. 1507b in the area between Fish Rocks and Havens Anchorage.

It is questionable whether a general wire drag survey is necessary as the bottom is regular in the vicinity and outside of the 20 fathom curve. A wire drag examination of the shoal area about one mile west of Arena Cove is recommended.

10. Reviewed by R. L. Johnston, April 14, 1931.

Inspected by E. P. Ellis

Approved:

  
Chief, Field Records Section

  
Chief, Field Work Section

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. 25

REGISTER NO. 4986

State CALIFORNIA

General locality ~~NORTHERN COAST~~ South of Pt. Arena

Locality ~~ARENA COVE TO BOWEN'S LANDING TO ARENA COVE~~

Scale <sup>1:10,000</sup> 1:20,000 Date of survey Aug. - Nov., 19 29

Vessel PORT & STARBOARD LAUNCHES, STR. DISCOVERER

Chief of Party F. B. T. SIEMS

Surveyed by R. W. KNOX & G. L. ANDERSON

Protracted by I. R. RUBOTTOM

Soundings penciled by I. R. RUBOTTOM

Soundings in fathoms ~~XRUC~~

Plane of reference MLLW

Subdivision of wire dragged areas by \_\_\_\_\_

Inked by J. D. Torrey

Verified by J. D. T.

Instructions dated MARCH 25, 19 29

Remarks: \_\_\_\_\_

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

AND REFER TO No. **81-DRM**

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

SECTION OF FIELD RECORDS

Review of Hydrographic Sheet No. 4986

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Surveyed in 1929

Hand lead and machine soundings

Instructions dated March 25, 1929.

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An investigation of these rocks so that they could be removed from the chart if found non-existent, would have been desirable. It is realized that many of the conclusions regarding rocks are arrived at on rather weak evidence. A check of the rocks mentioned in this report by the field party should be made if they have an opportunity to do so.

7. The usual amount of field plotting was well done by the field party.
8. Character and scope of surveying - The survey as a whole is considered good. The area is certainly a most difficult one to survey. The ground is fairly well covered, and most of the shoal indications are fairly well developed. Some of the shoal soundings shown on the old surveys might have been more closely examined.
9. Additional lead line work is not recommended unless it would be considered worth while to examine some of the shoal spots shown on H. 1507b in the area between Fish Rocks and Havens Anchorage.

It is questionable whether a general wire drag survey is necessary as the bottom is regular in the vicinity and outside of the 20 fathom curve. A wire drag examination of the shoal area about one mile west of Arena Cove is recommended.

10. Reviewed by R. L. Johnston, April 14, 1931.

Inspected by E. P. Ellis

Approved:

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Chief, Field Records Section

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Chief, Field Work Section