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Form 504	
U. S. COAST AND GEODETIC SURVEY	
DEPARTMENT OF COMMERCE	
DESCRIPTIVE REPORT	
Type of Survey	<i>Topographic</i>
Field No.	<i>4500</i>
Office No.	<i>4501</i>
	<i>4502</i>
LOCALITY	
State	<i>California</i>
General locality	<i>Coast of</i>
Locality	<i>Northern California</i>
<u>1929</u>	
CHIEF OF PARTY	
<i>F. G. Engle - F. B. T. Seim</i>	
LIBRARY & ARCHIVES	
DATE	

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Form 501
Ed. June, 1925

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

R. S. PATTON, Director

C. & G. SURVEY

L. & A.

MAR 25 1930

Acc. No.

State: CALIFORNIA

DESCRIPTIVE REPORT

Topographic

~~Hydrographic~~

Sheet No. S, F, and G

LOCALITY

COAST OF NORTHERN CALIFORNIA

Stillwell Pt. to Pt. Cabrillo - 4500

Vicinity of Navarro Head - 4501

Bridgeport Landing to north of Cuffeys Cove - 4502

1929

CHIEF OF PARTY

F. G. Engle and F. B. T. Siems.

T-4500 applied to Chart Comp 5711 July 16, 1941 H.E. MacEwen
T-4501 " " " " " Aug 20, 1941 H.E.M.

To: The Director,
U. S. Coast and Geodetic Survey,
Washington, D. C.

Through: The Commanding Officer,
U. S. C. & G. S. S. DISCOVERER,

From: Curtis Le Fever,
Aid,
U. S. C. & G. S. S. DISCOVERER.

Subject: Descriptive Report.

There is respectfully submitted herewith the following descriptive report to accompany topographic sheets E, F, and G, covering a portion of the California coast required in your instructions of March 25, 1929.

Curtis Le Fever
Curtis Le Fever,
Aid,
U. S. C. & G. S. S. DISCOVERER.

Approved and Forwarded:

F. B. T. Siems

F. B. T. Siems,
Chief of Party,
U. S. C. & G. S. S. DISCOVERER.

DESCRIPTIVE REPORT TO ACCOMPANY TOPOGRAPHIC

SHEETS E, F, & G.

AUTHORITY

The topography was executed in accordance with instructions of the Director of the U. S. Coast and Geodetic Survey, of March 25, 1929 for combined operations on the California Coast by the Coast and Geodetic Survey Ship Discoverer.

LOCALITY AND LIMITS

The area of California Coast covered by this survey extends from Point Cabrillo, Latitude $39^{\circ} 51'$ southward to a point about 2 miles south of Triangulation Station Red Bluff (1919) or Latitude approximately $39^{\circ} 09' 10''$. Both the northern and southern limits of this topography is joined by topography executed this same year (1929) by another topographic party from the S. S. DISCOVERER.

OBJECT OF SURVEY

The topography consists of a partial survey, the object of which is to locate signals on shore, to be used in both launch and ship hydrography along this part of the coast by the personal of the DISCOVERER. The topography includes the high and low water lines, bluff line, off lying rocks, breakers and buoys all of which are tied into the control.

ORGANIZATION OF PARTY

The party was made up of one officer (topographer), two seamen and one man hired as driver with the car. The first part of the topography from Point Cabrillo south to Triangulation Station Navarro Head 2 was done by Mr. G. R. Fish. From that point south to the southern limits was done by Mr. Curtis Le Fever. All of the inking was done by Mr. Le Fever. The men of the party were shifted from one duty to another as seen fit by the topographer. The arrangement of the party proved very satisfactory.

MEANS OF TRANSPORTATION

A car with driver was hired by the day, the first part of the season and by the month the latter part. The car used was a Dort touring with a luggage carrier on the side for carrying instruments. It was used to haul the party and instruments to and from the working grounds and proved very satisfactory, more so

than a truck would have as it was lighter, faster and more comfortable.

CONTROL

The triangulation was permanent stations most of them located in 1871, and 1919. Additional triangulation stations were being established and located by a triangulation party operating in connection with the S. S. DISCOVERER, Lieutenant Casper M. Durgin being in charge.

METHODS (see page 5 for continuation of this topic)

The usual plane-table methods of topography were used, traversing between successive triangulation stations, it being possible in many cases to check the survey by resection. The traverse was run on top of the bluff as there is very little beach along this part of the coast. The foot of the bluff and high water line were noted in most cases, the inclined distances always being corrected to horizontal distances. In many instances it was more accurate and feasible to locate the foot of the bluff by cuts. Off lying rocks, breakers and buoys were located by as many carefully taken cuts as practicable, not less than three in any case. Where the rocks were of any size cuts were taken to their edges so as to determine their proper size and shape.

DISCREPANCIES

In making the resurvey it is found that the present highwater line and bluff line check those shown on the old survey of 1872, and 1873, (Register No.s 1662, 1663) very closely. The bluffs have caved back at the top in some cases as can be expected in a period of 56 years. The resurvey does not check the 1926 survey of the Russian Gulch area. There is a difference of from 15 to 20 meters in an east and west direction. The resurvey falls west of that of 1926. This discrepancy was noted at the time of the resurvey and part of the work was checked the second time so as to be sure the error was not in the resurvey.

The survey of 1872 and 73, does not show any of the rocks as sunken. Particular precautions were taken in executing this survey to show all sunken rocks as such.

The survey of 1926 of the Greenwood section (Register No. 4208) is checked very close by the resurvey with the exceptions of some of the off lying rocks being larger than they were shown on the 1926 survey. One sunken rock about 1100 meters off shore at the southern side of the Greenwood Bay was not shown on the survey of 1926. This rock was seen at low tide and was located with as great accuracy as possible. The entrance buoy at Greenwood Harbor has evidently been moved since 1926 as its present position is about 236 meters south of that shown on the 1926 survey. Notes were made on the topographic sheet of these discrepancies and their amount and directions.

SIGNALS

Large whitewashed tripods were erected over the triangulation stations situated on top of the bluff and in positions suitable for hydrographic signals. These signals were built by the triangulation party.

Smaller signals were erected by the topographic party, it being necessary to put them very close together in the small inlets and bays. Whitewash marks on the rocky face of the bluff were used almost entirely for these signals. They were placed at the foot of the bluff where possible so as to avoid any appreciable angle of inclination when the launch hydrographic party was close inshore. There were a few places however, where it was impossible to get to the foot of the bluff or over the side very far. In these cases the signals were placed on top of the bluff.

MAGNETIC OBSERVATIONS

Magnetic meridians were determined at one triangulation station on each of the three sheets. Precautions were taken to avoid any local attraction influencing these observations. The following triangulation stations were occupied: Mendocino 2, Navarro Head 2, and Cliff (1926).

TRAVERSE

The traverses from Point Cabrillo light house to triangulation station Navarro Head 2, 1919 were run by Mr. Fish and he did not leave any errors of closure with Mr. LeFever but made a statement that all traverses closed very well.

The traverses run and the errors of closure were as follows:

	Error in distance	Azimuth
Navarro Head, 1919 to Cuffeys Cove 1871	16 meters	7 meters
Cuffeys Cove 1871 " Flag pole S.H. 1926	2 "	0 "
Flag pole S.H. 1926" Cliff 1926	2 "	1 "
Cliff 1926 " Red Bluff 1919	7 "	1 "

The traverse from Red Bluff to the next triangulation south was closed by the topographer working on topographic sheet H.

The traverse from Navarro Head 1919 to Cuffeys Cove 1871 was adjusted.

DESCRIPTION OF SHORELINE AND TOPOGRAPHIC FEATURES

Red Bluff A prominent cliff 197 feet high about 8 miles north of Point Arena. The country back of this bluff and as far north as Elk Creek is a fertile plain backed by steep grassy slopes with scattered timber in places.

From Elk Creek north the hills come in closer to the bluff and there is more scattered timber and less grass.

Greenwood landing (Elk P. O) is $10\frac{1}{2}$ miles north of Point Arena. It is backed by a high grassy hill with a wooded ravine on the south side. There is a small lumber dock from which a cable runs out to small lumber boats which make fast to mooring buoys on the north side of the dock. There is a sawmill located there and considerable lumber is shipped.

A bell buoy marks the entrance.

Navarro Landing At the mouth of Navarro River is now abandoned. Navarro Head on the north side of Navarro River is 405 feet high and is grass covered.

Salmon Point the south point at the entrance to Whitesboro Cove, $1\frac{1}{4}$ miles northward from the Navarro River, is a cliff 100 feet high the face of which is gray rock and the top grass covered. Detached rocks extend westward from the cliff for $\frac{1}{4}$ miles with a sunken rock (Bull Rock) $\frac{1}{2}$ mile off the point.

Albion River and landing is 2 miles northward from Navarro Head. The cove affords good shelter in northerly weather but is open to the south. The river however is navigable for a short distance for small boats such as fishing boats and makes a shelter for this type of boat in any weather. There is a long platform on the north side of the river where the boats can come along side.

Stillwell Point is a bold sharp cliff 190 feet high $1\frac{1}{2}$ miles northward from Albion River. A rocky islet 150 feet high lies close inshore on its north west side. There is a yellow slide on the southern face of the point.

Colby Reef $1\frac{1}{4}$ miles northward from Albion River, lies five eights miles off shore abreast Stillwell Point. There is foul ground between the reef and the shore.

Little River lies $4\frac{3}{4}$ miles northward from Navarro Head. The northwest shore of the cove is bluff and rocky. Good shelter from North westward and fair shelter from southwest is afforded by the rocks and reef on the south side of the cove. See Coast Pilot Pacific Coast for further description.

Mendocino Bay (chart 5719) lies 21 miles north from Point Arena and affords fair shelter in northwesterly weather but is open to the south. See the Coast Pilot Pacific Coast for a very accurate description of this harbor.

METHODS (continued)

All details shown on these sheets in pencil were transferred from the photostats of previous surveys and were not resurveyed.

The breaker shown in pencil on sheet F in the Albion River entrance was transferred from the photostat of the previous survey. A slight swell was noticed in approximately this position which might have indicated a shoal. No cuts were obtained on it.

T. 4500 - The topographic details in pencil were transferred from previous C. & G. S. surveys. A number of buildings in pencil contain cuts or prick marks showing that they were located in the 1929 survey. They should be so interpreted in charting.

E. P. Ellis, Dec. 4, 1930

LIST OF TOPOGRAPHIC POSITIONS ON SHEET E Scale 1-10,000

		o	'	mtrs.	o	'	mtrs.
				(461)✓			(840)✓
Fen	End of whitewashed fence	39	20	1389✓	123	49	597✓
				(934)✓			(1283)✓
Lo	Small whitewash on rock			916✓			154✓
				(36)✓			(133)✓
Peak	Top of rock	19		1814✓	48		1304✓
				(385)✓			(394)✓
Flat	Whitewash on edge of bluff			1465✓	48		1043✓
				(402)✓			(356)✓
Rok	Peak on large rock	19		1448			1081✓
				(605)✓			(924)✓
So	Whitewash on edge of bluff	1245		1245✓			513✓
				(884)✓			(1152)✓
Wm	Whitewash on top of bluff			966✓			285
				(930)✓			(838)✓
Tan	Whitewash on side of bluff			920✓			599✓
				(1328)✓			(1325)✓
Bum	Whitewash on side of bluff			522✓			112✓
				(766)✓			(582)✓
Tri	Small tripod on top of bluff	18		1084✓			856✓
				(1561)✓			(974)✓
Lum	Small banner on lumber pile	18		289✓			464✓
				(1608)✓			(1119)✓
Rod	Chimney on small building			242✓			319✓
				(1554)✓			(1157)✓
Pole	Flag pole			296✓			281✓
				(1375)✓			(1392)✓
Bar	Whitewash on barn			475✓			46✓
				(1436)✓			(487)✓
Bee	Small banner on beach			414✓	47		951✓
				(280)✓			(420)✓
Tel	Banner on telephone pole	17		1570✓			1018✓
				(968)✓			(406)✓
Fol	Whitewash on foot of bluff			882✓			1032✓

Hi	Peak on rock	39	17	(1074)✓ 776✓	48	(1169)✓ 269✓
Fan	Whitewash on top of bluff			(1130)✓ 720✓		(1264)✓ 174✓
Pun	Whitewash on side of bluff	39	17	(378)✓ (1472)✓	123 48	167 (1271)✓
Fish	Square banner on top of bluff	16	16	(237)✓ 1613✓		(1250)✓ 188✓
Squ	Whitewash on top of bluff			(1178)✓ 672✓	17	(93)✓ 1345✓
Pole	Whitewash on side of bluff			(1150)✓ 700✓		(488)✓ 950✓
Barn	Whitewash on side of barn			(1461)✓ 389✓		(928)✓ 510✓
En	Whitewash on corner of fence			(1556)✓ 294✓		(1110)✓ 328✓
Tip	Peak on large rock			(1718)✓ 132✓		(784)✓ 654✓
Pole	Whitewash on bottom of bluff	15		(138)✓ 1712✓		(1053)✓ 385✓
Land	Top of small rock	15		(383)✓ 1467✓		(969)✓ 469✓
Ok	Large whitewash on point	15		(780)✓ 1070✓		(1310)✓ 129✓
Gud	Large whitewash on side of bluff	16		(830)✓ 1020✓	48	(1387)✓ 49✓

LIST OF TOPOGRAPHIC POSITIONS ON SHEET F

Scale 1:10,000

			Lat. DM		Long. DP
		o	' m	o	' m
Top	Peak on large rock	39	(174)✓ 14 1676✓	123	47 00✓
Por	Whitewash on side of bluff		(358)✓ 1492✓		(211)✓ 46 1228✓
Coo	Large whitewash on top of bluff over natural bridge		(879)✓ 971✓		(438)✓ 1001✓
Lick	Peak on small rock		(1066)✓ 784✓		(78)✓ 1361✓
Hi	Whitewash on top of bluff		(1466)✓ 384✓		(581)✓ 858✓
Cur	Whitewash at foot of bluff		(1555)✓ 295✓		(481)✓ 958✓
Blu	Whitewash on side of bluff		(1777)✓ 73✓		(348)✓ 1091✓
Pin	Peak on rock	13	(177)✓ 1673✓		(89)✓ 1350✓
La	Whitewash at foot of bluff		(215)✓ 1635✓		(537)✓ 902✓
Wh	Top of small work		(402)✓ 1448✓		(741)✓ 698✓
Yel	Yellow water tank		(422)✓ 1428✓		(1209)✓ 230✓
Rd	Red boom pole in Albion Harbor		(503)✓ 1347✓		(1030)✓ 409✓
Rock	Whitewash on bluff		(850)✓ 1000✓		(565)✓ 874✓
Foot	Whitewash on rock		(1606)✓ 244✓		(1009)✓ 430✓
Hay	Top of rock	12	(193)✓ 1657✓		(590)✓ 849✓
Shp	Sharp peak on rock		(670)✓ 1180✓		(815)✓ 624✓

Scale 1:10,000

			Lat.	DM		Long.	DP
				M			M
Shi	Whitewash at foot of bluff	39	12	(797)✓ 1053	123	46	(955)✓ 485
Bra	Whitewash at foot of bluff			(1250)✓ 600			(955)✓ 485
Lw	Whitewash at foot of bluff			(1331)✓ 519			(1105)✓ 335
Uff	Whitewash on top of bluff		11	(110)✓ 1740			(950)✓ 490
Pt	Whitewash on rock 15 ft. high			(656)✓ 1194			(1270)✓ 170
Ng	Whitewash on rock at foot of bluff			(702)✓ 1148		45	(190)✓ 1250
Oog	Whitewash at foot of bluff			(883)✓ 967			(282)✓ 1158
Goo	Whitewash rock on sand beach			(901)✓ 949			(536)✓ 904
Arn	Red barn on hill			(1406)✓ 444			(1028)✓ 412
Jib	Point of rock 72 ft. high			(1764)✓ 86			(723)✓ 717
Buf	Whitewash at foot of bluff		10	(252)✓ 1598			(1060)✓ 380
Cn	Top of rock (86 ft. high)			(470)✓ 1380			(1084)✓ 356
Crp	Rock covered with bird line			(1436)✓ 414		44	(197)✓ 1243
Kor	Large whitewash on side of bluff			(1697)✓ 153			(528)✓ 912
Spi	Whitewash on rock on side of bluff		9	(139)✓ --			(868)✓ 572
One	Peak of large rock			(1035)✓ --			(1071)✓ 370

TOPOGRAPHIC POSITIONS ON SHEET G

T-4502

Ni	Whitewash on side of bluff	39	9	(1073)✓ 777	123	44	(1332)✓ 109
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Scale 1:10,000

		Lat.	DM	Long.	DP
		o	'	o	'
			m		m
Fld	Whitewash on side of bluff 40 ft. high		(1543)✓ 307 ✓		(1073)✓ 368 ✓
Punk	Whitewash on side of bluff 20 ft. high	8	(100)✓ 1750 ✓		(1241)✓ 200 ✓
Na	Peak of small rock	39	(1073)✓ 777 ✓	123 43	(104)✓ 1337 ✓
Fi	Small whitewash on top of bluff		(915)✓ 935 ✓		(393)✓ 1048 ✓
Scaf	Red water tank		(840)✓ 1010 ✓		(556)✓ 885 ✓
Tank	Unpainted water tank		(1522)✓ 328 ✓		(1206)✓ 235 ✓
Gas	Top of bird lime covered rock	07	(251)✓ 1599 ✓		(606)✓ 835 ✓
Rou	Peak of rock 122 feet high		(778)✓ 1073 ✓		(1150)✓ 291 ✓
Brd	Peak of bird lime covered rock		(1581)✓ 269 ✓		(1098)✓ 343 ✓
Barn	Whitewash on red barn	06	(631)✓ 1219 ✓	42	(443)✓ 998 ✓
Cup	White tank on top of house		977 ✓ (873)✓		942 ✓ (500)✓
Cris	Large whitewash on side of bluff		(1167)✓ 683 ✓		(595)✓ 647 ✓
Ise	Top of large rock	05	(182)✓ 1668 ✓		(577)✓ 865 ✓
Bri	Whitewash on side of bluff		(630)✓ 1220 ✓		(798)✓ 643 ✓
Punk	Large whitewash on side of bluff	04	(827)✓ 1023 ✓		(1259)✓ 183 ✓
Lo	Large whitewash at foot of bluff		(1384)✓ 466 ✓		(1414)✓ 26 ✓
Rok	Large peaked rock		(1579)✓ 271 ✓		(1382)✓ 58 ✓
Naro	Large whitewash at foot of bluff	05	(1532)✓ 318 ✓		(1076)✓ 366 ✓

o		m	o	m
		(118) ✓		(210) ✓
	03	1732 ✓	41	1233 ✓
		(301) ✓		(310) ✓
		1549 ✓		1133 ✓
		(490) ✓		(514) ✓
39	03	1360 ✓	123 41	929 ✓
		(705) ✓		(420) ✓
		1145 ✓		1023 ✓
		(1244) ✓		(518) ✓
		606 ✓		925 ✓

All whitewash marks and banners are not recoverable. All other signals such as rocks, buildings and tanks are recoverable.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

TOPOGRAPHIC TITLE SHEET

REG. NO. 4500

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. E

REGISTER NO. 4500

State California (Mendocino County)

General locality Northern Coast Pt Cabrillo

Locality Stillwell Pt. to Pt Cabrillo
Lat. $39^{\circ} 15' 05''$ to lat. $39^{\circ} 21' 00''$
(approx.)

Scale 1:10,000 Date of survey May 5 to May 20, 1929.

Vessel DISCOVERER

Chief of Party F. G. Engle

Surveyed by G. R. Fish

Inked by Curtis Le Fever

Heights in feet above Mean H. W. to ground to tops of trees

Contour, Approximate contour, Form line interval feet

Instructions dated March 25, 1929.

Remarks: No contours were redetermined, but some elevations were checked.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4501

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. F

REGISTER NO. **4501**

State California (Mendocino County)

General locality Northern Coast Navarro Head

Locality Vicinity of Navarro Head
Lat. 39° 09' 30" to 39° 15' 05"

Scale 1:10,000 Date of survey May 20 to June 15, 1929. (approx.)

Vessel DISCOVERER

Chief of Party F. G. Engle

Surveyed by G. R. Fish & Curtis Le Fever

Inked by Curtis Le Fever

Heights in feet above Mean H. W. to ground to tops of trees

Contour, Approximate contour, Form line interval feet

Instructions dated March 25, 1929.

Remarks: The contours were not redetermined but some elevations
were checked.

Titled

Form 537a
11-5813

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 4502

TOPOGRAPHIC TITLE SHEET

The Topographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. G

REGISTER NO. 4502

State California (Mendocino County)

General locality Northern Coast Pt. Arena

Locality Bridgeport Landing to north of Cuffeys Cove
~~Lat. 39° 03' 30" to lat. 39° 03' 30"~~

Scale 1:10,000 Date of survey June 15 to July 10, 1929. (approx.)

Vessel DISCOVERER

Chief of Party F. G. Engle

Surveyed by Curtis Le Fever

Inked by Curtis Le Fever

Heights in feet above Mean H. W. to ground to tops of trees

Contour, Approximate contour, Form line interval feet

Instructions dated March 25, 1929.

Remarks: No contours were redetermined but some elevations were checked.