

6408

WIRE DRAG

U. S. COAST AND GEODETIC SURVEY
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6408 WIRE DRAG

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

DESCRIPTIVE REPORT

WIRE DRAG
~~Topographic~~
~~Hydrographic~~ } Sheet No. 22-37

State California

LOCALITY

Off Cape Mendocino

Vicinity
~~From Devil's Gate Rock to 2 Miles~~
~~North of False Cape Rock.~~

1937

CHIEF OF PARTY

F. H. Hardy

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

WIRE DRAG
~~HYDROGRAPHIC SURVEY~~ 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. 22-37 and 38

REGISTER NO. H-6408 W. D.

State California

General locality ^{Off} Cape Mendocino

Locality vicinity
~~From Devils Gate Rock to 2 Miles North of False Cape Rock.~~

Scale 1:20,000 Date of survey Aug., Sept., Oct., 1937
July 15 to Sept. 24, 1938.

Vessel GUIDE

Chief of Party F. H. Hardy

Surveyed by Wm. D. Patterson - W. J. Chovan

Protracted by K. S. Ulm

Soundings penciled by K. S. Ulm

Soundings in fathoms feet Drag Depths in Feet.

Plane of reference M.L.L.W.

Subdivision of wire dragged areas by K.S. Ulm

Inked by K. S. Ulm

Verified by J. A. M^c Cormick

Supplemental - March 6, 1937
Instructions dated May 2, 1935, May 31, 1934, 19

Remarks: Dual Control, Positions by visual fixes using

Chartered Launches FLORENCE & VIRGINIA, and ship's launches.

DESCRIPTIVE REPORT
to accompany
WIRE DRAG SMOOTH SHEET NO. WD-22-37-38
Cape Mendocino
U.S.C. & G.S.S. GUIDE
1937

- (1) INSTRUCTIONS: Director's Instructions dated May 31, 1934, and Supplemental Instructions dated May 2, 1935, and March 6, 1937. ✓
- (2) CHARACTER AND LIMITS OF WORK: This sheet covers the inshore and offshore area in the vicinity of Cape Mendocino northward of Blunts Reef. It was intended to cover the offshore area to westward and southward of Blunts Reef joining the inshore Sheet No. 2-37, scale 1:10,000, but the lateness of the season and bad weather prevented its completion. ^{H-6489, W.R.}
- (3) The scale of this sheet is 1:20,000. ✓
- (4) The sheet is not completed.
- (5) The position interval was five minutes throughout the sheet except at the beginning and ends of lines and where there was a radical change in course or speed. ✓
- (6) Dual control and visual fixes were used throughout. ✓
- (7) Effective depths ranged from 84 to 21 feet. ✓
- (8) CONTROL AND DATUM: This sheet is on the final adjusted North American Datum of 1927. Topographic signals were taken from topographic sheets (Field Letters) "N" and "P" of 1936, and "Q" and "R" of 1937. No shoreline was run on the topographic sheets. No hydrographic locations were used on this sheet. ^{T-6330 T-6614a T-6614b T-6615a}
- (9) DATES OF SURVEY: August 27, 1937 to October 13, 1937 and July 15 to Sept. 24, 1938.
- (10) TIDAL REDUCERS: Tidal reducers for this sheet were obtained from the portable automatic tide gage at Shelter Cove. See the attached sheet regarding tidal reducers.
- (11) JUNCTIONS AND OVERLAPS: The sheet joins with Wire Drag Sheet, scale 1:10,000, No. 2-37, to eastward. The wire drag sheets to northward and southward of this sheet have not yet been begun. The overlap on the adjoining sheet is good. ^{H-6489} See par. 2, review.

(12) GROUNDINGS:

Pos. No.	Latitude & Longitude	Grounded Eff. Depth	Least Sdg. Depth	Cleared Eff. Depth	Depth Plotted	Remarks
	o ' "	Feet	Fms.Ft.	Feet	Fms. Ft.	
✓ 1 b	40 30.26 124 28.88	56 ✓	16 2 ✓	44 54 ✓	9 2	Grounded on inclined section, plotted as shoal-est.
✓ 2 b	40 30.25 124 29.05	66 Not grounded ✓	21 2 ✓	54	21 11 0	
✓ 3 b	40 29.88 124 30.52	83 ✓	10 4 ✓	Not 59 Cleared ✓	10 4	
✓ 4 b	40 29.85 124 30.55	83 ✓	13 1 ✓	Not 59 Cleared ✓	13 1	Aground also at Buoy No.9. See paragraph 13. ✓
✓ 1 c	40 29.60 124 28.48	34	6 4 ✓	34 ✓	5 4/6 ✓	See paragraph 14. ✓
✓ 2 c	40 29.68 124 28.75	44	9 5 ✓	33 ✓	7 4 2	These sdgs. cleared at shoal depths due to shaller sdgs. in the vicinity. ✓
✓ 3 c	40 29.65 124 28.75	No grounding ✓	8 2 ✓	21 ✓	8 4 2	-ditto- ✓
✓ 4 c	40 29.35 124 29.60	54	6 1 ✓	30 27	6 1 1 ✓	-ditto- ✓
✓ 1 d	40 31.40 124 24.30	57	8 2 ✓	Not Cleared	8 4 8 2	Cleared with 36 Ft. on H-6322 (1938) W.D.
✓ 2 e	40 31.25 124 24.65	55 ✓	No Sdg. ✓	44 ✓	9 4 1 ✓	
✓ 3 e	40 30.72 124 24.65	44	7 0 ✓	37 ✓	7 0 ✓	
✓ 6 e	40 31.15 124 24.65	- -	11 3 ✓	44 ✓	11 3	Drag sank while setting out. ✓
✓ 2 f	40 30.72 124 24.82	45 57 ✓	7 3 ✓	37 ✓	7 2 6 1	Grounding was at a buoy with effective depth of 45 ft. See paragraph 14.
✓ 2 g	40 29.25 124 29.85	65	9 2 ✓	Not 52 Cleared ✓	9 4 2	
✓ 3 g	40 29.15 124 29.68	65	10 2 ✓	35 ✓	10 4 2	
✓ 4 g	40 29.20 124 29.35	65	10 3 ✓	47 ✓	10 2 3	
✓ 5 g	40 29.66 124 28.35	66	10 5 ✓	53 ✓	10 4 5	
✓ 1 h	40 29.75 124 28.58	53	7 5 ✓	34 ✓	7 4 5	
✓ 2 h	40 29.65 124 28.50	53	No Sdg. ✓	34 ✓	Not Plotted	Same shoal as 1c. ✓
✓ 4 h	40 29.62 124 28.65	53	8 2 ✓	34 ✓	8 4 2	

Pos. No.	Latitude & Longitude		Grounded Eff. Depth	Least Sdg. Depth	Cleared Eff. Depth	Depth Plotted	Remarks
	o	'	Feet	Fms. Ft.	Feet	Fms. Ft.	
✓ 1 j	40	29.63	✓ 34	4 3	✓ 21	4 1/2 3	See paragraph 23. ✓
✓ 2 j	40	29.50	✓ 36	5 0	✓ 27	5 0	
✓ 3 j	124	29.35	✓ 44	5 4	not 30 cleared 56	4	
✓ 1 k	124	29.85	✓ 70	12 4	not 61 cleared 11	4	See paragraph 18. ✓

(13) On "B" day the drag was also aground at Buoy 9, the position not being determined because fog shut in. Since this grounding was first noticed at Position 38, end launch, the probable position of the shoal is near the apex ✓ of the undragged area here, and the upright depth is 83 feet as shown in pencil on the smooth sheet. Later the drag pulled around to Buoy 9 with an effective depth of 75 feet. Grounding of 12 fms. plotted from cut.

(14) Grounding "1c" hung up with an effective depth of 34 feet. The least depth obtained by hand lead was 40 feet. This spot was later cleared with an effective depth of 34 feet. Probably a pinnacle with a least depth very ✓ nearly 34 feet so that the drag cleared at this depth one day and hung up previously at the same depth under slightly different conditions of swell and lift. ~~The same applies to grounding 2 "f" at 37 feet, later cleared at 37 feet, least depth with hand lead 45 feet.~~

(15) MISCELLANEOUS: The bight of drag at the beginning of "A" day was plotted straight on Position 2. instead of a reverse curve on Position 1. The additional area would be of little importance since later work must ✓ overlap here. The drag at the end of the day appears as though it might be aground. However, this is due to the fact that the end launch was plotting their fixes wrong and did not realize that they were heading in toward the guide launch. The area was covered again on "B" day.

(16) On "B" day the drag strip was ended on Position 31 since the drag later went aground near the middle. ~~and its location could not be determined.~~ ✓ (the grounding at Buoy 9 described in paragraph 13), due to fog setting in. ~~Future work must overlap here in any case.~~

(17) On "J" day the drag strip was ended on Position 45 since we do not know at what later time the drag pulled clear and very little additional ✓ area was covered. However, as shown on the boat sheet, the additional work shows beyond doubt that the 10 2/6 fathom shoal, Position 3 g, was covered.

(18) No area should be claimed for "K" day since this day was only plotted to show the effective depth of the grounding at Position 1 k. ^{Grounding of 11 fms. plotted.} The effective depth of 70 feet should be plotted instead of the hand lead sounding of 76 feet. A heavy sea prevented accurate sounding and the location of least depth. The end of the season prevented further work here. Cleared in 1938 with 61 ft.

(19) The end launch boat sheet is the same as boat sheet for Hydrographic Sheet No. 21. True of 1937 work. Separate boat sheet for 1938. H-6406.

(20) SPLITS: ~~A small area between grounds, positions 2g and 3j, Latitude 40° 29.8', Longitude 124° 26.0', must be covered next year as groundings have not been cleared. This however, is at the edge of the unfinished area.~~ Not applicable.

(21) In latitude 40° 29.0', Longitude 124° 26.5', the overlap between "G" and "H" days is quite small. However, since these lines are fairly close to shore and fixes are very strong it is believed that no split should be considered here. Satisfactory

(22) ADDITIONAL WORK NEEDED: ~~The split described in paragraph 20, with the two groundings at positions 2g and 3j should be covered. This is close to the unfinished area described in paragraph 24.~~

(23) The 27 foot sounding, Position 1j was cleared with an effective depth of only 21 feet due to an error in applying tidal correction when the drag was set out. Since this is the shoalest sounding obtained in this general area where many groundings were had, it is recommended that the entire shoal area here be covered with a drag set at an effective depth of 25 feet.

(24) ~~The outer limits of the unfinished area are shown on the smooth sheet by a heavy dashed pencil line. These limits were indicated on a chart furnished the party by the Washington Office. This work should extend to a good overlap with the area dragged on Sheet 2-37, south of Blunts Reef. The chart shows a submerged wreck west of Blunts Reef and the drag work should extend close enough to the reef to clear this wreck.~~ Not applicable.

(25) If the office thinks advisable, the area described in paragraph 21, where the overlap is somewhat scant, should be covered. Not necessary.

(26) COMPARISON WITH OTHER SURVEYS: In Latitude 40° 29.1', Longitude 124° 29.2', the hydrographic party obtained a sounding of 9 3/4 fathoms (Smooth Sheet No. 21-37). This was covered with an effective drag depth of 65 feet on "G" day, though the drag was apparently aground on this spot at positions 70 to 72 G, and pulled clear at Position 72 G, judging from the sudden change in speed of the guide launch at Position 72 G. The sounding was obtained by wire, and may be a few feet in error due to sudden change in depth and moderate swell. This shoal was later covered by an effective depth of 47 feet.

(27) No other discrepancies between this survey and other surveys were noted.

(28) PERSONNEL AND EQUIPMENT: Lieutenant Wm. D. Patterson was in charge of this work on the guide launch. The end launch was in charge of Lieutenant (j.g.) W. J. Chovan for part of the time and Lieutenant (j.g.) G. M. Marchand for the remainder of the time. Chartered launches FLORENCE (guide launch) and VIRGINIA (end launch) were used for the long drags. The VIRGINIA was laid up for several days on a marine ways to remove an upright wire from the propeller and during this time one of the launches from the Ship GUIDE

was used for end launch. This accounts for the short drags used on "H" and "J" days. The long delay in repairs to the VIRGINIA was due to the fact that marine ways broke while the VIRGINIA was on them.

(29) Standard wire drag equipment was used throughout the work.

(30) WEATHER AND WORKING CONDITIONS: Cape Mendocino is an exposed section of coast where strong winds, fog, heavy seas, and strong tidal currents abound, and where there is no nearby protected anchorage for the wire drag launches. The nearest safe anchorage is at Humbolt Bay, 22 miles from the working area. The wire drag launches remained at the Coast Guard wharf, just inside the jetties at Humbolt Bay, during bad weather. Each day at 5:45 a.m., we had a radio schedule with the ship, which usually anchored on or near the working grounds, and would get underway at 6:00 a.m. if the ship reported favorable weather. A considerable part of a good working day might be lost by the long run back and forth, but this was the only safe procedure. When the seas were not too heavy and the weather predictions were favorable, we would anchor for the night off the mouth of Bear Creek, north of the Cape. The wire drag launches were quite sturdy vessels, but our anchoring depended upon whether weather conditions were sufficiently safe for the small tender. Frequently, after rolling around all night at the anchorage, we would have to run in the next morning because increasing wind or fog prevented work.

(31) The proper development of wire drag groundings, and the testing of drag depth was sometimes hindered or prevented by heavy seas. The seas were sometimes so heavy that the tender could not come alongside the guide launch, to get the dragmaster, with safety. Often, the drag grounded before it could be tested. In these cases, we have assumed a reduction for lift in accordance with what the tests showed it to be under similar conditions of current, drag depth, length of drag, etc.

Respectfully submitted,

Wm. D. Patterson

Wm. D. Patterson,
H. & G. Engineer,
C. & G. Survey.

Approved, forwarded:

F. H. Hardy

F. H. Hardy,
Chief of Party, C. & G. S.,
Commanding Ship GUIDE.

STATEMENT
to accompany
WIRE DRAG SHEET FIELD NO. 22-37
1937

The plotting and protracting of buoy positions was performed
by Lieutenant (j.g.) Kenneth S. Ulm,

The drag areas were subdivided and inked by Lieutenant (j.g.)
Kenneth S. Ulm.

The completed smooth sheet has been inspected and is approved.

F. H. Hardy

F. H. Hardy,
Chief of Party, C. & G. S.,
Commanding Ship GUIDE.

STATISTICS
for
WIRE DRAG SHEET No. 22-37

Day Letter	Volume	Statute Miles	Positions Guide & End Launches	Drag Length	Tender Soundings	Positions
A	1	2.0	28	10,000	0	0
B	1	3.5	74	10,000	4	4
C	1	2.1	42	7,200	4	4
D	1	1.0	23	7,200	1	1
E	1	2.7	64	7,200	3	6
F	1	0.6	14	7,200	1	2
G	1 & 2	10.1	156	10,000	4	5
H	2	11.0	152	4,000	2	4
J	2	5.0	92	4,000	3	3
K	2	0.2	9	10,000	1	1
L	2	0.5	10	7,200	0	0
TOTALS		38.7	664		23	30

AREA SQUARE STATUTE MILES = 26.0

ADDENDA TO DESCRIPTIVE REPORT OF
FIELD SHEET NO. 22-37

1. DATES OF SURVEY: July 15, 1938 to September 24, 1938. ✓

This sheet was completed in the 1938 field season. ✓

2. TIDAL REDUCERS: Tidal reducers for 1938 were obtained from the portable automatic tide gages at Shelter Cove and North Jetty, Humboldt Bay. See the attached sheet regarding tidal reducers.

3. JUNCTIONS AND OVERLAPS: This sheet joins with Wire Drag Sheets, scale 1:10,000, No. 2-37 to eastward, No. 3-38 to northward and No. 4-38 to the south. The overlap on the adjoining sheets are good. H-6409 W.D. H-6322 W.D. H-6410 W.D.

4. GROUNDINGS:

Pos.No.	Latitude & Longitude		Grounded Eff. Depth	Least Sdg. Depth	Cleared Eff. Depth	Depth Plotted	Remarks
	°	'	Ft.	Fms.Ft.	Ft.	Fms.Ft.	
3 b	40 29.88	124 30.52	83 ✓	10 4 ✓	59 ✓	10 4 ✓	Cleared again at 50 ft. ✓
4 b	40 29.85	124 30.55	83 ✓	13 1 ✓	59 ✓	13 ±	Close to 10 4/6 Fms Sdg.
1 d	40 31.40	124 24.30	57 ✓	8 2 ✓	36 ✓	8 2 ✓	Cleared on Sheet No. 3- 506 H-6322
2 g	40 29.25	124 29.85	65 ✓	9 2 ✓	52 ✓	9 2 ✓	Cleared again at 30 feet. ✓
3 j	40 29.35	124 29.85	44 ✓	5 4 ✓	30 ✓	5 4 ✓	
1 k	40 24.45	124 27.48	70 ✓	12 4 ✓	61 ✓	11 4 ✓	
1 l	40 23.97	124 25.57	62 ✓	12 1 ✓	41 ✓	10 2 ✓	Close to 7 1/6 Fms Sdg. ✓
2 l	40 23.95	124 25.56	62 ✓	10 1 ✓	41 ✓	10 ±	Close to 7 1/6 Fms Sdg.
3 l	40 23.90	124 25.55	84 ✓	7 1 ✓	41 ✓	7 ±	
4 l	40 27.00	124 28.28	62 ✓	8 5 ✓	not cleared	8 5 ✓	Not cleared due to shoaler depths in immediate vicinity. See paragraph No. 6 ✓
5 l	40 27.00	124 28.75	62 ✓	7 2 ✓	35 ✓	7 2 ✓	
2 n	40 29.95	124 30.50	59 ✓	9 3 ✓	50 ✓	9 2 ✓	
1 p	40 26.95	124 28.15	43 ✓	4 0 ✓	not cleared	4 0 ✓	Not cleared, too near to Blunts Reef. See paragraph No. 6 ✓

5.

Pos.No.	Latitude & Longitude	Grounded Eff. Depth Ft.	Least Sdg. Depth Fms.Ft.	Cleared Eff. Depth Ft.	Depth Plotted Fms.Ft.	Remarks
2 p	40 27.00 124 28.46	35 ✓	No Sdg. ✓	24 ✓	5 1/2 ✓	
4 c	40 29.35 124 29.60	54 ✓	6 1 ✓	30 ✓	6 1/2 ✓	Cleared by 27 feet in 1937 ✓
2 a	40 26.47 124 27.91	✓	1 4/6 ✓			Verification of shoal Sdg. 1/2 mile so. of Blunts Reef. See Parag. No. 7 ✓
9 a	40 26.21 124 28.25	✓	3 4/6 ✓			Verification of Great Break. See Parag. No. 7 ✓

6. Groundings at 4-1 and 1-p were not cleared due to their nearness to Blunts Reef. These shoals could not be cleared without placing the guide launch in danger of grounding on Blunts Reef. ✓

7. Red letter day A drag strips were not plotted as this work was done in order to verify shoals in the quickest and most economical manner. However, the shoalest soundings were plotted on this sheet. ✓

8. The groundings at 2 c green (from Sheet No. 2-37) were intentional in order to have deeper depths up to the shoal. ✓

9. The 13 5/6 upright depth ^{plotted as 12 fm. grounding} mentioned in paragraph No. 13 of this report was covered with ~~50~~⁵⁴ feet this year. ✓

10. SPLITS: There were no additional splits for this years' work. The split mentioned in paragraph No. 20 of this report was covered by 30 feet. ✓

11. The small area at Latitude 40° 30.3', Longitude 124° 30.3', should not be considered a split. On "B" day the strip was ended on Position 31, since the Guide Launch positions were not certain. However, the end launch positions continued until Position 44-B. These positions are good and although the position of the bight of the drag is not definately fixed. Its worst position would cover the area in question. Therefore, it is recommended that this ~~area~~ area be considered covered by 83 feet. ^{shown as split.} ✓

No additional work is recommended.

12. PERSONNEL AND EQUIPMENT: Lieutenant (j.g.) Walter J. Chovan was in charge of this work on the guide launch. Lieutenant (j.g.) H. F. Garber was in charge of the end launch. ✓

Chartered launches FLORENCE (guide launch) and VIRGINIA I (end launch) were used for long drags. The starboard motorsailer (guide launch) and the port motorsailer (end launch) were used for two days on short drags around Blunts Reef. ✓

Respectfully submitted,

Kenneth S. Ulm

Kenneth S. Ulm,
Jr. H & G Engineer,
C. & G. S.

Approved and forwarded:

E. W. Eickelberg

E. W. Eickelberg,
Chief of Party, C. & G. S.,
Commanding Ship GUIDE from October 3, 1938;
Preceded by Captain F. H. Hardy from 6-15-38 to 10-3-38;
Preceded by Comdr. O. W. Swainson from 5-1-38 to 6-15-38.

Shelter Cove tides were used for reducers for work south of False Cape with no corrections for time or heights. For work north of False Cape when records at Humboldt Bay were incomplete or missing a correction of plus fifteen minutes was applied with no corrections for heights, in accordance with Director's letter dated October 26, 1938.

San Francisco tides were used for reducers on May 29th and October 7th to 18th inclusive, when records from Humboldt Bay and Shelter Cove were incomplete or not available. A correction in time of minus 0.46 hours to high water, minus 0.14 to low water and a range factor of 1.12 to staff readings was applied. These factors reduce tides at San Francisco to Shelter Cove as of simultaneous comparison between these stations determined in 1936.

Hourly heights were tabulated for only the hours of those days on which work was done. High and low waters were not tabulated. Nor were simultaneous comparisons made between North Jetty, Humboldt Bay and Shelter Cove; as previous comparisons in 1937 were made from a better series of observations.

Respectfully submitted,

Approved and forwarded:

E. W. Eickelberg,
Chief of Party, C. & G. S.,
Commanding Ship GUIDE from October 3, 1938;
Preceded by Captain F. H. Hardy from 6-15-38 to 10-3-38;
Preceded by Comdr O. W. Swainson from 5-1-38 to 6-15-38.

STATISTICS
for
WIRE DRAG SHEET NO. 22-37
1938

Day Letter	Volume	Statute Miles	Positions Guide & End Launches	Drag Length	Tender Soundings	Positions
L	3	2.3	54	10,000 7,200	7	5
M	3	6.7	112	10,000	0	0
N	3	5.2	51	10,000	2	2
P	3	6.9	102	7,200 10,000	1	2
A (red)	4	---	17	2,000	0	0
B (red)	4	2.9	65	3,000	0	0
TOTALS		24.0	401		10	9

AREA SQUARE STATUTE MILES = 14.0

TOTAL STATISTICS FOR 1937 and 1938

	Statute Miles	Positions	Soundings	Positions
1937	38.7	664	23	30
1938	24.0	401	10	9
GRAND TOTALS	62.7	1065	33	39

TOTAL AREA SQUARE STATUTE MILES = 40.0

TIDAL DATA
to accompany
HYDROGRAPHIC REPORT SHEET NO.....
NORTHERN CALIFORNIA
1938

Tidal observations for the 1938 field season were made with portable automatic gages established at two locations:

1. NORTH JETTY, HUMBOLDT BAY, CALIFORNIA: This gage was put in operation on May 9, 1938 at 11:30 A.M. This record consists of twenty-five marigrams to October 7, 1938 at 12:15 P.M. which terminates the series. Some difficulty was encountered in obtaining good records due to the inexperience of the tide observer. Lapses occurred in the series due to operation difficulties of the tide observer. The M.L.L.W. reading on the staff (as determined from bench mark elevation) was found to be 2.0 feet.

Reducers for the work prior to the establishment of the tide gage at Humboldt Bay were obtained as follows: On May 7th from predicted tides of Humboldt Bay corrected by direct comparison between actual and predicted tides as Humboldt Bay for the period May 10th to 13th inclusive. On May 8th by staff readings on U. S. Engineers' tide staff at U. S. Coast Guard Station, Humboldt Bay. The U. S. Engineers' tide staff was corrected by a series of levels to the bench marks at North Jetty, Humboldt Bay, on May 9th. M.L.L.W. reading on the U. S. Engineers' staff (as determined from bench mark elevations) were found to be zero.

North Jetty, Humboldt Bay tides, used for reducers north of Cape Mendocino, were corrected to outside coast by applying a correction of minus thirty minutes in time with no correction in height, in accordance with Director's letter dated October 26, 1938. For area south of Cape Mendocino, where Shelter Cove tides were incomplete or missing, Humboldt Bay tides were used for reducers with a correction of minus forty-five minutes in time and no correction in heights, in accordance with instructions for Project HT-206, dated May 2, 1935.

2. SHELTER COVE, CALIFORNIA: This gage was put in operation on May 20th at 6:15 P.M. to May 28th at 6:43 P.M. This series consists of two marigrams. This gage was again put in operation on July 9th at 11:45 A.M. This record consists of twenty-five marigrams which terminate on October 14th at 9:30 A.M. Records at times were poor due to lack of aptitude of observer as evidenced by erroneous settings of times and staff readings on marigrams and other incomplete data. Some marigrams will permit reductions only by comparison with observed tides at another station. The M.L.L.W. reading on the staff (as determined from bench mark elevations) was found to be 3.4 feet.

TIDE NOTE FOR HYDROGRAPHIC SHEET

January 28, 1939.

Division of Hydrography and Topography:

✓ Division of Charts: Attention: Mr. E. P. Ellis

Plane of reference

~~Tides~~ ~~Records~~ approved in
11 volumes of sounding/records for
and wire drag

HYDROGRAPHIC SHEET 6408

Locality Devils Gate Rock to vicinity of False Cape Rock, off Cape Mendocino,
California.

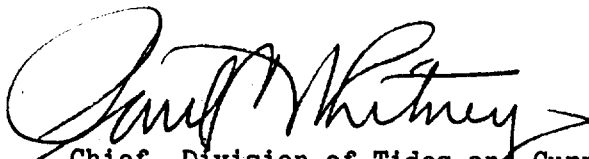
Chief of Party: F. H. Hardy in 1937-1938

Plane of reference is mean lower low water reading

- 3.0 ft. on tide staff at Shelter Cove 1937
- 7.1 ft. below B.M. 1 A
- 3.4 ft. on tide staff at Shelter Cove 1938
- 7.1 ft. below B.M. 1 A
- 2.0 ft. on tide staff at North Jetty, Humboldt Bay, 1938
- 11.5 ft. below B.M. 1

Height of mean high water above plane of reference is 5.6 feet at Shelter
Cove, 5.8 feet at North Jetty, Humboldt Bay.

Condition of records satisfactory except as noted below:


Chief, Division of Tides and Currents.

GEOGRAPHIC NAMES

Survey No. **H6408** W.D.

On Chart No. 5602
 On previous survey No.
 On U. S. quadrangle Maps
 From local information
 On local Maps
 P. O. Guide or Map
 Rand McNally Atlas
 U. S. Light List

Name on Survey

A, B, C, D, E, F, G, H, K

<u>Cape Mendocino</u>	✓											1
<u>Blunts Reef</u>	✓											2
<u>Mussel Rock</u>	✓											3
<u>False Cape</u>	✓											4
<u>False Cape Rock</u>	✓											5
<u>Sugar Loaf</u>	✓											6
<u>Steamboat Rock</u>	✓											7
<u>Bear River</u>	✓											8
<u>Devils Gate Rock</u>	✓											9
<u>Shelter Cove</u>	✓											10
<u>Humboldt Bay</u>	✓											11
												12
												13
												14
												15
												16
												17
												18
												19
												20
Names underlined in red approved											21	
by <u>W.E.</u> on 3/2/39											22	
												23
												24
												25
												26
												27

Remarks

Decisions

	Remarks	Decisions
1		File No 404 244
2	USGB decision	" 404 244
3		" 405 243
4	Referred to USGB vs 'Cape Fortunus' 1/13/39	" 405 243
5		" 405 243
6		" 404 244
7		" 404 244
8		" 404 243
9		" 403 243
10	Location of T.G. - Off limit of survey	" 400 240
11	" " " " " " "	" 407 242
12		
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Field Records Section (Charts)

H6408 W.D.
HYDROGRAPHIC SHEET NO.

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

Number of positions on sheet	...1104
Number of positions checked46
Number of positions revised2
Number of soundings recorded	...33
Number of soundings revised0
Number of signals erroneously plotted or transferred0

Date: Feb. 17, 1939.

Verification by J. A. McCormick

Time: 30 hr.

Review by J. A. McCormick

Time: 24 hr.

HYDROGRAPHIC SURVEY NO. H6408 W.D.

Smooth Sheet Yes

Boat Sheet Two

Records; Sounding 2 Vols., Wire Drag 9 Vols., Bomb Vols.

Descriptive Report Yes

Title Sheet Yes

List of Signals Vol.#1

Landmarks for Charts (Form 567) Yes

Statistics Yes

Approved by Chief of Party Yes

Recoverable Station Cards (Form 524)

Special Chart for Lighthouse Service
(Circular Nov.30, 1933)

Hydrography: Total Days ¹¹ 6; Last Date Oct. 13, 1937
Sept. 24, 1938

Remarks

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
 DESCRIPTIVE REPORT
~~PHOTO STAT COPY~~

No. H-6408 W.D.
~~No. 1~~

received Dec. 29, 1938
 registered Jan. 6, 1939
 verified
 reviewed
 approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
24			
25			
26			
30			
40			
62			
63			
82			
83			
88			
90			

RETURN TO

82	T. B. Reed
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V JBR

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6408 (1937-38) W. D. Field No. 22

Devils Gate Rock to Vicinity of False Cape Rock,
Off Cape Mendocino, Calif.

Surveyed in Aug.-Oct., 1937. July-Sept., 1938., Scale 1-20,000.
Instructions dated May 31, 1934; May 2, 1935; March 6, 1937 (GUIDE).

Wire Drag.

Dual Control on shore signals.

Chief of Party - F. H. Hardy.
Surveyed by - W. D. Patterson and W. J. Chovan.
Protracted by - K. S. Ulm.
Subdivision of wire dragged areas by - K. S. Ulm.
Inked by - K. S. Ulm.
Verified by - J. A. Mc Cormick.

1. Shoreline and Signals.

- a. This being an offshore survey, no shoreline is shown.
- b. Topographic signals originate with surveys T-6559 (1936), T-6614 a&b¹(1936-38) and T-6615a (1937).

2. Junctions with Contemporary Wire Drag Surveys.

- a. The junctions with H-6322 (1938) W.D. on the northeast and H-6410 (1938) W.D. on the south are satisfactory.
- b. The junction with H-6409 (1937-38) on the east will be considered in the review of that survey.

3. Results of Survey.

a. Shoals discovered and clearance depths obtained.

- (1) An 8-1/4 fathom sounding in lat. 40°31.4', long. 124° 24.3' falling in charted depths of 17 fathoms. Cleared with an effective depth of 36 feet on H-6322 (1938)W.D.
- (2) A 9-1/4 fathom grounding in lat. 40°31.2', long. 124° 24.6' falling in charted depths of 19 to 20 fathoms. Cleared with 44 foot effective depth.
- (3) An 11 fathom sounding in lat. 40°31.1', long. 124°24.7' falling in charted depths of 18 to 19 fathoms. Cleared with 44 foot effective depth.
- (4) A 7 fathom sounding in lat. 40°30.7', long. 124°24.6' falling in charted depths of 11 to 12 fathoms. Cleared with 37 foot effective depth.

- (5) A 7-1/2 fathom sounding in lat. 40°30.7', long. 124° 24.8' falling in charted depths of 11-1/2 to 18 fathoms. Cleared with a 37 foot effective depth.
- (6) A 9-1/4 fathom grounding in lat. 40°30.3', long. 124° 28.9' falling in depths of 23 to 26 fathoms on H-6406 (1937). Cleared with effective depth of 44 to 54 feet.
- (7) A 12 fathom grounding in lat. 40°30.2', long. 124°29. 5' falling in depths of 19 fathoms on H-6406 (1937). Cleared with a 54 foot effective depth.
- (8) A 9-1/2 fathom sounding in lat. 40°29.9', long. 124° 30.5' falling in depths of 20 to 21 fathoms on H-6406 (1937). Cleared with a 50 foot effective depth.
- (9) A 5-4/6 fathom sounding in lat. 40°29.3', long. 124° 29.9' falling in depths of 13 to 15 fathoms on H-6406 (1937). Cleared with a 30 foot effective depth.
- (10) A 6-1/6 fathom sounding in lat. 40°29.3', long. 124° 29.6' falling in depths of 13 to 14 fathoms on H-6406 (1937). Cleared with a 30 foot effective depth.
- (11) A 5 fathom sounding in lat. 40°29.5', long. 124°29.2' falling in depths of 6-5/6 to 15 fathoms on H-6406 (1937). Cleared with a 27 foot effective depth.
- (12) A 10-1/4 fathom sounding in lat. 40°29.2', long. 124° 29.7' falling in depths of 11 to 12 fathoms on H-6406 (1937). Cleared with a 35 foot effective depth.
- (13) A 10-1/2 fathom sounding in lat. 40°29.2', long. 124° 29.4' falling in depths of 12 fathoms on H-6406 (1937). Cleared with a 47 foot effective depth.
- (14) A 7-1/4 fathom grounding in lat. 40°29.7', long. 124° 28.8' falling in depths of 10-1/4 to 13 fathoms on H-6406 (1937). Cleared with a 33 foot effective depth.
- (15) A 4-1/2 fathom sounding in lat. 40°29.6', long. 124° 28.7' falling in depths of 10-1/4 to 15 fathoms on H-6406(1937). Cleared with a 21 foot effective depth.
- (16) A 7-3/4 fathom sounding in lat. 40°29.7', long. 124° 28.6' falling in depths of 13 to 16 fathoms on H-6406 (1937). Cleared with a 34 foot effective depth.
- (17) A 5-4/6 fathom grounding in lat. 40°29.6', long. 124° 28.5' falling in depths of 17 to 18 fathoms on H-6406 (1937). Cleared with a 34 foot effective depth.
- (18) A 10-3/4 fathom sounding in lat. 40°29.7', long. 124° 28.3' falling in depths of 14 to 17 fathoms on H-6406

- (1937). Cleared with a 53 foot effective depth.
- (19) A 7-1/4 fathom sounding in lat. 40°27.0', long. 124° 28.7' falling in depths of 19 to 23 fathoms on H-6406 (1937). Cleared with a 35 foot effective depth.
- (20) A 5-5/8 fathom grounding in lat. 40°27.0', long. 124° 28.5' falling in depths of 18 to 21 fathoms on H-6406 (1937). Cleared with a 24 foot effective depth.
- (21) An 8-3/4 fathom sounding in lat. 40°27.0', long. 124° 28.3' falling in depths of 13 to 17 fathoms on H-6406 (1937). Not cleared.
- (22) A 4 fathom sounding in lat. 40°27.0', long. 124°28.2' falling between 14 fathoms and the edge of the breaker area on H-6406 (1937). Not cleared.
- (23) A 1-4/6 fathom sounding in lat. 40°26.5', long. 124° 27.9' falling in depths of 12 to 14 fathoms on H-6406 (1937). Drag strip not plotted. Not cleared.
- (24) A 3-4/6 fathom sounding in lat. 40°26.2', long. 124° 28.2' falling in depths of 16 to 18 fathoms on H-6406 (1937). Drag strip not plotted. Not cleared.
- (25) An 11 fathom grounding in lat. 40°24.4', long. 124° 27.5' falling in depths of 29 to 31 fathoms on H-6221 (1936-37). Cleared with a 61 foot effective depth.
- (26) A 7-1/4 fathom sounding in lat. 40°23.9', long. 124° 25.5' falling in depths of 9 to 14 fathoms on H-6407 (1937-38). Cleared with a 41 foot effective depth.

b. Splits and insufficient overlaps.

There are two very small splits; one in lat. 40°30.2', long. 124°30.5' falling in 26 fathoms on H-6406 (1937); the other in lat. 40°27.0', long. 124°28.3' falling in 13 to 17 fathoms on H-6406. Both are within 100 meters of the limits of the survey. A much larger split in lat. 40°25.5', long. 124° 27.5' is covered by the work on H-6409 (1937-38) W.D. A small area of insufficient overlap in lat. 40°29.0', long. 124°26.5' falls in depths of 17 fathoms on H-6415 (1937-38). The limiting lines are fairly straight and additional strips are not considered necessary.

4. Comparison with Latest Hydrographic Surveys.

- a. H-6221(1936-37), H-6222(1936-37), H-6406(1937), H-6407
(1937-38), H-6415(1937-38).

Three depths of 9-3/4, 10-1/4 and 10-3/4 fathoms in approximate lat. 40°29.2', long. 124°29.1' on H-6406(1937) conflict with effective drag depths of 65 and 66 feet on the present survey. It is possible that the soundings were obtained in the trough of a swell and that the drag slipped over them on a crest (see descriptive report, page 4, par. 26). Shortly after passing the position of the 9-3/4, the drag strip ended and positions taken at groundings along the wire preclude the possibility that the drag was also stretched back of the 9-3/4. No changes have been made in either survey. There are no further conflicts with H-6406(1937) and none with the other surveys listed above.

- b. H-Field No. 1 (1938).

Comparison will be made with this survey when it is received from the field.

5. Comparison with Chart 5795 (New Print dated Aug. 1, 1938).

Shoals discovered on the present survey have already been charted from advance information furnished by the field party and should be revised to agree with the verified results. The sunken wreck charted in lat. 40°28.9', long. 124°28.5' originates with Chart Letter 250 of 1921. It is the wreck of the S. S. Alaska and at the time it was reported its masts were showing above water. The charted position was cleared with a 62 foot effective depth but the drag grounded about 200 meters to the north with an effective depth of 35 feet (par. 3a(20), this review). No sounding was obtained and there is nothing in the drag records to indicate the nature of the obstruction which was later cleared with an effective depth of 24 feet. It is recommended that the sunken wreck symbol be retained on the chart but moved to the position of the 5-5/6 fathom grounding.

6. General Conformity with Hydrographic Manual and S.P. 118.

- a. The drag volumes are neat and legible.
- b. The descriptive report is somewhat involved because each year's work has been discussed separately.
- c. The field plotting was very good.
- d. Considering the rocky nature of the area and the large number of groundings, the effective depths are in satisfactory relation to the bottom depths.

7. Compliance with Instructions for the Project.

The survey satisfies the instructions for the project except as noted in the following paragraph.

8. Additional Field Work Recommended.

The following additional work is desirable but not essential:

- a. An additional strip to cover the U-shaped gap between strips and the small split to the north of the 9-1/2 fathom shoal in lat. 40°29.9', long. 124°30.5'. The shoal is close to the offshore limits of the dragged area.
- b. Clear the 5-5/8 fathom grounding in lat. 40°27.0', long. 124°28.5' with the maximum effective depth practicable and determine the nature of the obstruction (see par. 3a (20) and 5, this review). If possible, reduce the limits of the undragged area just north of Blunts Reef.

9. Reviewed by - J. A. McCormick, Feb. 17, 1938.

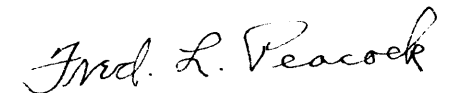
Inspected by - E. P. Ellis.

Examined and approved:




T. B. Reed,
Chief, Section of Field Records

K. T. Adams
Chief, Division of Charts.



Fred. L. Peacock
Chief, Section of Field Work.



G. H. de
Chief, Division of H. & T.

chart 5602
Applied to Lith. Proof for 1939 on Apr. 21, 1939 by J. Walkey

Verifier's Report on H-6408 (1937-38) W.D.

The verification and review of this survey were both accomplished by the undersigned. All pertinent comment is contained in the review.

J. A. McCormick.

Applied to ChA 5795. June 1939 - D.V.S.G.