

WIRE DRAG

6153

6153

~~[Also Addl Wk 1937 For Which See D.R. of Notes (Addl Wk 1937)]~~

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WIRE DRAG
6153

Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R. S. Patton Director

State: California

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DESCRIPTIVE REPORT

WIRE DRAG
~~Topographic~~
~~Hydrographic~~ } Sheet No. 10

LOCALITY
California
~~Northern Coast of California~~
Pt. No Pass to
~~Lat. 52-56.5 N to Pt. Delgada~~

193 6

CHIEF OF PARTY
F. H. Hardy

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

WIRE DRAG
~~XXXXXXXXXXXX~~ 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. 10

REGISTER NO. H6153 W.D.

State California

Northern California Coast

General locality ~~Shelton Cove, California~~

Pt. No Pass

Locality 39° 56.8' N to Pt. Delgada

Scale 1:10,000 Date of survey July - August, 19236

Vessel GUIDE

Chief of Party F. H. Hardy

Surveyed by I. E. Rittenburg

Protracted by W. J. Chovan

Soundings penciled by W. J. Chovan

Soundings in fathoms feet Effective Depths in Feet.

Plane of reference M.L.L.W.

Subdivision of wire dragged areas by W. J. Chovan

Inked by W. J. Chovan

Verified by J. A. Mc Cormick

from Chief, Div.

Instructions dated May 31, 1934 & Letter H.&T. Jan. 21, 19236

Remarks: Dual Control-Visual Fixes using Chartered Launches

VIRGINIA and CAPON.

560 3-7

DESCRIPTIVE REPORT
to accompany
WIRE DRAG SHEET FIELD NO. 10
Project No. HT-206
U.S.C. & G.S.S. GUIDE
1936

INSTRUCTIONS: Instructions for this work were dated May 31, 1934 and in the third paragraph of a letter from the Chief, Division of Hydrography and Topography, dated January 21, 1936.

CHARACTER AND LIMITS OF WORK: This sheet covers that area in the vicinity of Shelter Cove, California, from Latitude $39^{\circ} 56.5'N$ to Point Delgada, and from about one-eighth to one-fourth mile offshore to about three miles offshore to include the shoalest portion of Tolo Bank. This sheet joins Wire Drag Sheet Field No. 9, 1936 on the south, Wire Drag Sheet Field No. 11, 1936 on the north, Wire Drag Sheet Field No. 4, 1935 on the northeast and Wire Drag Sheet Field No. 21, 1935 and 1936 on the west. There is quite an area of re-dragging of Sheet No. 4, 1935 and Sheet No. 21, 1935 and 1936 on this sheet as it was more economical to continue dragging when the drag was out than to end the line and set the drag out again. It is therefore recommended that in the final review of this sheet common areas on this sheet and sheets 4 and 21, 1935 this vessel, be considered together for clearances and effective depths as advantage was taken of deeper dragging on the 1935 sheets to obviate chance of unnecessary hanging up. There are also three large areas of apparent splits on this sheet which are covered on Sheet 4, 1935. These areas are between positions 33 and 38 E Day, covered by 42 feet on Sheet 4, 1935, around the Shelter Cove Buoy, and in Latitude $40^{\circ} 00'$, Longitude $124^{\circ} 04'$ by 39 - 42 feet on Sheet 4, 1935. To simplify this consideration of all the sheets involved an A. and D. overlay tracing of the area involved is submitted with this sheet. This tracing should not be used as the final A. and D. tracing.

The scale of this sheet is 1:10,000.

The position interval was five minutes practically throughout the sheet, except at beginning of lines and radical changes in course and speed.

Dual control and visual fixes were used throughout.

Effective depths range from 12 to 84 feet.

CONTROL AND DATUM: This sheet is on the final adjusted North American 1927 datum. Signals and shoreline were taken from topographic sheets D, E and F, 1935 of this vessel. The limits of these topographic sheets are shown in pencil along the north-eastern border of this sheet. The basic traingulation control was established in 1930. In this connection none of the topographic features shown were located or verified by this party and the shoreline and offlying rocks shown on this sheet should not be used as they are all taken from the three topographic sheets mentioned above.

DATES OF SURVEY: Seven day's work was done on this sheet from July 11 to August 11, 1936.

TIDAL REDUCERS: Tide reducers for this sheet were obtained from the records of a portable automatic tide gage at Shelter Cove, California. See attached Tidal Data Sheet for further information.

JUNCTIONS AND OVERLAPS: This sheet joins Wire Drag Sheet Field No. ^{H-6152}9, 1936 on the south and Wire Drag Sheet Field No. 11, 1936 on the north. The junctions are good as in most cases the lines continue from one sheet to the adjacent sheet. At Position 1, G Day, the end launch left angle was taken a few seconds late. This is the reason that this position (1-G, Sheet 10) does not exactly coincide with the corresponding position on Sheet ^{H-6152}9 (45-B Day). This sheet also joins Wire Drag Sheet Field No. 4, 1935, on the northeast and Wire Drag Sheet Field No. ^{H-6171}21, 1935 and 1936 on the west. These junctions are good. The junction with Sheet No. ^{H-6135}4, 1935 is shown on the accompanying overlay tracing in purple. The overlap of adjoining lines is sufficient in all cases, except in the area between positions 33 to 38 E Day. However, as has been said and noted in pencil on Sheet No. ^{H-6153}10, this area was covered by a 42 foot drag on Wire Drag Sheet Field No. ^{H-6135}4, 1935. At the overlap between the beginning of F Day and the end of E Day the beginning of the overlapping line (Pos. 5, F Day) is shown on the sheet as a normal bight rather than as a straight line. This is because the line actually began at Position 1, F Day. However, the end launch broke down at Position 2, F Day. The guide launch, to avoid a split, kept towing as slow as possible until Position 4, F Day when the line was ended. The two launches drifted for ten minutes more until the end launch was started. The bight was still normal and the line was resumed. Positions 1 to 4 F were not rejected and are plotted on the sheet so that this normal bight could be shown on the sheet as the usual straight line would show a split.

SPLITS: On this sheet there are three splits. However, on Sheet No. 4, 1935 two of these areas are covered and the third area is considerably reduced in size. See attached overlay sheet and the second paragraph of this report under "Character and Limits of Work" where these splits are fully discussed.

GROUNDINGS: At Position 6A the end launch grounded on the 3 2/6 fathom spot found in 1935 on Sheet No. 4. As this was covered by 16 feet on Sheet No. 4 no soundings were taken.

At Position 33D the end launch again grounded on the "less than 50 ft." spot found on Sheet No. 21, in 1935. This was covered on Sheet No. 4 with a 42 foot drag. There were two other groundings as listed below:

Pos.No. Letter Day	Latitude & Longitude	Grounded Least Eff. Depth	Least Sounding Depth	Cleared Eff. Depth	Depth Plotted	Remarks
	o ' "	Feet	Fms.	Feet	Fms.	
17 A	40 00.52 124 04.35	22	3 1/2	12	3 1/2	
17 A	40 00.75 124 04.40	22	3 5/6	12	3 5/6	A 2 ft. allowance for swell was made which makes it appear that least sdg. was not obtained.
<i>See Page 4, par. 1 for further discussion.</i>						
16 B	39 59.4 124 01.27	27	3 4/6	12	3 4/6	Found by hyd. 1935 as 3 5/6

MISCELLANEOUS: From positions 13 E to 27 E the effective depths of the buoys was being changed from a hookup of N-F = 66 feet to a hookup of F-6 = 47 feet, 5-N = 37 feet. Due to hydrographic considerations it was necessary to begin this hookup at the far buoy rather than at the near buoy as is the usual practice. This depth change ranged from 19 to 29 feet. As a 500 foot section was in use on E Day a maximum difference in depth between adjacent buoys of 12 feet was allowable, (2 1/2 % of 500 ft.). Therefore the drag strip was subdivided in accordance with Rule 2 on Page 37 of the Wire Drag Manual. This accounts for the areas of 59 feet, 61 feet and 49 feet effective depths between positions 13 E and 27 E since as soon as any one buoy was raised in accordance with the new hookup this 2 1/2 % consideration entered into the subdivision of the wire drag areas.

Between positions 24 and 31 B Day another change in depths greater than 2 1/2 % of length of section was made. In this case, however, the drag areas were not subdivided in accordance with Rule 2 on Page 37 of the Wire Drag Manual but as a factor of safety the 12 foot effective depth was carried until the last buoy affected was changed. This resulted in shoaler effective depths being shown on the sheet for a relatively small area.

At Position 17 A the drag grounded in several places, as shown on the sheet. The effective depth plotted on the sheet in the area of groundings is 22 feet while the least depth found at one of the groundings is 23 feet at Position 4 A of the Tender record. This apparently shows that the least depth was not found as the effective depth is less than the sounding obtained. However, by referring to the records it is seen that a 2 foot allowance was made for the swell. If it is true that on the top of the swells this allowance should be made thereby reducing a 24 foot drag to 22 feet, it should likewise be true that on the bottom of the swells the effective depth is deepened a corresponding amount, which increases the depth of drag from 24 feet to 26 feet.

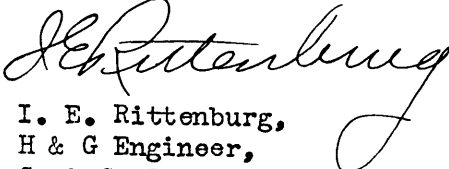
COMPARISON WITH CHART AND HYDROGRAPHIC SHEETS:

The least depth charted on Tolo Bank, Chart 5602 is 7 fathoms. This comes from the 7 3/4 fathom sounding on Sheets ~~HL469, 1880 and HL778, 1885 and 1886.~~ This was covered on this sheet (E Day) with a least depth of 47 feet but was covered by 49 feet on Wire Drag Sheet No. ^{H-6171} 21, 1935-36. It is therefore recommended it be expunged from the charts. Sec Rev. par. 6a (1) Sd retained pending Ad. wk.

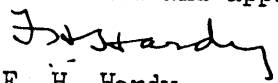
There are no other soundings on either Chart 5602 or hydrographic sheets HL469, and H 1778 shoaler than the dragged depths on this sheet. However, there are ^{H-6135} 8 soundings on the old sheets shoaler than the dragged depths on Sheet 4 in the area about 1 mile south and southwest of Point Delgada. These are shown on the boat sheet circled in purple ink. This is due either to misplacement of soundings on the old sheet or changes in the area. } Sec Rev. par. 6a (2) *

PERSONNEL AND EQUIPMENT: Lieutenant I. E. Rittenburg was in charge of this work and in charge of the guide launch. Lieutenant Walter J. Chovan was in charge of the end launch. Chartered Launch VIRGINIA was used as guide launch and Chartered Launch CAPON as end launch. Standard wire drag equipment was used.

Respectfully submitted,


I. E. Rittenburg,
H & G Engineer,
C. & G. Survey.

Forwarded and approved:


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

* These 8 soundings are considered in the review of H-6135(1935)W.D. (par. 7b (1) and 7b (3)), H.M.P.M.

STATEMENT
to accompany
WIRE DRAG SHEET FIELD NO. 10
1936

The plotting and protracting of buoy positions
was done by Lieutenant (j.g.) Walter J. Chovan.

The drag areas were subdivided and inked by
Lieutenant (j.g.) Walter J. Chovan.

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
to accompany
WIRE DRAG SHEET FIELD NO. 10
1936

Date 1936	Day Letter	Volume	Statute Miles	Positions	Drag Length Feet	TENDER	
						Soundings	Positions
July 11	A	1	3.0	18	5,200	4	4
13	B	1	7.0	42	4,800	1	1
17	C	1	1.8	11	5,000		
28	D	1	5.7	32	10,000		
29	E	1	7.0	43	10,000		
Aug. 9	F	1	2.1	16	10,000		
11	G	1	0.7	5	8,000		
TOTALS			27.3	167		5	5

AREA 23.5 SQUARE STATUTE MILES.

TIDE NOTE FOR HYDROGRAPHIC SHEET

February 23, 1937.

Division of Hydrography and Topography:

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

Tide Reducers are approved in
3 volumes of sounding ^{and wire drag} records for

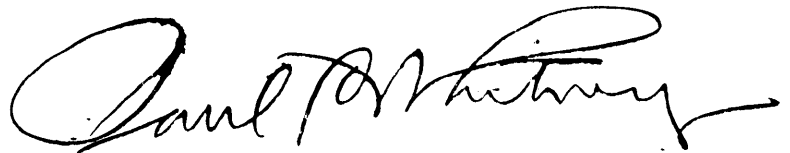
HYDROGRAPHIC SHEET 6153

Locality Point No Pass to Pass Delgada, Northern Calif.

Chief of Party: F. H. Hardy in 1936
Plane of reference is mean lower low water reading
2.9 ft. on tide staff at Shelter Cove
7.1 ft. below B.M. 1A

Height of mean high water above plane of reference is 5.6 feet.

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents.

GEOGRAPHIC NAMES

Survey No. H-6153-W. D.

Name on Survey	On Chart No. 5602		On previous survey No. T-1285 T-1236		From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List		
	A	B	C	D							E
<u>Needle Rock</u>	✓ app'd	✓									1
<u>Point Delgada</u>	✓ app'd	✓									2
<u>Point No Pass</u>	✓ app'd	✓									3
<u>California</u>	✓										4
<u>Pacific Ocean</u>											5
											6
											7
											8
											9
											10
											11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
Names underlined in red approved										26	
by <u>JJE</u> on 2/24/37										27	

Remarks

Decisions

	Remarks	Decisions
1		<i>See T-6485, T-6486</i>
2		" "
3		" "
4		
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27		

Field Records Section (Charts).

HYDROGRAPHIC SHEET NO. **H6153 W.D.**

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

Number of positions on sheet	...147
Number of positions checked8
Number of positions revised0
Number of soundings recorded5
Number of soundings revised0
Number of signals erroneously plotted or transferred0

Date: *March 2, 1937*

Verification by *J.A. Mc Cormick*

Time: *6 hr.*

Review by *Harold W. Murray*

Time: *3 1/2 "*

HYDROGRAPHIC SURVEY NO. H-6153-W. D.

Smooth Sheet Yes

Boat Sheet Two, one A + D sheet

Sounding Records 3 Vols. _____

Descriptive Report Yes

Title Sheet Yes

List of Signals Yes

Landmarks for Charts (Form 567) Yes

Statistics Yes

Approved by Chief of Party Yes

Recoverable Station Cards (Form 524) No

Special Chart for Lighthouse Service No
(Circular Nov. 30, 1933)

Remarks _____

~~HYDROGRAPHY~~
~~Total Days~~ Seven Days
~~Last Date~~ August 11, 1935

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
 DESCRIPTIVE REPORT
~~PHOTO STAT OF~~

} No. H -6153-W. D.
~~No. 10~~

{ received Feb. 11, 1937
 registered Feb. 12, 1937
 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	C. K. Green
----	-------------



Verrier's Report on H-6153 (1936) Wire Drag.

Records:

Records are satisfactory. ✓

Drafting:

Drafting is excellent. ✓

Control:

Shoreline and Topographic signals originate with T-6485 (1935), 1:10,000; T-6486 (1935), 1:10,000; ✓
and T-Field Letter F (1935) which has not been received in this office.

Junctions:

This sheet is joined on the south by H-6152 (1936) Wire Drag. It covers most of the area covered by the wire drag shown on H-6135 (1935-36). It is joined on the north by H-Field No. 11 (1936) and on the northwest by H-Field No. 21 (1935). Neither of the last two sheets has been received in this office. ✓
These sheets have now been received and are noted in the review by their respective Registrars. H.W.M.

Groundings:

Shoal soundings obtained were transferred to H-6135. ✓

The $9\frac{3}{4}$ fathom grounding at pos. 33D Lat. 39-59.9, Long. 124-04.4 could be shown no other way until the missing Field Sheet 21 arrives in the office. A vague note in the record mentions a grounding with less than fifty feet on it. ✓
This Sheet 21 is evidently the authority for the statement.

March 2, 1937.

Submitted,
J.A. McCormick

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 6153 (1936) W.D. FIELD NO. 10.

Point No Pass to Point Delgada, Northern California Coast, California
Surveyed in July-August 1936 Scale 1-10,000
Instructions dated May 31, 1934 (Guide) and Letter dated Jan. 21, 1936
(F. H. HARDY)

Wire Drag

Dual Control on Shore Signals

Chief of Party - F. H. Hardy
Surveyed by - I. E. Rittenburg
Protracted by - W. J. Chovan
Subdivision of wire dragged areas by - W. J. Chovan
Inked by - W. J. Chovan
Verified by - J. A. McCormick

1. Condition of Records.

The records are neat, legible and conform to the requirements of the Hydrographic Manual and Special Publication No. 118.

The "Descriptive Report" is exceptionally clear and comprehensive and satisfactorily covers all items of importance.

2. Compliance with Instructions for the Project.

The plan, character and extent of the survey comply with the instructions for the project except for insufficient clearance depths over some of the shoals found. (See par. 9 of this review). The survey as a whole is well executed, such matters as overlaps, proper speed, determination of lift and critical soundings on charts and previous surveys having been given careful consideration.

3. Shoreline and Signals.

The shoreline and offlying detail as well as the signals originate with T-6485 (1935), T-6486 (1935) and topographic sheet Field No. "F" (1935). The latter sheet has not as yet been received in this office.

4. Junctions with Contemporary Wire Drag Surveys.

- a. The junction on the southeastward with H-6152 (1936) W. D. is satisfactory. One of the drag strips is continuous from one sheet to the other.
- b. The junctions to the west and northwestward with H-6171 (1935-36) W.D. and H-6168 (1936) W.D. respectively will be considered in the reviews of those sheets.
- c. The junction in the vicinity of lat. $40^{\circ}-00.5'$, long. $124^{\circ}-03.3'$ with H-6135 (1935) W.D. is satisfactory. The area common to the two surveys is extensive and is discussed in detail in the Descriptive Report (page 1, par. 2).

5. Comparison with latest Hydrographic Surveys.a. H-6135(1935-36), H-5956(1935) and H-6138(1935-36).

The present survey covers portions of the above 1 to 10,000 to 1 to 40,000 scale surveys. The effective drag depths are consistent with the depths shown.

Comparison with H-6161(1936) on the northeast will be considered in the review of that survey.

6. Comparison with Charts No. 5602 (New Print dated Aug. 6, 1936) and 5773 (New Print dated Aug. 28, 1935).a. Hydrography.

These charts contain no soundings that conflict with the effective drag depths except the following which are shown on chart 5602:

- (1). The 7 fm. sounding in lat. $39^{\circ}58.3'$, long. $124^{\circ}04.0'$ originates with H-1778(1885-86). This sounding (actually 44.7 feet) falls close to a 10 fm. shoal on H-6138 (1935-36), a $9\frac{3}{4}$ fm. depth on H-6171 (1935-36) and was cleared by effective depths of 47 feet on the present survey and 49 feet on H-6171(1935-36) W.D. This difference between the maximum effective depth of 49 feet and the least depth of $9\frac{3}{4}$ fms. (58 feet) found on H-6171(1935-36) is too great for a shoal on which 44.7 feet was formerly found. Additional drag work is therefore recommended on this shoal. (See par. 9b, this review.) Pending this additional work the 44.7 foot sounding ($7\frac{1}{2}$ fms.) is being carried forward to H-6138(1935-36) and will be finally disposed of when such additional work is accomplished. (For additional details on 7 fm. sounding, see Rev. H-6138 (1935-36), par. 7b(1)(b)).

Disproved. See
Rev., par. 3
H-6171(1938)
WD-Ad. wk.
H.W.M. 9/13/38

- (2). The 9 fm. sounding (source uncertain) in lat. $39^{\circ}59.8'$, long. $124^{\circ}03.7'$ which falls close to a 13 fm. sounding in general depths of 15 to 16 fms. on H-6135(1935-36) W. D. was cleared by a 59 foot drag on the present survey and is considered disproved. (See Review of that sheet, par. 8a for detailed discussion).

b. Aids to Navigation.

The lighted whistle buoy in lat. $40^{\circ}00.3'$, long. $124^{\circ}04.8'$ was transferred from H-6135(1935-36) W. D. to show the reason for the split in this area. (See par. 8c(1), this review).

7. Field Plotting.

Field protracting, plotting and subdivision of dragged areas were exceptionally well done.

8. Results of Survey.a. Shoals discovered and clearance depths obtained.

- (1). The shoal with least depth of $3 \frac{5}{6}$ fms. falling in general depths of 4 to $9 \frac{1}{4}$ fms. on H-6133(1935-36) W.D. in lat. $40^{\circ}00.75'$, long. $124^{\circ}04.4'$ was cleared by a 12 foot drag. (See par. 9a of this review for recommended additional work). | cleared by 16' on H-6135
Ad. wk. (1937)
- (2). A $3 \frac{1}{2}$ fm. sounding in lat. $40^{\circ}00.5'$, long. $124^{\circ}04.3'$ falls in general depths of $7 \frac{3}{4}$ to $10 \frac{3}{4}$ fms. on H-6135(1935-36) W.D. and was cleared by a 12 foot drag. (See par. 9a of this review for recommended additional work). | cleared by
16 feet on
H-6135(1937)
Ad. wk.
- (3). A grounding on a rock in lat. $40^{\circ}00.2'$, long. $124^{\circ}04.1'$ was not investigated as this was accomplished on H-6135 (1935) W.D., a least depth of $3 \frac{2}{6}$ fms. being obtained which was transferred to the present survey. This rock was cleared by a 16 foot drag on H-6135(1935-36). W.D.
- (4). A grounding of $9 \frac{3}{4}$ fms. in lat. $39^{\circ}59.9'$, long. $124^{\circ}04.4'$ falls in depths of $10 \frac{1}{2}$ to 14 fms. on H-6135(1935-36) W.D. This is referred to in the Descriptive Report of the present survey (page 3, par. 3) as a "less than 50 foot" spot found on H-6171(1935-36) W.D. which was cleared by a 42 foot drag on H-6135(1935-36) W.D. This grounding will be considered in more detail in the review of H-6171(1935-36) W.D. 84 fm. g'd shown
instead, see
Rev. H-6171
(1936)
- (5). A rock with least depth of $3 \frac{4}{6}$ fm. in lat. $39^{\circ}59.4'$, long. $124^{\circ}01.3'$ falls in depths of $7 \frac{1}{2}$ fms. and close to a $3 \frac{5}{6}$ fm. sounding on H-6135(1935) W. D. It was cleared by a 12 foot drag. This rock lies fairly close inshore.

b. Effective Depths.

The effective depths of the various drag strips considered in conjunction with those of H-6135(1935-36) W.D. are sufficient to insure safety to surface navigation approximately $\frac{1}{2}$ mile offshore except in those areas in which additional work is called for. (See par. 9 of this review).

c. Splits and insufficient overlaps.

- (1). A split exists in lat. $40^{\circ}00.3'$, long. $124^{\circ}04.8'$ because of the navigational buoy shown here. The extent of the split is considerably reduced on H-6135(1935-36) W.D. which survey shows closely developed depths of 12 to 13 fms. in this area.
- (2). A small split exists at the offshore limit of the present survey in lat. $39^{\circ}59.0'$, long. $124^{\circ}05.6'$. It falls in depths of 24 to 29 fms. on H-6138(1935-36).

- (3). The split in lat. $40^{\circ}00.0'$, long. $124^{\circ}04.0'$ falls in depths of $8\frac{3}{4}$ to 16 fms. on H-6135(1935-36) W. D. and is covered by a drag strip with depths varying from 39 to 42 feet on that survey.
- (4). The small overlap in lat. $39^{\circ}59.7'$, long. $124^{\circ}04.2'$ was covered by a 42 foot drag on H-6135(1935-36) W.D.

9. Additional Field Work Recommended.

In order to complete the area covered by the present survey the following additional work is required:

- a. The $3\frac{1}{2}$ fm. sounding lat. $40^{\circ}00.5'$, long. $124^{\circ}04.3'$, and the $3\frac{5}{6}$ fms. lat. $40^{\circ}00.75'$, long. $124^{\circ}04.4'$ which were covered by a 12 foot drag should be cleared by a deeper drag. The clearance depth of 12 feet over these shoals is not a sufficient assurance to small steamers using this locality. When these shoal spots are covered, the drag work should extend northward so as to cover the 12 and 19 foot drag strips on the present survey with a depth more commensurate with the general depths shown on H-6135(1935-36) and H-6161(1936). Sd's cleared by 16 feet on H-6135 Ad.wk. (1937)
- b. The vicinity of the charted 7 fm. sounding in lat. $39^{\circ}58.3'$, long. $124^{\circ}04.0'$ discussed in paragraph 6a(1) of this review should be redragged to an effective depth within 3 or 4 feet of the least depth of $9\frac{3}{4}$ fm. (58 feet) obtained on this shoal on H-6171 (1935-36). See Par. 3e, Rev. H-6135(1937) Ad.wk.
- c. See Review (par. 9a) of H-6171(1935-36) regarding additional work over 37 foot drag strip in approximate latitude $39^{\circ}59'$, longitude $124^{\circ}04'$. Disproved. See Rev. par. 3 H-6171(1938)WD-Ad.wk. H.W.M. 9/13/38
10. Reviewed by - Harold W. Murray, March 9, 1937.

Inspected by - A. L. Shalowitz.

Examined and approved:

C. K. Green.
C. K. Green,
Chief, Section of Field Records.

K. T. Adams
Acting Chief, Division of Charts.

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

Stude
Chief, Division of H. & T.