

5114

Diag. Ch't. No. 6102-1 & 6002-2

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey *Hydrographic*
Field No. Office No. *5114*

LOCALITY

State *Washington*
General locality *Pacific Coast*
Locality *Seaton*

1943

CHIEF OF PARTY

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DATE

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Form 504
Ed. June, 1928

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

State: WASHINGTON

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. 121 **5114**
Hydrographic }

LOCALITY

~~OFF SHORE, WASHINGTON COAST~~

~~CAPE ELIZABETH TO TATOOSH ISLAND~~

Pacific Coast

Sealion Rk. to Cape Flattery -
Off Shore _____

1930

CHIEF OF PARTY

K. T. Adams, H & G Engineer, C & G S

U. S. COAST & GEODETIC SURVEY
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Acc. No. _____

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DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 5114

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. 121

REGISTER NO. 5114

State Washington

General locality ~~Off Shore~~ Pacific Coast

Locality Sealion Rk. to Cape Flattery - Offshore
~~Cape Elizabeth to Tatocsh Island~~

Scale 1:120,000 Date of survey 7/16 - 10/10, 1930

Vessel G U I D E

Chief of Party K. T. Adams

Surveyed by K. T. Adams

Protracted by H. A. Karo

Soundings penciled by H. J. Healy & J. C. Mathisson

Soundings in fathoms feet

Plane of reference M L L W

Subdivision of wire dragged areas by ---

Inked by

Verified by

Instructions dated April 16,, 1930

Remarks:

DESCRIPTIVE REPORT
to accompany
HYDROGRAPHIC SHEET NO. 121
Washington Coast

DATE OF INSTRUCTIONS: Work executed on this sheet was done in compliance with instructions for Project No. 159, dated April 16, 1930.

SCALE AND LIMITS: The scale of the sheet is 1:120,000 and the work extends from the 1927 work of the Steamer GUIDE, northwest to about Latitude $48^{\circ} 20'$, and from a junction with the inshore 40,000 scale sheets offshore to the 1000 fathom curve.

CONTROL: The principle control used on this sheet was radio acoustic ranging. Visual fix control, on 40,000 scale sheets, was carried about 10 miles offshore, which was considered about the limit. However, during certain spells of unusually clear weather it was possible to carry shore objects much farther and the R. A. R. work will be found supplemented by fixed position work. This will be found especially true in two areas, the inshore portion of the southern part of the sheet just off Destruction Island and offshore from White Rock.

It will be noticed that the R. A. R. work is roughly divided into two areas, at about Longitude $125^{\circ} 50'$. This was advisable for three reasons, first- work was done on the boat sheet in two sections (A and B); second- the spacing of the lines changes at this point; and third- when shore parties were operated from the ship it was impossible to run to the 1000 fathom curve and return in one working day.

In general then, the offshore work was done at convenient times, and when good weather was predominant, by running to the offshore area and working there all day, drifting throughout the night.

FATHOMETER: The Fathometer was used throughout to take soundings, supplemented by the necessary number of vertical casts. The Fathometer was read by an officer, red light was carried on an average to about 400 fathoms, beyond which depth white light was used. No use whatsoever was made of the new co-incidence method. At times red light times six was used, in other words the automatic red light return was used on a long signal and slow speed. At times it was possible to use this up to 700 or 800 fathoms but it was generally necessary to keep check on it by the white light.

CORRECTIONS TO FATHOMETER SOUNDINGS: Fathometer soundings were corrected throughout all the depths for the velocity of sound and the sheet was examined for slope corrections by the latest approved method.

RADIO ACOUSTIC RANGING: At the beginning of the season the weather was unusually good for visual control and this type of control was advanced to the exclusion of work done by R. A. R. However, one R. A. R. station was installed on June 5th at Destruction Island, with which experiments were made to determine its reliability. It was not until the hydrophones had

been moved twice that the station worked satisfactorily. On July 10th a station was established off James Island and these two stations only were used on the southeastern part of the area. On October 2nd a third station was established on Tatoosh Island and from thence till the end of the season these three stations were maintained.

In general I think reasonably good results were obtained from this type of control. Quite often returns were received from only two stations, but it is especially notable that in the area farthest offshore, when large cast iron bombs were fired, the results were very gratifying. In the large portion of the area returns from all three stations were received with regularity.

During the season various forms of trouble were encountered of course, and these will be found discussed in a separate report attached to this descriptive report.

VELOCITY OF SOUND: Throughout the season various tests to determine the velocity of sound were made, a tabulation of which will also be found attached to this report. It must be taken into consideration that these tests were necessarily made fairly close inshore with the path of the sound more or less parallel to the shore line and in comparatively shallow depths. The average for all of these tests was about 1476 meters per second and inasmuch as they showed no conclusive evidence of change as the season progressed this figure was used for all inshore R. A. R. determinations.

In order to determine the velocity of sound in offshore areas various positions in which three returns were obtained were used graphically to determine the average velocity for this area. In all about 30 of these positions were graphically determined, the results of which will be found on the boat sheet in red crayon figures near the position.

The velocities actually used in plotting the smooth sheet were as follows: For the area coming within the limits of Boat Sheet A, 1476 was used. For the area within the limits of Boat Sheet B velocity 1473 was used, outside of 900 fathoms, and inside of 900 fathoms 1474.5 was used.

BOAT SHEETS: Two boat sheets, A and B, were used in this area, although all work was plotted on one smooth sheet. It was considered, at the beginning of the season, impracticable to put the entire area on one sheet. The velocity used for the construction of the circles on Boat Sheet A was 1477.5, whereas the velocity used for the construction of the circles on Boat Sheet B was 1472. On the boat sheet will be found, indicated in green ink with the depth encircled, the vertical casts which were taken in this area.

METHOD OF PLOTTING: In plotting this sheet all R. A. R. positions were plotted first. The dead reckoning was then plotted on tracing paper and fitted to the R. A. R. positions. From this dead reckoning it was possible to determine what positions were incorrect in the case of a lag in the operation of the shore stations due either to hand manipulation by the operators, by strays, or by any other causes. After the incorrect bomb

positions were eliminated the dead reckoning was then fitted to the correct bomb positions and plotted on the smooth sheet. ✓

In some cases, especially in depths of less than 100 fathoms, soundings were obtained more often than could be conveniently shown on the smooth sheet, in which cases every other sounding was put on the smooth sheet. ✓

K. T. Adams

K. T. Adams,
H & G Engineer
Chief of Party

STATISTICS.
Sheet No. 121.

DATE	Day	SOUNDINGS		VC	Statute Miles	No. of Positions	Vol
		Red Light	White Light				
7/16/30	A	209		4	57.5	58	1
7/18/30	B	325	3	2	107.1	143	1
7/20/30	C	283		1	91.4	69	1
7/22/30	D	346		2	109.8	89	1
7/23/30	E	59			17.8	14	1
7/23/30	E	309			96.2	85	2
Sub-Total		1,569	3	9	479.8	458	
8/5/30	F	331		1	78.3	72	2
8/6/30	G	175		1	34.5	49	2
8/12/30	H	329		1	97.7	60	2
8/13/30	J	394		3	115.5	75	2-3
8/15/30	K	78		1	19.0	20	3
8/19/30	L	46			9.0	10	3
8/25/30	M	272	138	2	132.0	82	3
8/26/30	N	427	8	1	154.5	52	3
8/27/30	P	279		2	95.5	48	3-4
Sub-Total		2,331	146	12	738.0	468	
66 9/3/30	Q	388	1	3	129.0	80	4
9/4/30	R	410		2	127.1	95	4
9/5/30	S	222			60.4	39	4
9/7/30	T	453		3	120.8	88	4
9/9/30	U	345		2	94.1	70	4-5
9/10/30	V	269		4	56.4	41	5
9/18/30	W	384		1	93.2	62	5
9/19/30	X	218			65.6	52	5
9/20/30	Y	348	18		153.0	66	5
9/21/30	Z	350	7		113.7	51	5-6
SUB- Total		3,387	26	15	1,013.3	644	
9/23/30	AA	265		1	77.0	51	6
9/25/30	BB	141		1	33.2	33	6
9/29/30	CC	273			32.2	49	6
10/8/30	DD	327		1	65.2	50	6
10/9/30	EE	370	14	1	115.8	64	6
10/10/30	FF	173			54.6	31	6-7
TOTAL		1,549	14	4	378.0	278	
TOTAL		8,836	189	40	2,607.1	1,848	

TEMPERATURE AND SALINITY DATA.

Temperature and salinity data was forwarded to the Office the first week of November, 1930.

Fathometer Velocity Corrections

Sheet No. 121

DEPTH	REDUCER	DEPTH	REDUCER
0-6.5 Fms	0.0 Fms	412-468	7.0
6.5-31.0	0.1	468-526	8.0
31.0-39.0	0.2	526-582	9.0
39.0-46.5	0.3	582-627	10.0
46.5-54.5	0.4	627-670	11.0
54.5-62.0	0.5	670-712	12.0
62.0-70.0	0.6	712-755	13.0
70.0-77.5	0.7	755-800	14.0
77.5-85.0	0.8	800-840	15.0
85.0-92.0	0.9	840-882	16.0
92.0-100.0	1.0	882-925	17.0
100.0-109.5	1.1	925-968	18.0
109.5-117.5	1.2	968-1008	19.0
117.5-125.0	1.3	1008-1052	20.0
125.0-132.0	1.4	1052-1090	21.0
132.0-140.0	1.5	1090-1125	22.0
140.0-147	1.6	1125-1162	23.0
147-154	1.7	1162-1210	24.0
154-161	1.8		
161-168	1.9		
168-186	2.0		
186-244	3.0		
244-300	4.0		
300-355	5.0		
355-412	6.0		

VERIFICATION REPORT
to accompany
Hydrographic Sheet No.121
Washington Coast.

This will certify that I have examined the completed smooth sheet and records and hereby approve same. The field work was done under my constant supervision and the officers with most experience at this type of work were in charge of the plotting and the instructions to the bridge.

KTA/h

K.T. Adams

K. T. Adams,
Commanding,
Steamer GUIDE,
Chief of Party

DATA FOR COMPUTING INDEX CORRECTIONS

June 3, to October 11, 1930

Date	Fathometer	Temp. and Salinity Correction	Corr. Fath.	VC	VC	Fathometer	Remarks
6/3	12.8	0.1	12.7	13.3 N	+0.6 R		
	12.6	0.1	12.5	13.3 S	+0.8 R		
	13.0	0.1	12.9	13.0 S	+0.1		
	12.6	0.1	12.5	13.3 S	+0.8 R		
	12.7	0.1	12.6	12.8 S	+0.2		
	12.6	0.1	12.5	12.8 S	+0.3		
	12.8	0.1	12.7	12.8 S	+0.1		
	12.8	0.1	12.7	13.0 S	+0.3		
	15.3	0.1	15.2	15.3 VC	+0.1		
6/8	15.2	0.1	15.1	15.2 S	+0.1		
	15.3	0.1	15.2	15.5 S	+0.3		
	15.5	0.1	15.4	15.3 S		-0.1	
	15.5	0.1	15.4	15.8 S	+0.4		
	15.5	0.1	15.4	15.2 S		-0.2	
	15.2	0.1	15.1	15.0 S		-0.1	
	15.6	0.1	15.5	16.7 NG	+1.2 R		
	16.0	0.1	15.9	15.8 S		-0.1	
	15.5	0.1	15.4	15.8 S	+0.4		
	15.8	0.1	15.7	15.8 S	+0.1		
	15.5	0.1	15.4	15.3 S		-0.1	
6/11	15.2	0.1	15.1	15.3N	+0.2		
	15.5	0.1	15.4	16.0 N	+0.6 R		
	15.8	0.1	15.7	16.5 N	+0.8 R		
	16.2	0.1	16.1	17.0 N	+0.9 R		
	21.2	0.1	21.1	22.0 VC	+0.9 R		
	25.0	0.2	24.8	25.8 VC	+1.0 R		
	22.5	0.1	22.4	24.0 VC	+1.6 R		
	23.0	0.1	22.9	23.3 VC	+0.4		
	13.5	0.1	13.4	14.5 N	+1.1 R)		
	14.0	0.1	13.9	14.8 N	+0.9 R)		
	13.8	0.1	13.7	14.7 N	+1.0 R)		
	13.2	0.1	13.1	14.0 N	+0.9 R)		
	13.3	0.1	13.2	14.3 N	+1.1 R)		
	13.3	0.1	13.2	14.2 N	+1.0 R)		
	12.0	0.1	11.9	12.8 N	+0.9 R)		

Sdgs. rejected when on N'y course as hand lead work shows deep readings in all cases on Sheet 41.

VC's rejected evidently not up and down due to strong current.

Period 7:27 to 7:51 AM Record on slip in Vol #1 - 41

Prob. 1,40,000 sheet

B.F.

(Data for computing index corrections continued) - 2 -

Date	Fathometer	Temp. and Salinity Correction	Corr. Fath.	VC	VC	Fatho- meter	Remarks
6/12	16.0	0.1	15.9	16.5		+0.6	J
6/13	15.5	0.1	15.4	16.0	N	+0.6	
	14.5	0.1	14.4	16.0	N	+1.6	R
	15.0	0.1	14.9	15.0	N	+0.1	
	14.5	0.1	14.4	15.0	N	+0.6	
	25.0	0.2	24.8	26.1	VC	+1.3	R
6/14	17.2	0.1	17.1	18.3	N	+1.2	R
	17.2	0.1	17.1	17.2	N	+0.1	
	17.0	0.1	16.9	15.0	N		-1.9 R
	14.8	0.1	14.7	15.0	VC	+0.3	
6/15	28.5	0.2	28.3	28.5		+0.2	
	28.2	0.2	28.0	28.5	VC	+0.5	
6/17	12.4	0.1	12.3	13.5	N	+1.2	R
	12.6	0.1	12.5	13.0	N	+0.5	
	12.8	0.1	12.7	13.0	N	+0.3	
	22.2	0.1	22.1	23.0	VC	+0.9	R
	12.0	0.1	11.9	12.0	J	+0.1	
6/18	9.6	0.0	9.6	9.2	VC		-0.4
6/19	16.2	0.1	16.1	16.8	VC	+0.7	
	11.5	0.1	11.4	12.0	J	+0.6	
6/26	12.5	0.1	12.4	12.5	J	+0.1	
	531	8.0	523.0	523.5	VC	+0.5	
6/27	19.0	0.1	18.9	19.2	J	+0.3	
7/1	19.0	0.1	18.9	17.8	VC		-1.1 R
	21.8	0.1	21.7	21.3	VC		-0.4
	21.2	0.1	21.1	21.7	VC	+0.6	
	11.0	0.0	11.0	10.5	J	+0.5	
	15.8	0.1	15.7	16.0	VC	+0.3	
	30.0	0.2	29.8	29.8	VC	+0.0	
	13.0	0.1	12.9	12.5	J		-0.4
7/1	16.0	0.1	15.9	15.8	VC		-0.1
	30.0	0.3	29.7	29.8	VC	+0.1	
	12.2	0.0	12.2	12.7	VC	+0.5	
7/2				Use	-0.3		
7/3	18.0	0.1	17.9	17.5	VC		-0.4
	14.8	0.1	14.7	14.4	VC		-0.3
7/8	12.4	0.1	12.3	13.0	J	+0.7	R J
	10.8	0.0	10.8	11.2	VC	+0.4	
	39.7	0.4	39.3	39.8	VC	+0.3	
<i>7/8</i>	40.0	0.4	39.6	40.2	VC	+0.6	
7/9	16.5	0.1	16.4	16.3	J		-0.1
7/11	17.0	0.1	16.9	16.7	J		-0.3
	16.8	0.1	16.7	17.0	J	+0.3	
	17.0	0.1	16.9	16.8	J		-0.1
7/16	42.8	0.3	42.5	41.9	VC		-0.6
	45.0	0.3	44.7	44.5	VC		-0.2
	44.2	0.3	43.9	43.7	VC		-0.2
	45.2	0.3	44.9	45.0	VC	+0.1	
7/17	19.8	0.1	19.7	19.8	VC	+0.1	
	20.2	0.1	20.1	20.2	VC	+0.1	
	19.5	0.1	19.4	19.5	VC	+0.1	
	17.2	0.1	17.1	17.2	J	+0.1	
	12.5	0.1	12.4	13.0	S	+0.6	
	14.2	0.1	14.1	13.5			-0.6

(Data for computing index corrections continued) -3-

Date	Fathometer	Temp. and Salinity Correction	Corr. Fath.	VC	VC	Fatho- meter.	Remarks
7/18	17.8	0.1	17.7	18.0	J	+0.3	
	22.5	0.1	22.4	23.0	VC	+0.6	
	61.0	0.5	60.5	61.0	VC	+0.5	
	17.0	0.1	16.9	17.0	VC	+0.1	
	24.5	0.1	24.4	24.8	VC	+0.4	
7/19	16.1	0.1	16.0	15.5	J		-0.5
	17.8	0.1	17.7	17.5	VC		-0.2
7/20	63.0	0.6	62.4	63.0	VC	+0.6	0
7/22	282 (x6)	5.0	278.0	283.0	VC	+5.0	R
	535	9.0	526	526	VC	+0.0	
7/23	43.8	0.3	43.5	45.9	VC	+2.4	R
	94.2	1.0	93.2	94.8	VC	+1.6	R
7/24	32.8	0.2	32.6	32.8	VC	+0.1	
	12.0	0.1	11.9	11.5	J		-0.4
	18.2	0.1	18.1	18.3	VC	+0.2	
	16.3	0.1	16.2	15.8	VC		-0.4
7/30	16.8	0.1	16.7	16.8	VC	+0.1	
	19.0	0.1	18.9	19.0	J	+0.1	
	15.0	0.1	14.9	16.0	VC	+0.1	
	18.0	0.1	17.9	18.0	VC	+0.1	
	17.8	0.1	17.7	17.5	J		-0.2
7/31	34.2	0.2	34.0	34.3	VC	+0.3	
	46.8	0.4	46.4	47.0	VC	+0.6	
	20.0	0.1	19.9	19.8	J		-0.1
8/3		Use	0.2	on	8/3		
8/4	64.5	0.6	63.9	64.4	VC	+0.5	
	19.0	0.1	18.9	18.7	J		-0.2
8/5	18.5	0.1	18.4	18.2	J		-0.2
	18.2	0.1	18.1	18.1	J	+0.0	
8/6	16.1	0.1	16.0	16.0	J	+0.0	1-c 43
	26.0	0.1	25.9	26.3	VC	+0.4	
	78.0	0.8	77.2	77.0	VC	-0.2	
8/7	25.0	0.1	24.9	25.1	VC	+0.2	
	76.0	0.7	75.3	75.9	VC	+0.6	
	33.6	0.2	33.4	33.7	VC	+0.3	
	25.4	0.1	25.3	25.4	VC	+0.1	
8/12	40.2	0.3	39.9	40.2	VC	+0.3	
	211.5	3.0	208.5	212.0	VC	+3.5	R
8/13	62.0	0.6	61.4	61.6	VC	+0.2	
	95.0	1.0	94.0	94.5	VC	+0.5	
	173.5	2.0	171.5	172.8	VC	+1.3	R
	18.6	0.1	18.5	18.8	VC	+0.3	
8/15	51.0	0.4	50.6	51.1		+0.5	
8/19	15.5	0.1	15.4	15.5	J	+0.1	
	19.3	0.1	19.2	19.5	VC	+0.3	
	46.5	0.4	46.1	46.4	VC	+0.3	
	46.2	0.4	45.8	46.3	VC	+0.5	
	18.3	0.1	18.2	18.0	J		-0.2
8/20	35.8	0.2	35.6	36.0	VC	+0.4	
	18.8	0.1	18.7	18.9	VC	+0.2	
	32.8	0.2	32.6	33.0	VC	+0.4	
	19.8	0.1	19.7	19.5	VC		-0.2
	18.5	0.1	18.4	18.7	VC	+0.3	

(Data for computing index corrections continued) -4-

Date	Fathometer	Temp. and Salinity Correction	Corr. Fath.	VC	VC	Fathometer.	Remarks
8/21	17.5	0.1	17.4	17.7 VC	+0.3		
	18.4	0.1	18.3	19.2 VC	+0.9 R		
	24.0	0.1	23.9	25.4 VC	+1.5 R		
	32.3	0.2	32.1	32.0 VC	-0.1		
	18.8	0.1	18.7	18.7 VC	+0.0		
	18.2	0.1	18.1	18.5 J	+0.4		
8/22	17.4	0.1	17.3	17.5 J	+0.2		
	19.3	0.1	19.2	19.0 J		-0.2	
8/23	18.6	0.1	18.5	18.5 VC	+0.0		
	17.9	0.1	17.8	18.0 W	+0.2		
	14.0	0.1	13.9	14.0 D	+0.1		
	11.2	0.1	11.1	11.2 D	+0.1		
	19.5	0.1	19.4	19.5	+0.1		
	13.5	0.1	13.4	13.5 D	+0.1		
	11.2	0.1	11.1	11.3 D	+0.2		
	10.5	0.0	10.5	10.8 D	+0.3		
10.5	0.0	10.5	10.0 D		-0.5 R	Bottom very uneven	
8/24	18.2	0.1	18.1	17.7 J	-0.4		
8/25	116.0	1.3	114.7	115.0 VC	+0.3	0	
	15.5	0.1	15.4	15.5 VC	+0.1		
8/26	486.0	8.0	478.0	481.0 VC	+3.0 R		
8/27	92.0	1.0	91.0	90.0 VC	-1.0 ?		
	20.0	0.1	19.9	20.0 J	+0.1		
9/2	17.8	0.1	17.7	17.3 N		-0.4	
	17.8	0.1	17.7	17.3 N		-0.4	
	18.0	0.1	17.9	17.7 N		-0.2	
	18.0	0.1	17.9	17.8 N		-0.1	
	18.5	0.1	18.4	17.8 N		-0.6 R	
	18.8	0.1	18.7	17.8 N		-0.9 R	
	18.8	0.1	18.7	18.7 J		0.0	
9/3	48.6	0.4	48.2	48.2 VC	0.0		
	108.0	1.1	106.9	108.00 VC	+1.1 R		
9/4	61.5	0.5	61.0	60.7 VC		-0.3	
	80.1	0.8	79.3	79.2 VC		-0.1	
	20.8	0.1	20.7	19.2 J		-1.5 R	
9/5	Draft setting changed this date						
	18.5	0.1	18.4	18.5 J	+0.1		
	31.0	0.2	30.8	30.6 VC		-0.2	
9/7	106.0	1.1	104.9	105.3 VC	+0.4		
	51.0	0.4	50.6	51.0 VC	+0.4		
	80.2	0.8	79.4	80.2 VC	+0.8 R		
9/8	13.2	0.1	13.1	13.3 J	+0.2		
	14.8	0.1	14.7	14.7 J	0.0		
9/8 9	77.0	0.7	76.3	76.3 VC	0.0		
	18.2	0.1	18.1	18.0 VC		-0.1	
	19.6	0.1	19.5	19.5 J	0.0		
9/10	19.6	0.1	19.5	19.3 J		-0.2	
	273.5	5.0	269.5	269.2 VC		-0.3	
	770	(KTA) (SL x 6) 14.0	756	743 VC		-13.0 R	
	765	(HAK) (WL) 14.0	751	743 VC		-8.0 R	
	20.5	0.1	20.4	20.0 J		-0.4	

(Data for computing index corrections continued) -5-

9/11	19.5	0.1	19.4	19.0 J	-0.4
	25.0	0.1	24.9	24.5 VC	-0.4
	20.3	0.1	20.2	20.0 J	-0.2
9/12	20.4	0.1	20.3	20.3 J	0.0
	20.8	0.1	20.7	31.0 VC	+0.3
	22.3	0.1	22.2	22.0 VC	-0.2
	23.3	0.1	23.2	22.7 VC	-0.5
	19.4	0.1	19.3	19.0 J	-0.3
9/18	18.8	0.1	18.7	18.7 J	0.0
9/19	19.5	0.1	19.4	19.7 J	+0.3
9/20		Use 0.2 on 9/20			
9/21	20.2	0.1	20.1	20.3 VC	+0.2
9/22		Use 0.2 on 9/22			
9/23	162.0	1.9	160.1	159.0 VC	-1.1 R
9/24	17.4	0.1	17.3	17.3 J	0.0
	18.7	0.1	18.6	18.5 J	-0.1
9/25	8.5	0.0	8.5	8.3 J	-0.2
9/26	38.5	0.3	38.2	38.0 VC	-0.2
9/29		Use 0.2 on 9/29			
10/4	16.6	0.1	16.5	16.5 J	+0.0
	13.8	0.1	13.7	13.8 S	+0.1
	13.5	0.1	13.4	13.8 S	+0.4
	12.8	0.0	12.8	13.2 S	+0.4
	12.2	0.0	12.2	12.3 S	+0.1
	13.0	0.1	12.9	12.8 S	-0.1
	13.0	0.1	12.9	14.2 S	+1.3 R
	13.0	0.1	12.9	13.3 S	+0.4
	13.2	0.1	13.1	13.2 S	+0.1
	14.0	0.1	13.9	13.5 S	-0.4
	14.0	0.1	13.9	14.3 S	+0.4
	17.0	0.1	16.9	17.0 S	+0.1
	12.0	0.0	12.0	11.8 S	-0.2
	15.2	0.1	15.1	15.0 J	-0.1
10/8	64.0	0.6	63.4	64.3 VC	+0.9 R
10/9	53.8	0.4	53.4	53.0 VC	-0.4
10/10	24.8	0.1	24.7	24.5 VC	-0.2
10/11	26.8	0.1	26.7	26.8	+0.1

INDEX CORRECTIONS
Sheet No. 121

June 3 to 15th	0.2 Fms.
June 17 to 27th	0.3 Fms.
June 27 to July 9th	0.0 Fms.
July 9 to 16th	- 0.1 Fms.
July 17 to 30th	0.1 Fms.
July 31 to Aug 27th	0.2 Fms.
Sept 5 to 9th	0.1 Fms.
Sept 10, to 29th	- 0.2 Fms.
Oct. 4 to 11th	0.0 Fms.

LIST OF SIGNALS.

Sheet No. 121 .

Name	Hydrographic Name	Location from:
Tatoosh Lt. House	Toosh	Triangulation 1893
Peak No. 1	One	Triangulation 1913
Peak No. 2	Two	Triangulation 1913
Peak No. 3	Three	Triangulation 1913
Peak No. 4	Four	Triangulation 1913
Peak No. 8	Eight	Triangulation 1913
Father	(Same)	Triangulation 1930
Port	(Same)	Hydrographic location
Peak B	B	Triangulation 1913
Slant	Same	Triangulation 1930
Bode	Same	Hydrographic location
White Rock	White	Triangulation 1930
Bite	Same	Hydrographic location
Carroll Island	Carro	Triangulation 1913
Cake	Same	Topographic location
Ellis	Same	Triangulation 1913
Round-	Same	Topographic location
Hoh	Same	Triangulation 1913
North Rock	North	Triangulation 1914
Bull Hill	Bull	Triangulation 1914
Destruction Id. Lt.	Truc	Triangulation 1914
Peak 8	Same	Triangulation 1914
Gape	Same	Hydrographic location
Rags	Same	Hydrographic location
Beth	Same	Hydrographic location
Boulder Hill	Boulder	Triangulation 1914

KVD

KVH

KVB

POSITION	Date	No.	Time	Scaled Dist. in Meters	Corr. for Distortion	Corr. for "Ecc."	True Distance in Meters	Net Time in Seconds	Velocity	Scaled Dist. in Meters	Corr. for Distortion	Corr. for "Ecc."	True Dist. in Meters	Net Time in seconds	Velocity	Scaled Dist. in Meters	Corr. for Distortion	Corr. for "Ecc."	True Dist. in Meters	Net Time in Seconds	Velocity	
	6/16	(1)		12,499.2		?		8.54	1464 *													
		(2)		12,089.0		?		8.23	1468 *													
		(3)		11,379.0		?		7.75	1470 *													
	6/17	(178)		35,256.2	35,230.1		35,230.1	23.865	1476.2													
		(179)		36,451.8	* 36,425.7		36,425.7	24.674	1476.3													
		(180)		36,741.0	36,715.0		36,715.0	24.960	1470.9													
	8/25	(3)	7:05	27,368.0	27,371.4	- 31.2 ?	27,340.2	18.537	1474.9													
		(4)	7:08	27,602.8	* 27,606.2	- 31.2 ?	27,775.0	18.788	1476.3													
		(5)	7:10	28,227.8	28,231.2	- 31.2 ?	28,200.0	19.065	1479.1													
		(6)	7:27	32,243.6	32,247.3	- 31.2 ?	32,216.1	21.780	1478.5													
	8/4	(1)	1:35		62,874.6	12.0	61,886.6	42.69	1473.0													
		(2)	1:39																			
		(3)	1:44		62,525.8	12.0	61,537.8	42.44	1473.6	29,534.0	29,569.0	34.3	29,603.3	20.09	1473.6		(34,313.7)	9.1	34,322.8	23.28	1474.3	
		(4)	1:50		62,330.3	12.0	61,342.3	42.35	1472.0	31,011.2	31,045.8	34.3	31,080.1	21.09	1473.7		(34,198.6)	9.1	34,207.7	23.23	1472.6	
																	(34,121.2)	9.1		24.39		
																	(34,073.4)	9.1		21.82		
	8/22	(1)								26,961.2	26,956.0		26,956.0	18.260	1476.2		(32,278.2)					
		(2)								27,091.0	27,085.8		27,085.8							(32,278.2)	21.880	1475.2*
		(3)								27,281.4	* 27,276.2		27,276.2	18.485	1475.6		(33,069.2)			22.360	1477.6	
		(4)								27,491.6	27,486.4		27,486.4	18.580	1479.4		(33,901.6)			23.005	1473.6	
		(5)								28,327.6	28,322.4	- 16.4	28,306.0	19.150	1478.1		(35,918.1)					
	9/29	(1)									(39,582.4)		39,582.4	27.125	1459.3*							
		(2)									(40,027.5)		40,027.5	27.325	1464.8*							
		(3)									(40,329.0)		40,329.0	27.450	1476.1							
		(4)									(41,862.6)		41,862.6	28.410	1473.5							
		(5)									(42,575.2)		42,575.2	28.985	1468.9*							
		(6)									(42,947.9)		42,947.9	29.110	1475.3							
	10/8	(1)									(19,692.3)	- 30.0	19,662.3	13.300	1478.4							
		(2)									(21,149.8)	- 30.0	21,119.8	14.340	1472.1							
		(3)									(23,014.9)	- 30.0	22,984.9	15.590	1474.3		55,327.3	(55,327.3)	25.6	55,301.7	37.580	1471.6
		(4)									(24,810.0)	- 30.0	24,780.0	16.680	1485.6*		57,102.2	(57,102.2)	25.6	57,076.6	38.600	1478.7
	10/10	(1)								24,376.2	24,373.7		24,373.7	16.465	1480.3							
		(2)			(67,280.6)		67,300.6	45.525	1477.9	25,231.0	25,228.5		25,228.5	17.025	1461.9							
		(3)								26,312.6	26,310.0		26,310.0	17.925	1467.8*							
		(4)		(64,097.5)	(64,097.5)		64,097.5	43.215	1485.8	27,971.6	27,968.9		27,968.9	18.895	1480.2							
		(5)			(61,621.2)		61,621.2	41.545	1483.2	30,194.6	* 30,191.6		30,191.6	20.395	1460.3							

NOTE: * Velocities rejected.

Value adopted by these velocity tests was 1478.0

FIXES FROM WHICH VELOCITY WAS DETERMINED.

DATE	POSITION	STATION	LATITUDE	LONGITUDE
6/17	178	KVD	47-22.2	124-30.9
6/17	179	KVD	47-20.5	124-28.9
6/17	180	KVD	47-20.4	124-28.6
6/25	7:05	KVD	47-25.6	124-25.0
6/25	7:08	KVD	47-25.5	124-25.1
6/25	7:10	KVD	47-25.3	124-25.1
6/25	7:27	KVD	47-23.1	124-25.5
8/4	1:35 $\frac{1}{4}$	KVD, KVB	48-09.9	124-53.9
8/4	1:39 $\frac{3}{4}$	KVB	48-09.5	124-54.7
8/4	1:44 $\frac{1}{4}$	KVD, KVH	48-09.15	124-55.5
8/4	1:50	KVD, KVH	48-08.6	124-56.5
9/22	1	KVH	48-09.5	124-51.4
9/22	2	KVB	48-09.7	124-52.4
9/22	3	KVB, KVH	48-09.9	124-53.3
9/22	4	KVH	48-10.2	124-54.3
9/22	5	KVH	48-10.2	124-55.9
9/29	3	KVH	48-03.4	124-57.6
9/29	4	KVH	48-01.8	124-54.4
9/29	6	KVH	48-00.9	124-52.9
10/8	1	KVH	48-20.0	124-59.7
10/8	2	KVH, KVB	48-20.3	125-01.0
10/8	3	KVH, KVB	48-20.7	125-02.8
10/10	1	KVH	48-12.7	124-55.9
10/10	2	KVD, KVH	48-12.1	124-55.8
10/10	4	KVD, KVH	48-10.2	124-55.5
10/10	5	KVD, KVH	48-08.8	124-55.2

LOCATION OF HYDROPHONES

Number I Location of KVD June 5, 1930	Latitude 47°-40'	352.8
	Longitude 124°-29'	1095.8
Number II, Location of KVD July 3, 1930	Latitude 47°-40'	426.0
	Longitude 124°-29'	1071.8
Number III, Location of KVD July 17, 1930	Latitude 47°-40'	34.0
	Longitude 124°-30'	296.6
Number IV, Location of KVD Sept. 8, 1930	Latitude 47°-40'	112.0
	Longitude 124°-30'	352.0
Number V, Location of KVD Oct. 3, 1930	Latitude 47°-40'	157.2
	Longitude 124°-30'	357.0

Fixes and location of hydrophone of Station KVD were plotted on and scaled from Smooth Sheet No. 41.

Number I, Location of KVB July 10, 1930	Latitude 47°-54'	154.2
	Longitude 124°-39'	957.9
Number II, Location Of KVB Oct. 5, 1930	Latitude 47°-53'	1732.0
	Longitude 124°-39'	1146.2

Fixes and location of hydrophone of station KVB were plotted on and scaled from Smooth Sheet No. 23.

Number I, Location KVH, August 2, 1930	Latitude 48°-23'	403.2
	Longitude 124°-44'	174.6
Number II, Location of KVH, August 24, 1930	Latitude 48°-23'	790.5
	Longitude 124°-44'	637.8
Number III, Location of KVH, Sept. 11, 1930	Latitude 48°-23'	792.0
	Longitude 124°-44'	637.8

Fixes and location of hydrophone at Station KVH were plotted and scaled from Smooth Sheet No. 43.

R.A.R. Chronology for Station KVD.

June 5, Layed magnetophone and cable and established station.
(See Lag Book, Page 155 for location of magnetophone.

June 16, Velocity tests (Fixes and time in Lag Book, Page 3).

June 17, Velocity tests (Fixes and time in Lag Book, Page 7).

June 25, Velocity tests (Fixes in Lag Book, Page 8; time Page 11)

July 2 & 3, Repairs to magnetophone (Position angles of KVD No. 2
on Page 156 of Lag Book).

July 17, Replaced magnetophone (Position KVD No. 3 on Page 156
of Lag Book).

August 4, Velocity tests (Page 28 - 29 of Lag Book).

September 1, The instructions to operator regarding operation of
relay without manual control effective in afternoon.

September 8, Replaced magnetophone (Position of KVD No. 4 on Page
156 of Lag Book).

October 3, Inspected magnetophone (Position of KVD No. 5 on Page
161 of Lag Book).

October 10, Velocity tests (Fixes on Page 85 - 87 of Lag Book).

R.A.R. Chronology for Station KVB.

July 10, Established station, magnetophone planted(Position
 angles on Page 157 of Lag Book).
August 1 Operator Darton relieved De Geus.
August 4, Velocity tests (pages 28 - 29 Lag Book).

September 3, The instruction to operator regarding operation with-
 out manual controll effective.

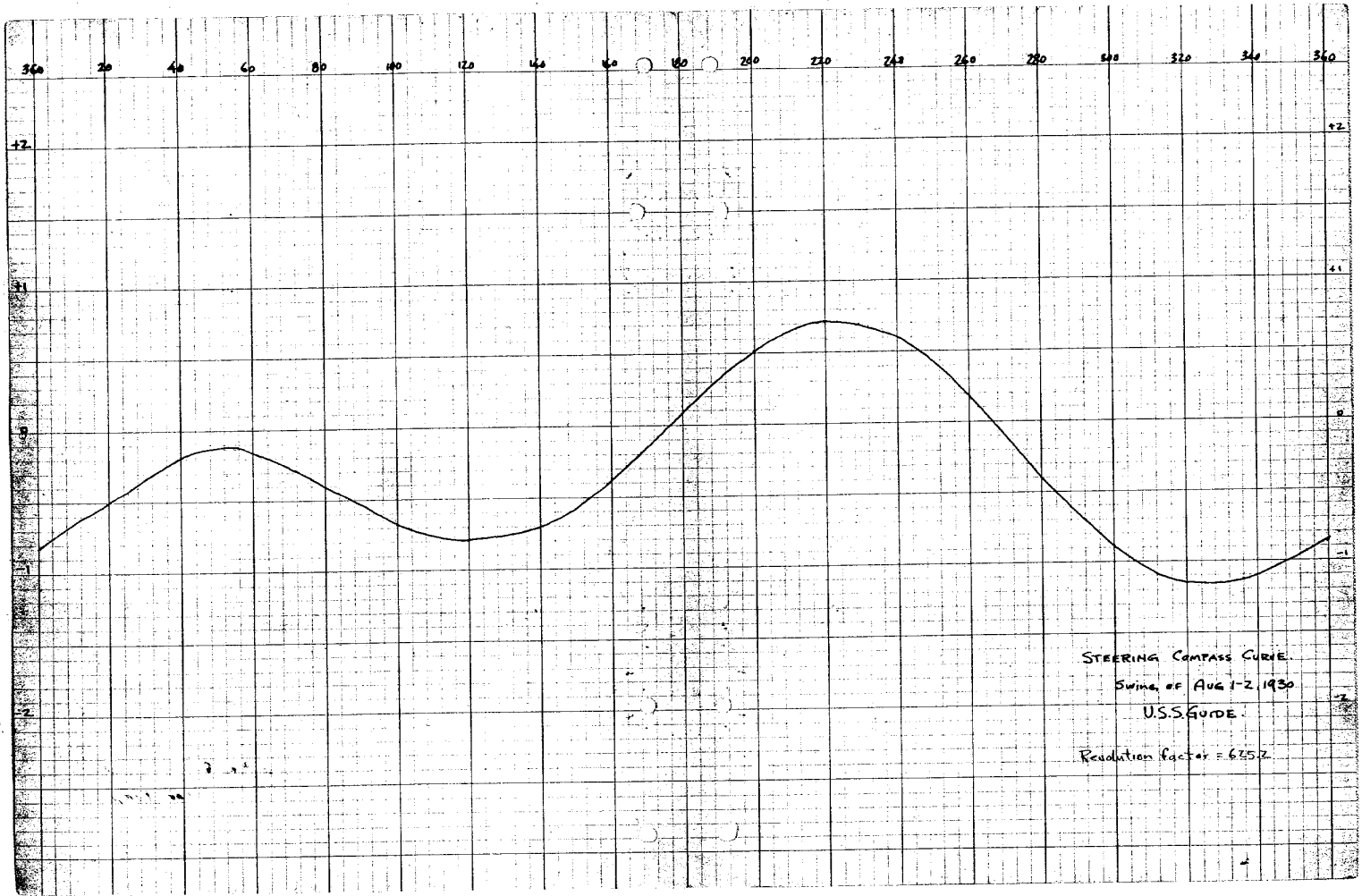
September 22, Velocity tests (Fixes on Page 63 of Lag Book).

October 5, Magnetophone changed (Position on Page 160 of Lag Book)

October 8, Velocity tests (Fixes on Pages 76 - 79 of Lag Book).

R.A.R. Chronology for Station KVH.

- August 2, Magnetophone planted and station established (Position of KVH No. 1 on Page 158 of Lag Book).
- August 24, Replaced magnetophone (Position KVH No. 2, Page 159 of Lag Book).
- September 3, The instruction to operator regarding operation without manual control effective.
- September 11, Replaced magnetophone (Position of KVH No. 3, on Page 159 of Lag Book).
- September 22, Velocity tests (Fixes on Page 63, Lag Book). Time on 64 and 65.
- September 29, Velocity tests, (Fixes on Pages 71 - 72, Time on Pages 70 - 73.)
- October 8, Velocity tests, (Fixes on Pages 76 - 79 of Lag Book)
- October 10, Velocity tests, (Fixes on Pages 85 - 87 of Lag Book).
-



80
16

June 15, 1931

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
7 volumes of sounding records for

HYDROGRAPHIC SHEET 5114

Locality Offshore, Sealton Rock to Cape Flattery, Washington Coast

Chief of Party: K. T. Adams, in 1930

Plane of reference is mean lower low water, reading

1.2 ft. on tide staff at Destruction Island

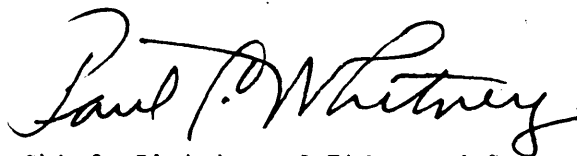
17.2 ft. below B. M. 1 (1930)

3.8 ft. on tide staff at La Push

17.2 ft. below B. M. 4

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.

Field Records Section (Charts)

HYDROGRAPHIC SHEET No. *H-5114*

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

Number of positions on sheet	..1848
Number of positions checked	...489
Number of positions revised6
Number of soundings recorded	...9065
Number of soundings revised	...48
Number of signals erroneously plotted or transferred	<i>None</i>

Date:.....*Oct. 13, 1931*.....

Cartographer:.....*J. Fleming*.....

AND REFER TO No. 82-DRM

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

SECTION OF FIELD RECORDS

Review of Hydrographic Sheet No. 5114

Sealion Rock to Cape Flattery (Offshore)

Surveyed in 1930
Instructions dated April 16, 1930

FATHOMETER

Chief of Party, K. T. Adams
Surveyed by K. T. A.
Protracted by H. A. Karo
Soundings plotted by H. J. Healy, J. C. Mathisson
Verified and inked by J. Fleming.

1. The sounding volumes and bomb records are satisfactory but attention is invited to the statement in the last paragraph, page 2 of the descriptive report relative to "dead reckoning".

"Dead reckoning" according to general instructions, involves, among other things, the use of patent logs and the preparation of a dead reckoning abstract. The use or preparation of either of these is not indicated anywhere in the records submitted, except in the descriptive report.

(a) Near the end of the descriptive report, "Chronology for \square Stations" reference is made to the fixes for velocity tests, being recorded in the "Lag Book." The only reference to lags, aside from their use, is the note, on page 5, vol. 8, bomb record, which gives the lags for two stations.

2. The plan, character and extent of the survey satisfy both general and specific instructions except that the 50 fm. bank in lat. $48^{\circ}16'$, long. $125^{\circ}20'$ should have been investigated more closely.

3. Crossings - The sounding line crossings are considered satisfactory, except between 15-16 EE, $48^{\circ}16'$, $126^{\circ}18'$, where the soundings appear too shoal when compared with two crossings of two different days. The soundings between 15-16 EE have been omitted in the office.

4. The field plotting was excellent and none of the work had to be done over.

5. Depth curves - The usual depth curves can be completely drawn.

6. Junctions - Junction with contemporary surveys H. 5068, 5110, 5111 is satisfactory and the soundings are in good agreement.

(a) Junction on the south with H. 4775, H. 4735 (year 1927) is satisfactory and the soundings agree well.

7. Comparison with previous surveys - Comparison with H. 2202, survey of 1894, shows an average difference in depth of about 5 fms., the old survey showing greater depth.

H. 2203 shows the same characteristic difference but to a lesser extent.

It is thought that the dead reckoning in the old work may be responsible for the evident displacement of the lines in the old surveys.

(b) Observe the 131 fms., $47^{\circ}26'$, $124^{\circ}52'.5$, H. 2202. No line adjustment will alter the indicative aspect in relation to surrounding soundings.

(c) There are no C. and G.S. surveys of the area to the northwest of 2203.

(d) The 45, 48, 49 fm. soundings defining the bank in $48^{\circ}18'$, $125^{\circ}15'$ have been traced to chart 6400 (discontinued). The sources are believed to be the U.S.F.C. ALBATROSS and BA. 1911, according to the history of chart 6102.

(e) The position of the bank on chart 6102 is about 2 miles northeast of what is believed to be the correct position, the approximate center of which is the 50 fms. (paragraph 2, page 2) in this survey.

(f) A small bank with 71 fms. is noted in the north arm of the valley, $48^{\circ}12'$, $125^{\circ}14'$.

(g) Chart 6102 shows a 240 fms. where 600 fms. is now indicated in $48^{\circ}09'$, $125^{\circ}52'$.

(h) The 235 fm. northeast of the above sounding is from B.A. 1911 but that chart shows it to be "No depth." It is thought that the 240 fms. belongs on the slope 3 miles to the north.

(i) A pronounced indication is observed in $48^{\circ}12'$, $126^{\circ}29'$ -- 1074 fms.

(j) The soundings in the western extension of the 200 fm. curve, $48^{\circ}07'$, $125^{\circ}43'$, indicate an uncertain condition.

8. Slopes - Steep slopes are observed at three points, namely

(a) The west flank of the bank discovered in $48^{\circ}12'$, $126^{\circ}18'$ - 30° slope.

(b) The point of the 200 fm. curve, $48^{\circ}07'$, $125^{\circ}47'$, 33° slope.

(c) The point of the 200 fm. curve, $47^{\circ}27'$, $124^{\circ}55'$, 36° slope.

Correction for these slopes is not recommended (Spec. Pub. 165, page 13), at this scale.

9. The bank in $48^{\circ}12'$, $126^{\circ}18'$ is thought to be satisfactorily defined by the economic "X" development.

(b) A distinctive feature of the formation just noted is the deep valley on the east side. This valley appears to be about 8 miles long and extends in a NE X E direction.
10. In $48^{\circ}05'$, $125^{\circ}05'$ a small bank with 66 fms. is noted.
11. A finger-like formation pointing southwest and having 109 fms. as an indication is noted in $47^{\circ}47'$, $123^{\circ}06'$. An old blue print shows this area to be a halibut habitat.
12. No further surveying is required in this area.
13. The entire work is considered excellent.
14. Recommendations - It is recommended that this survey supersede all other surveys in this area.

The above recommendation is based upon the belief that the control and sounding methods used give a correlation between the several features characteristic of the area and a uniform accuracy in depth determination, not obtainable in the old methods under which the previous surveys were executed.

In recommending the above, a slight exception may be noted. If bottom characteristics be considered (as a rule) unchangeable in most open water areas, it seems feasible to utilize those shown on old surveys to supplement new surveys where a dearth of such information exists. Considering, of course, the application of the practice to a given area common to any two sheets a slight displacement from the true position would not affect its value in the new work, the transfers should, however, be made in another color ink. Accordingly, several such characteristics have been transferred (in red) from H. 2202, 2203.

Referring again to the 131 fms. sounding from H. 2202, it is desired to point out that this sounding (in its adjusted position) falls close to the reported position of the 22 fm. sounding (Chart Division letter 338 of 1927) according to the "dead reckoning" (blue print 21312). The above circumstance warrants the recommendation that the doubtful area be examined somewhat closely in the near future with a view to removing the uncertainty regarding the true conditions.

15. Reviewed by J. Fleming

Approved
A. M. Sobieralski
Chief Section Field Records

Sheet inspected by A.L. Shalowitz.

The transfer of the bottom characteristics in red from the old survey and the retention of the 131 fm. sounding in its adjusted position from H.2202 have been made at my suggestion and are hereby approved. The other recommendations noted by the reviewer are fully concurred in.

A.L.S.

Approved:

See previous page

Chief, Section of Field Records

F. Borden

Chief, Section of Field Work

