

6809

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. 7 Office No. H-6809

LOCALITY

State MAINE

General locality CASCO BAY

Locality HARPSWELL SOUND AND VICINITY

194² - 43

CHIEF OF PARTY

C. D. MEANEY

LIBRARY & ARCHIVES

DATE

6809

DESCRIPTIVE REPORT
TO ACCOMPANY
HYDROGRAPHIC FIELD SHEETS
NOS. ~~7A~~ & 7B

MAINE

CASCO BAY
HARPSWELL SOUND
AND VICINITY

Henry J. Healy,
Lieut. Comdr., USC&GS
Chief of Party

*This combined survey in 1943 has been divided.
Field Sheet 7B is now the 1943 work on the
present H-6809, having been plotted in the
Washington Office.*

*Field Sheet 7A, the northern end of Harpswell
Sound has been returned to Norfolk with records
for processing into H-6857 (1943).*

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. H-6809

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. 7

REGISTER NO. H-6809

State Maine

General locality CASCO BAY

Locality HARPSWELL SOUND AND VICINITY

Scale 1:10,000 Date of survey Aug-Oct., 1942

Vessel LYDONIA

Chief of Party C. D. Meaney

Surveyed by Ship's Officers

Protracted by M. A. Axelton

Soundings penciled by M. A. Axelton

Soundings in ~~cuttings~~ feet

Plane of reference M.L.W.

Subdivision of wire dragged areas by

Inked by G. F. Jordan

Verified by G. F. Jordan

Instructions dated May 7, 1942, 19

Remarks: This sheet was processed at the Norfolk

Processing Office.

PRELIMINARY DESCRIPTIVE REPORT
FOR USE OF NORFOLK PROCESSING OFFICE

TO ACCOMPANY

HYDROGRAPHIC SHEET NO. #H-6809

PROJECT CS-265

MAINE COAST

SHIP LYDONIA

G. D. MEANEY, COMMANDING

1942

The authority for this project is contained in the following:

Instructions	May 7, 1941
Supplemental Instructions	March 11, 1942
Supplemental Instructions	June 15, 1942
Supplemental Instructions	June 17, 1942

SCALE

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

SURVEY METHODS:

Hydrography was controlled by frequent three point fixes on triangulation and topographic signals. Submarine Signal Corporation 808 depth recorders mounted on Launches 79, 82 and the Ogden were used for sounding. Corrections for recorder soundings were determined from bar tests. Serial temperatures were observed to supplement bar tests. A standard Coast and Geodetic Survey tide gage at Portland was maintained in operation by the Tide Division. Tide reducers for all soundings were taken from the Portland tide roll.

Two tide stations were established during 1942. One of these was located in Cundy Harbor, the other was located on the New Meadows River in Latitude 43 53'.4. Tide observations at both of these stations proved that the time and range of the tide in New Meadows River was very nearly the same as the time and range of the tide at Portland.

CHANNEL BETWEEN THE GURNET AND HARPSWELL SOUND

There is a very narrow unmarked channel 4 feet deep ^{MLW} under a bridge with 14.4 foot clearance M. H. W. connecting the Gurnet and Harpswell Sound. Local knowledge is desirable in navigating this channel.

HEN COVE TO QUOHOG BAY

There is an unmarked ~~foot~~ channel connecting Hen Cove and Quohog Bay. Local knowledge is desirable in navigating this channel.

ANCHORAGES

There are excellent launch anchorages in Quohog Bay, The Gurnet, Harpswell Sound and the coves bordering on Harpswell Sound.

Respectfully submitted,

s/C. D. Meaney,
Lt. Comdr. U. S. C. & G. S.

ADDENDUM

HARPSWELL SOUND - CASCO BAY

SHEET H-6809 (Field No. 7)

The topography shown in ink on this sheet was taken from the graphic control sheets ^{*}(G, H, K & L,) which was accomplished by the ship LYDONIA during the 1942 season. The topography shown ~~in pencil~~ on this sheet was taken from ~~promises of~~ airphoto *manuscripts* sheets T-5960, T-5963, T-5969 and T-5970.

* T-6851(1941), T-6912b(1942), T-6929a&b(1942)

Norfolk, Va.
Oct. 5, 1943

Respectfully submitted,

Approved & forwarded

Isadore M. Zeskind
Associate Cartographic Engineer

Paul C. Whitney
Supervisor, S. E. District

STATISTICS

HYDROGRAPHIC SHEET 7

U.S.C.&G.S.S. LYDONIA - G. D. MEANEY, COMD'G.

~~43868~~

OGDEN & Launch 72 - Lt. H. J. Healy, In Charge

Vol No.	Date 1942	Day Letter	No. of Positions	Statute Miles	Remarks
I	9/8	a(blue)	115	16.7	Launch 72
I	9/9	A(blue)	68	12.5	OGDEN
II	9/14	b	25	1.8	Launch 72
II	9/15	c	163	14.0	Launch 72
II	9/17	d	75	7.2	Launch 72
III	9/17	d	132	12.8	Launch 72
III	9/22	B	135	21.3	OGDEN
IV	9/22	e	2		Launch 72
IV	9/23	f	46	4.3	Launch 72
IV	9/23	C	28	4.6	OGDEN
IV	9/24	D	141	15.2	OGDEN
V	9/30	E	130	29.7	OGDEN
V	10/1	F	89	14.0	OGDEN
VI	10/1	F	16	3.5	OGDEN
VI	10/2	G	140	20.7	OGDEN
Total			1305	178.3	

Launch 82 - Lt. Wilbur R. Porter, In Charge

I	8/12	a(red)	199	36.7	
II	8/13	b	211	32.0	
III	8/13	b	28	4.9	
III	8/14	c	91	13.3	
III	8/18	d	100	8.9	
IV	8/18	d	29	1.1	
V	9/1	e	11	1.7	
V	9/3	f	205	20.8	
VI	9/3	f	12	1.5	
VI	9/4	g	151	25.4	
VI	9/8	h	34	4.3	
VII	9/8	h	151	18.0	
VII	9/9	j	47	7.7	
VIII	9/9	j	173	23.8	
IX	9/14	k	225	28.5	
X	9/14	k	21	1.2	
X	9/15	l	210	24.3	
XI	9/15	l	57	5.0	
XI	9/17	m	171	18.2	
XII	9/17	m	78	11.0	
XII	9/21	n	108	15.4	
XII	9/22	p	22	3.0	

Vol. No.	Date 1942	Day Letter	No. of Positions	Statute Miles
XIII	9/22	p	202	28.1
XIV	9/23	q	219	20.6
XV	9/24	r	209	26.8
XVI	9/25	s	213	25.9
XVII	9/30	t	209	18.4
XVIII	10/1	u	191	14.0
XVIII	10/7	v	40	4.2
XIX	10/7	v	54	4.2
XIX	10/8	w	188	13.9
XX	10/8	w	47	4.0
XX	10/9	x	136	13.2
XX	10/12	y	44	2.8
XXI	10/12	y	24	1.8
XXI	10/13	z	7	0.5
Total			4117	485.1

~~H3808~~

Launch 79 - Clarence A. George, In Charge

I	10/2	a(green)	135	13.8
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STATISTICS

(by verifier in Wash. Office)

The following statistics are the totals for all launches on this survey in 1942 and 1943.

Number of soundings.....56,000 (approx.)

Number of positions.....6,578

Statute miles of sounding lines..802

*The number of soundings is based on the position-sounding equation on H-6732 (1941-1943) which used similar equipment in the same type of area.

827811 260
821 HPC

TIDE NOTE FOR HYDROGRAPHIC SHEET

Oct. 15, 1943.

~~Division of Hydrography and Topography:~~

✓ Division of Charts: Attention: H. R. EDMONSTON

Plane of reference approved in
28 volumes of sounding records for

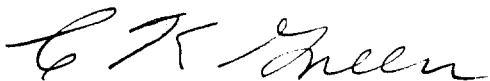
HYDROGRAPHIC SHEET 6809

Locality Harpswell Sound, Casco Bay, Maine.

Chief of Party: C. D. Meaney in 1942
Plane of reference is mean low water reading
8.6 ft. on tide staff at Portland
19.0 ft. below B. M. 31

Height of mean high water above plane of reference is 8.9 ft.

Condition of records satisfactory except as noted below:


Chief, Division of Tides and Currents.

GEOGRAPHIC NAMES

Survey No. **H6809**

Name on Survey	Source										
	A	B	C	D	E	F	G	H	K		
<u>Maine</u>											1
<u>Casco Bay</u>											2
<u>Harpswell Sound</u>											3
<u>Orr Island</u>											4
<u>Bailey Island</u>											5
<u>Wills Strait</u>											6
<u>The Gurnet</u>											7
<u>Quohog Bay</u>											8
<u>Yarmouth Island</u>											9
<u>Mill Cove</u>											10
<u>Long Cove</u>											11
<u>Lumbos Hole</u>											12
<u>Pond Island</u>											13
<u>Ragged Island</u>											14
<u>Beals Cove</u>											15
											16
											17
											18
											19
<u>Portland</u>											20
											21
											22
											23
											24
											25
											26
											27

Names underlined in red approved
by L. HECK on 2/21/44

H6809

	Remarks	Decisions
1		U.S.G.B
2		"
3		437699
4		437699
5		"
6		"
7		437699
8		432699
9		437699
10		438699
11		437699
12		438699
13		437699
14		437699
15		437699
16		
17		
18		
19		
20	Location of tide staff	
21		
22		
23		
24		
25		
26		
27		

Surveys Section (Chart Division)

H 8809

HYDROGRAPHIC SURVEY NO.

Records accompanying survey:

Boat sheets 3...; sounding vols. 33 (plus 3 with H-6857(1943))...; wire drag vols. 0...;
 bomb vols. 0.....; graphic recorder rolls 38 (plus X, Y, Z days, probably) ...; with sheet rec'd with H-6 FOC and filed with present survey
 special reports, etc. none.....

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

Number of positions on sheet	6578.	
Number of positions checked	.114.	
Number of positions revised	...9.	
Number of soundings recorded	56,000.	
Number of soundings revised (refers to depth only)	...15+	
Number of soundings erroneously spaced0	
Number of signals erroneously plotted or transferred0	
Topographic details	Time ..46.	
Junctions	Time ..17½.	
Verification of soundings from graphic record	Time	
Verification by <i>G.F. Jordan</i>	Total time 404½.	Date 1/31/44....
Review by <i>G.F. Jordan</i>	Time 105½.	Date 2/4/44....

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
DESCRIPTIVE REPORT
PHOTOSTAT OF

} No. H **H2899**
No. T

{ received
registered
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	
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DIVISION OF CHARTS

REVIEW SECTION - SURVEYS BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. 6809

Field No. 7

Maine, Casco Bay, Harpswell Sound and Vicinity
Surveyed August - October 1942; May - July 1943
Scale 1:10,000
Instructions dated May 7, 1941, and April 30, 1943

Soundings:

Hand lead
808 Fathometer

Control:

Three-point fix on shore signals

Chief of Party - C. D. Meaney; H. J. Healy
Surveyed by - Ship's Officers
Protracted by - M. A. Axelton; R. J. Christman
Soundings plotted by - M. A. Axelton; R. J. Christman
Verified and inked by - G. F. Jordan
Reviewed by - G. F. Jordan
Inspected by - H. R. Edmonston, February 9, 1944

1. Shoreline and Signals

The control for this survey is from previous triangulation and graphic control surveys T-6851 (1941), T-6912b (1942) and T-6929a&b (1942).

The shoreline is from planimetric drawings T-5960, T-5963, T-5968, T-5969 and T-5970.

The low water features, as shown on the present survey, are a final adjustment of the detail shown on the planimetric, graphic control and hydrographic surveys.

The descriptive report of T-5969 refers to several minor features to be investigated by the hydrographic party, but this was not accomplished. The questionable rocks in Dipper Cove at Lat. 43°47.4', Long. 69°57.8' were transferred to the present survey.

Despite a field inspection note on air photo No. 6758 that certain dark colored areas at Lat. 43°48.5', Long. 69°56.7' were ledges, the graphic records over this area indicate an unbroken sloping bottom. However, the ledges have been transferred to the present survey.

2. Sounding Line Crossings

In general, the sounding line crossings are very good. However, in some places where the work of different launches overlaps there are differences in depth up to 3 feet in 40-ft. depths.

The bottom is so irregular that suitable comparisons are not available generally. In most cases the shoaler soundings have been inked. These differences were principally noted in a 1/4-mile area around the 19-ft. shoal at Lat. $43^{\circ}45.4'$, Long. $69^{\circ}57.7'$.

3. Submarine Features

The irregularity of the bottom is so great that it was necessary to cover practically the entire area of the present survey with a close spacing of sounding lines and to accomplish a large amount of development. There are only a few exceptions to the completeness of the depth curves.

- a. Development of the curves at the approach immediately west of the bridge over Wills Strait at Lat. $43^{\circ}45.0'$, Long. $69^{\circ}59.4'$ would have been desirable. The rock charted on 315, 50 meters north of the 3-ft. sounding on the present survey and on which several boats have been reported as grounding, was not verified. The charted rock and the delineation of the curves on the smooth sheet are from blueprint 20723, a survey in 1912 by the U. S. Engineers. This blueprint supplies the necessary deficiency for charting. No actual dredging has been accomplished, according to the indexes of the U. S. Engineer reports, since 1912.
- b. Additional development would have been desirable in Lumbos Hole at Lat. $43^{\circ}47.7'$, Long. $69^{\circ}56.9'$ to more adequately develop the curves in the passage connecting Harpswell Sound with The Gurnet. Air photo No. 6758 was consulted in drawing the depth curves.
- c. Additional development of the 6-ft. and 12-ft. curves in Mill Cove, at Lat. $43^{\circ}48.1'$, Long. $69^{\circ}58.15'$, would have been desirable to more adequately delineate the channel.

*not
applied
to smooth
sheet.
G.H.S.*

- d. Development of the ledge indicated by the 22-ft. sounding at Lat. $43^{\circ}46.2'$, Long. $69^{\circ}59.2'$ would have been desirable. Further consideration will be given in comparison with the 1943 wire drag surveys yet to be received. *16 ft grounding, with 18 ft sounding, on H-6922(1943)W.D.*

4. Junctions with Contemporary Surveys

Satisfactory junctions are made on the north with H-6807 (1942), on the southwest with H-6732 (1941-43) and on the south with H-6810 (1942). Surveys on the east have not been received in the office.

5. Comparison with Prior Surveys

a. H-857 (1864-1874) 1:10,000 Scale

- (1) General agreement in depth is noted in comparison with this prior survey. Numerous instances of erroneous spacing of soundings were found causing the prior shoaler soundings to fall too far offshore in deeper water on the present survey. The following list of more important prior soundings charted on 315 should be disregarded for the above reason.

<u>Latitude</u>	<u>Longitude</u>	<u>Soundings</u>	<u>Remarks</u>
$43^{\circ} 47.47'$	$69^{\circ} 54.90'$	3 ft.	
46.8'	56.88'	6'	
46.1'	57.3'	16, 19, 25	also erroneous position
48.3'	57.4'	3'	
48.5'	57.3'	3'	
47.6'	57.4'	4'	
47.3'	58.2'	point in curve	
44.38'	58.2'	4'	
44.25'	58.0'	24 ✓	also charted 30 meters east of plotted position
43.88'	58.5'	4'	
43.05'	56.8'	4'	

- (2) The 7-ft. prior sounding at Lat. $43^{\circ}44.9'$, Long. $69^{\circ}58.4'$ and the 24-ft. prior sounding 150 meters N.W., charted on 315, should be disregarded. These charted soundings and other uncharted soundings on line on this shoal were controlled by revolving positions. The positions can be plotted to bring the prior soundings into agreement with the depths on the present 5-ft. shoal.

- (3) The 16-ft. prior sounding charted on 315 at Lat. $43^{\circ}44.9'$, Long. $69^{\circ}58.1'$ should be disregarded. The position controlling this prior sounding was misplotted, the 16 actually falling inside the 18-ft. curve instead of in 25-ft. depths.
- (4) The 18-ft. prior sounding charted on 315 at Lat. $43^{\circ}44.53'$, Long. $69^{\circ}58.57'$ should be disregarded. The uncharted 19-ft. prior sounding preceding the 18 on line has been carried forward. The 19 is not disproved on the present survey, falling in 25-ft. depths on a rocky ridge. The 18 is considered an error in reading the leadline, falling on soft bottom in 45-ft. depths on the present survey. The unreduced depths on the prior line were 3-4 (19), 7-0, 3-3 (18) and 9-0.
- (5) The 3-ft. prior sounding charted on 315 has been carried forward at Lat. $43^{\circ}44.38'$, Long. $69^{\circ}58.07'$, supplanting an undeveloped 5-ft. sounding on the present survey. This position is 50 meters S. E. of the prior position and falls on a rocky ridge. The prior position, falling in 27-ft. depths on the present survey, is considered to result from incorrect spacing of soundings on line.
- (6) The 33-ft. prior sounding charted on 315 at Lat. $43^{\circ}44.15'$, Long. $69^{\circ}57.47'$ was erroneously reduced in the records. The correct value of 39 ft. is sufficiently close to comparable depths on the present survey to be disregarded.
- (7) The 48-ft. prior sounding charted on 315 at Lat. $43^{\circ}44.05'$, Long. $69^{\circ}56.05'$ should be disregarded. Falling in 60-ft. depths on the present survey, the prior line is considered to have actually passed nearer to the present 25-ft. shoal to the south. The present survey is considered adequate.
- (8) The 3-ft. prior sounding charted on 315 at Lat. $43^{\circ}44.5'$, Long. $69^{\circ}56.4'$ should be disregarded. This sounding, falling in 40-ft. depths on the present survey, was controlled by erroneously recorded signals and, according to remarks in the sounding records, actually falls on the north end of Blacksnake Ledge.

The uncharted prior 14- and 18-ft. soundings on this shoal, from another line, are considered erroneous substitutions for two original soundings erased in the records. The erased soundings are legible and agree with present depths.

- (9) The 16-ft. prior sounding charted on 315 at Lat. $43^{\circ}44.07'$, Long. $69^{\circ}59.0'$ has been carried forward, supplanting a 29-ft. sounding on the present survey. This sounding falls on a 26-ft. shoal on the present survey and was not investigated. It is believed that the leadline may have been misread; but the prior sounding is nevertheless carried forward, anticipating further consideration in comparison with wire drag surveys not yet received. *Not disproved by H-6922(1943)W.D. 10/4/45-Disproved-cleared by 21' on H-6922(1945)W.D. Add WK.*

b. H-839 (1863-1873) 1:10,000 scale

- (1) This prior survey is in fair agreement with the present survey except that the present depths tend to be generally 2 to 3 feet deeper and in some places up to 8 feet deeper in 50-ft. depths.
- (2) A 10-ft. prior sounding, charted as 8-ft., has been carried forward at Lat. $43^{\circ}46.8'$, Long. $69^{\circ}58.5'$ on the present 13-ft. shoal. The 10-ft. sounding had been erroneously reduced in the records as 8 feet.
- (3) The 30-ft. prior sounding charted on 315 at Lat. $43^{\circ}45.8'$, Long. $69^{\circ}59.0'$ should be disregarded. Considering the general 2-3 ft. differences in depths the 33-ft. depth from development on the present survey is considered adequate.
- (4) The 13-ft. prior sounding charted on 315 at Lat. $43^{\circ}45.55'$, Long. $69^{\circ}59.3'$ should be disregarded. The 13 is from special investigation in 1873 and is one of four recorded soundings with 1 to 2 feet less depths than the present 15-ft. least depth. It would appear that there is a 2-ft. depth differential in the two surveys.
- (5) The 10-ft. prior sounding charted on 315 at Lat. $43^{\circ}47.1'$, Long. $69^{\circ}58.9'$ should be disregarded. This sounding falls in 15-ft.

depths on the present survey, with the preceding uncharted 11- and 14-ft. soundings on the same prior line falling in present depths of 17 feet to the west. The present 14-ft. depth could be on a sand shoal and, although it may not be the least depth, additional investigation is not warranted. The comparison indicates a sand shoal changed by current swirls.

6. Comparison with Wire Drag Surveys

a. H-6670 (1941-42) W.D., 1:10,000 Scale

This contemporary survey makes a small and satisfactory overlap on the southwest in Harpswell Sound.

b. H-6783 (1942) W.D., 1:10,000 Scale

With one exception the overlap on the south by this contemporary survey is satisfactory.

The questionable 34-ft. sounding on the present survey at Lat. $43^{\circ}42.97'$, Long. $69^{\circ}57.17'$ is cleared by a 46-1/2-ft. wire drag strip which overlaps the sounding by 30 meters. The graphic record for this sounding is questionable inasmuch as the graph indicates a vertical drop to 75 feet and also as a north and south line shows 60 feet at this position. The 34 is recorded between positions 141-142 f. Further consideration will be given when compared with wire drag surveys yet to be received.

H-6922 (1943) WD
does not disprove
the 34.
Disproved by
H-6922 (1945) W.D.
Add. WK.
10/4/45-G.F.J.

7. Comparison with Chart 315 (Latest print of 8-9-1943)

a. Hydrography

With the exception of a few soundings charted from the wire drag survey on the south and from chart letters giving advance information on the present survey the charted soundings and detail are from the prior surveys discussed in the preceding paragraphs.

In addition to the discrepancies already discussed there are a large number which originated during the recompilation and new engraving in 1920 and 1921.

- (1) No authority was found for the high water feature charted at Lat. $43^{\circ}48.4'$, Long. $69^{\circ}56.9'$ which the descriptive report notes as nonexistent. T-1012 (1865) shows a low water feature but H-857 (1864) is indefinite and probably was interpreted as showing a high water feature. The present air photo and hydrographic surveys show a sand shoal covered with 1 ft. at M.L.W.
- (2) No authority was found for the 25-ft. sounding charted at Lat. $43^{\circ}48.15'$, Long. $69^{\circ}57.3'$ and falling in 29-ft. depths on the present survey. The sounding first appears on the 1921 charts.
- (3) No authority was found for the rock awash charted at Lat. $43^{\circ}48.2'$, Long. $69^{\circ}57.0'$. This first appears on the 1921 charts. Prior and present surveys show only a long narrow sand bar. This is noted in the descriptive report.
- (4) The small circle over the 16-ft. sounding charted at Lat. $43^{\circ}48.1'$, Long. $69^{\circ}57.15'$ is obviously an error in reproduction.
- (5) The 6-ft. hand lead sounding charted at Lat. $43^{\circ}47.4'$, Long. $69^{\circ}54.9'$ has been carried forward from chart letter No. 464 (1910) and blueprint 13452, supplanting 8 feet on the present survey. The least depth obtained by development lines on the present survey was 8-1/2 feet, with no drift sounding. The 6-ft. depth was the result of special investigation, with observed tidal reductions, by party of N. H. Heck.
- (6) No authority was found for the 3-ft. sounding charted at Lat. $43^{\circ}47.77'$, Long. $69^{\circ}57.25'$ which falls in 18-ft. depths on the present survey. The sounding first appears on the 1921 charts.
- (7) No authority was found for a low water feature adjacent to the 6-ft. sounding charted at Lat. $43^{\circ}46.8'$, Long. $69^{\circ}56.85'$. This imperfection first appears on the June 3, 1942 chart.
- (8) No authority was found for the 35-ft. sounding charted at Lat. $43^{\circ}46.65'$, Long.

69°58.7'. H-839 (1863) shows 55 feet at this position. This sounding first appears on the 1921 charts.

- (9) The 10-ft. sounding charted at Lat. 43°44.95', Long. 69°59.4' is 40 meters north of its position on H-839 (1863). In addition the plotted position on line is considered too far west, according to close hydrography on an Engineers' survey, blueprint No. 20723.
- (10) No authority was found for the apparent ledge adjacent to the 3-ft. sounding charted at Lat. 43°45.7', Long. 69°57.8' which first appears on the 1921 charts.
- (11) No authority was found for the long pier charted at Lat. 43°45.5', Long. 69°58.6'. The present air photo shows a short dock, the long pier which appears on the 1912 charts probably having been destroyed.
- (12) The rock awash charted at Lat. 43°45.05', Long. 69°59.35' from chart letter No. 357 (1926) but originating from blueprint 20723 should be retained. The position is marked on the present survey by a prick-punch hole 50 meters north of the present 3-ft. sounding.
- (13) No authority was found for the 8-ft. sounding charted at Lat. 43°44.85', Long. 69°59.0'. Prior to 1921 the charts show 18 feet, in agreement with the 15- to 20-ft. depths on the present survey.
- (14) No authority was found for the 19-ft. sounding charted at Lat. 43°44.80', Long. 69°59.2'. This first appears on the 1921 charts. H-857 (1864) shows 3-3/4 fathoms.
- (15) The disagreement between the chart and the present survey in the detail of Middle Ground Rock at Lat. 43°44.0', Long. 69°57.3' has been thoroughly investigated. A lengthy discussion is not considered necessary. The present survey should be accepted as correct and adequate.
- (16) RoundRock, charted at Lat. 43°43.2', Long. 69°57.55' is 50 meters west of its correct position, as shown on prior and present surveys.

- (17) The 22-ft. sounding charted at Lat. $43^{\circ}42.85'$, Long. $69^{\circ}57.1'$ is from chart letter 553 (1943), which gives advance information on the 1943 wire drag surveys. *20 ft on H-6922(1943)W.O.*
- (18) The name Dipper Cove Ledges charted at Lat. $43^{\circ}47'$, Long. $69^{\circ}58.2'$, at the entrance to Reed Cove, is confusing. According to the Section on Geographic Names, the name applies to the ledges at the west approach to Dipper Cove.

b. Controlling Depths

There are no dredged channels within the area of the present survey.

c. Aids to Navigation

The present survey is in agreement with the charted navigational aids. Red spar buoy No. 4 charted at Lat. $43^{\circ}45.25'$, Long. $69^{\circ}59.4'$, not located on the present survey, is shown in agreement on H-6732 (1941-1943).

No additional navigational aids are recommended.

8. Condition of Survey

- a. The sounding records are satisfactory. Three sounding records are included with the records of H-6857 (1943), the survey in the north end of Harpswell Sound.
- b. The descriptive report for the 1942 work is very brief. The 1943 report is complete in all detail.
- c. This survey covers an area a large part of which appears to be silt bottom covering a very irregular rock strata to a depth of 20 feet in some areas. This is readily discernible on the fathograms and explains the existence of such small sharp shoals as the 29-ft. sounding in 36-ft. depths at Lat. $43^{\circ}47.4'$, Long. $69^{\circ}58.35'$ or the 9-ft. shoal in 20-ft. depths at Lat. $43^{\circ}46.95'$, Long. $69^{\circ}55.83'$. These are definite pinnacle rocks.
- d. The existence of such sharp submarine features requires a very careful consideration for the occasional strays which appear on the fathograms. The 1943 fathograms show an excessive number of strays. Note the tracing in the descriptive

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

AND REFER TO NO.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON 25



report which shows development to disprove one stray out of a large number shown on the fathograms. Some had been plotted on the boat sheets as soundings although identical to other strays. However, it is believed that no actual strays or tops of kelp are shown as soundings except as may be noted below:

- (1) The 34-ft. sounding discussed in Par. 6b.
- (2) The least depth on the pinnacle rock marked by the 11-ft. sounding at Lat. $43^{\circ}46.12'$, Long. $69^{\circ}56.26'$ is in doubt. The 11-ft. sounding is from a regular line by the OGDEN at pos. 55B. Close development lines by launch 82 show a clear profile to a least depth of 17 ft. Drift sounding would have been advisable on this pinnacle rock. The charted 13 at this position is from advance information on the present survey.
- (3) The 19-ft. sounding at Lat. $43^{\circ}45.38'$, Long. $69^{\circ}57.74'$ over a pinnacle rock may be on top of kelp with 22 feet as the actual least depth. Six fathometer lines were run over this shoal, but none of the lines shows profiles sufficiently clear as to define the least depth.
- (4) A rock covered with 1 foot and shown as a rock awash at Lat. $43^{\circ}45.42'$, Long. $69^{\circ}57.12'$ might actually be covered with 6 feet. The fathogram is not clear.
- (5) The 14-ft. sounding at Lat. $43^{\circ}43.05'$, Long. $69^{\circ}57.66'$ before pos. 49b may be a stray with least depth of 29 feet or a side echo. Sounding line 49"K" passes over this position with least depth of 30 feet. Investigation would have been desirable. Further consideration is anticipated in comparison with 1943 wire drag surveys. *excluded on H-6922 (1943) W.D.*
10/4/45 - Disproved - cleared by 17' on H-6922 (1945) W.D. Add. WK.
- (6) The 4 (4-1/2) foot sounding at Lat. $43^{\circ}45.55'$, Long. $69^{\circ}57.08'$ on the south side of the buoyed passage, scaled from the fathogram at pos. 112"r", may be 1-1/2 feet too shoal. The graphic record is broken due to interference from lobster pots. A special lead line

investigation in 1910 shows a least depth of 7-1/2 feet. However, the fathogram shows 5-1/2 to 6-ft. depths at 111"r".

- (7) The 10-ft. sounding at Lat. 43°47.56', Long. 69°57.77' may be a stray from 16 ft. at pos. 92"g".
- e. An examination of the smooth sheet indicates the large amount of development accomplished. This is a very difficult area to develop completely because of the irregular bottom. More use of drift sounding for least depth on pinnacle rocks would have been desirable, as well as verification or disproval of such charted soundings as the 16 in 26-ft. depths at Lat. 43°44.1', Long. 69°59.0', the 27 in 45-ft. depths at Lat. 43°44.38', Long. 69°58.94' and the 1/2 foot in 12-ft. depths at Lat. 43°47.15', Long. 69°58.13'.
- f. Check angles on detached positions of all features would have been desirable. One rock awash at M.L.W. in 20 feet, at Lat. 43°46.55', Long. 69°55.4', remains questionable until receipt of the overlapping survey on the east. This rock was located by a single fix at pos. 91"v". The air photo shows a rock uncovering 2 feet at M.L.W., 100 meters N.W., adjacent to a 2-ft. sounding. ^{confirmed on H-6806 (1942) 11/10/44 - G.F.D.} ~~It is believed there is only one rock at the northwesterly location.~~
- g. As the fathometer was used practically exclusively in the development of shoal areas few bottom characteristics were obtained on these shoals. However, a general coverage of the whole area was made for bottom samples.
- h. The smooth plotting was satisfactory.
9. Compliance with Instructions for the Project
- The present survey complies with the general instructions for the project except that the boat sheet for the party on launch 82 was not marked with the location of critical charted depths as noted in the preceding par. e.
10. Additional Field Work
- No additional field work is recommended, pending receipt of the contemporary wire drag surveys and the junctional survey on the east. The features in question are as follows:

- a. The prior 16-ft. sounding noted in par. 5a(9). *accomplished*
- b. The present rock awash noted in par. 8f. *accomplished*
- c. The present 14-ft. sounding noted in par. 8d(5). *accomplished*
- d. The present 34-ft. sounding noted in par. 6b. *accomplished*
- e. Least depths on the 22-ft. shoal noted in *accomplished* par. 3d.
- f. Other questionable depths discussed in par. 8 are not considered of sufficient importance to warrant additional work. Similarly, additional work on curves discussed in par. 3 is not considered warranted. Additional work in Wills Strait is obviated by the use of the U. S. Engineers' blueprint discussed in par. 3a.

With the above exceptions, the present survey is considered a basic survey.

11. Superseded Surveys

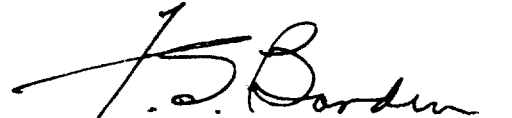
The following surveys are superseded, in part:

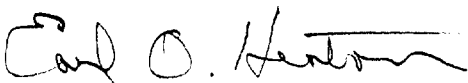
H-839 (1863-1873)


H-857 (1864-1874)

Examined and approved:


Chief, Surveys Branch


Chief, Division of Charts


Chief, Section of Hydrography


Chief, Division of
Coastal Surveys

Applied to Reconstruction of Chart 315 May 11, 1944 - J.T.W.

applied to Chart 201. June 19, 1944. P.A.M.

Partially applied to Ch 1204 - 3/6/45 - J.T.W.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO.

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. ~~5A and 7B~~

REGISTER NO.

State Maine

General locality Casco Bay

Locality Harnswell Sound and vicinity

Scale 1:10000 Date of survey May - July, 1943

Vessel 25 ft. Skiff

Chief of Party Henry J. Healy

Surveyed by Harry D. Read, Jr.

Protracted by R. J. Christman

Soundings penciled by R. J. Christman

Soundings in fathoms feet

Plane of reference

Subdivision of wire dragged areas by

Inked by G. F. Jordan

Verified by G. F. Jordan

Instructions dated May 7, 1941, March 11, 1942
June 13, 1942, March 16, 1943, Apr. 30, 1943

Remarks: Plotted in Wash. office before completion of
verification of 1942 work. Soundings accordingly not inked
in color

(PROJECT CS-265)

Descriptive Report to Accompany Field Sheets ~~7A and~~ 7B,

Harpwell Sound, Maine and vicinity.

DATE OF INSTRUCTIONS. Original Instructions for project CS-265 were issued under date of May 7, 1941. Subsequent supplemental and amended instructions were issued under the following dates: ~~March 11, 1942, June 13, 1942, and March 16, 1943,~~ *Apr. 30, 1943*

SURVEY METHODS. The purpose of this survey was to complete the holidays left in Harpswell Sound after the 1942 field season and to survey several small coves to the north of Harpswell Sound.

Field work was accomplished between May 10 and July 23, 1943, inclusive. Standard hydrographic survey methods were used in making this survey. Equipment used included a 25 ft. skiff, powered by an outboard motor. Soundings were made with the 808 fathometer with the transceiver mounted in a well in the keel of the skiff. This method of mounting the transceiver gave very satisfactory results and was especially useful in shoal water making it possible to operate without danger of fouling or injuring the unit. This danger was always present when the unit was mounted in a "fish" secured to the side of the sounding launch. The gain control was kept at the maximum setting possible at all times. The average setting being about 8.5 except when depths of approximately 5 ft. or less were encountered. It was then sometimes necessary to lower this setting to 1.0.

Soundings were scaled from the fathograms at 15 second intervals except where critical depths occurred between these intervals.

Descriptive Report to Accompany Field Sheets ~~7A~~ and 7B,

Harpwell Sound, Maine and vicinity.

The middle reed of the tachometer on the fathometer was kept vibrating at constant speed so that the relative time intervals could be taken directly from the fathogram. The clock times recorded were for the purpose of assisting in applying the tidal reductions only.

An average of two bar checks per day were made, setting the fathometer to read correctly at a bar setting of 20 ft. before beginning the check at other depths. After the 20 ft. setting was made the initial adjustment was not touched again until the next bar check. A close watch was kept on the initial setting during sounding operations and when any change became apparent a bar check was taken immediately. However it was only necessary to do this on one or two occasions.

CONTROL. Control for these sheets was located by plane table, sextant cuts, and air photo methods. A large percentage of the signals built and located in this area during 1942 were recovered and rebuilt. Air photo control covering the northern part of the area was secured, but very little use could be made of this due to the lack of control points spotted and the difficulty encountered in identifying these points in the field. This made it necessary to spend additional time building signals and locating them by sextant cuts. The sextant angles were recorded and are included with the sounding records.

*This applies
to H-6857
to the north*

DANGERS. No additional dangers other than those shown on the charts of this area were found. several rocks and shoal spots shown on Chart 315 were marked by the Washington Office for investigation.

Descriptive Report to Accompany Field Sheets ~~7A and 7B~~,.

Harpswell Sound, Maine and vicinity.

These were covered during the course of the survey with the following results:

1. - Lat. $43^{\circ}-45'.6$, Long. $70^{\circ}-00'.0$, Harpswell Harbor, soundings of ~~1~~¹⁵ ft. and 17 ft. Investigation showed a shoal sounding of 1 ft. ** and 18 ft curve on smooth sheet* in this area. A depth of 17 ft. was also found in the approximate location given on the chart. Development shows a spit making out to the NE. Sand bottom. (Note: This investigation made as per directors letter of April 30, 1943 to Commanding Officer, Ship LYDONIA. Marked on Chart 210)
2. - From 839 (1863)
 - a. Lat. $43^{\circ}-45'.6$, Long. $69^{\circ}-59'.3$, 13 ft. spot. A least depth of ~~13~~¹⁵ ft. was obtained in this area. *Boat sheet tide reducers in error by 7 ft.*
 - b. Lat. $43^{\circ}-45'.8$, Long. $69^{\circ}-59'.0$, 30 ft. spot. A least depth of ~~20~~³³ ft. was found. *Boat sheet tide reducers, same day as above, in error by 5 ft.*
 - c. Lat. $43^{\circ}-46'.3$, Long. $69^{\circ}-59'.6$, a 15 ft. shoal. Depths of 14 ft. were obtained in this area.
 - d. Lat. $43^{\circ}-47'.0$, Long. $68^{\circ}-58'.7$ - 8 ft. spot. A least depth of 4 ft. was found using the hand lead.
 - e. Lat. $43^{\circ}-46'.5$, Long. $69^{\circ}-59'.2$ Merriman Ledges, and Lat. $43^{\circ}-46'.8$, Long. $69^{\circ}-58'.5$ ~~Beeper Cove Ledges~~. These areas were covered in the course of the 1942 surveys and no further investigation was made.

Descriptive Report to Accompany Field Sheets ~~7A~~ and 7B,

Harpwell Sound, Maine and vicinity.

3. - From H-857 (1864-65)

a. Lat. $43^{\circ}-47'.7$, Long. $69^{\circ}-57'.8$, 16 ft. spot. This is at the tip of a spit making out to the NW from Wyer Island. Several soundings of from ~~12~~⁹ to 14 ft. were obtained in this area.

b. Lat. $43^{\circ}-48'.2$, Long. $69^{\circ}-57'.2$, Vicinity of Uncle Zeke Island. There is a long, narrow sand and shell spit making out to the NE of Uncle Zeke Island. This spit is bare at low water. No evidence was found of the rock awash shown to the NE of Uncle Zeke Island.

No authority
for charted
rock.
erased from 1204
2.7.11.6

4. - From H-1008 (1869)

a. Lat. $43^{\circ}-49'.8$, Long. $69^{\circ}-56'.8$, 12 ft. and 18 ft. soundings. This area was covered with closely spaced sounding lines and a least depth of 9 ft. obtained.

b. Lat. $43^{\circ}-50.8$, Long. $69^{\circ}-56'.3$, Two rocks awash. This area was searched thoroughly at low water. Both the fathometer and lead line were used. However no evidence of any rocks could be found.

c. Lat. $43^{\circ}-50'.4$, Long. $69^{\circ}-55'.8$, Rock awash. A thorough search of this position at low water with the fathometer and lead line failed to show any evidence of a rock. However there is a large rock awash approximately 60 meters SE of this position. This rock was located by a sextant fix on "x" day.

d. Lat. $43^{\circ}-51'.6$, Long. $69^{\circ}54'.9$, 1 ft. spot. This is a mud lump about 10 to 12 meters in extent. From local information it was learned that the top of this lump is sometimes bare during periods of extreme low water and in covering it with the fathometer, a zero sounding was obtained.

These items
transferred
to Descriptive
Report for
H-857(1942)

Descriptive Report to Accompany Field Sheets ~~7A~~ and 7B,

Harpswell Sound, Maine and vicinity.

However no part of this spot was visible above water during the times the hydrographic party was in this area.

B. - Miscellaneous

In addition to the above this party investigated the following positions for possible rocks and shoals with results as follows:

a. Lat. 43°-45'.1, Long. 69°-59'.6, Rock shown on ~~1942~~ ^{F 5963} field sheet.

No evidence of any rock found. ~~This was probably a stray on the fathogram.~~

(Investigated at request of the Commanding Officer, Ship LYONIA) *Field Report on rock is sent in Desc. Report for H-6732(1941-43)*

b. Lat. 43°-48'.3, Long. 69°-56'.9, A 2 ft. spot showed on the

fathogram. This was investigated thoroughly on "aa" day with both the fathometer and lead line but no evidence of any shoal or rock could be found. *It was decided that the 2 ft. sounding was due either to kelp which is generally plentiful in this area or to lobster traps. The results of this investigation are plotted on ~~sheet 7-A~~. ^{tracing cloth included in this report.}* *excessive number of similar strays on most days.*

c. Lat. 43°48'.5, Long. 69°57'.1, 2 and 4 ft. soundings. A thorough

coverage of this area on "bb" day failed to show any sounding of less than 9

ft. The shoaler soundings are probably strays or due to kelp. The results of this investigation are ~~attached to sheet 7-B~~. *included on same tracing above. 2 and 4 ft soundings controlled by erroneous position.*

d. Lat. 43°-48'.4, Long. 69°-56'.8, A small island at this point

on chart 315. There is no island here and it is recommended that this be ~~expunged~~ ^{concur. Review Par. 7a(1)} from the chart.

COMPARISON WITH PREVIOUS SURVEYS. As there were no previous surveys

of this area available, no comparisons other than those described under DANGERS were made. In general, there was ^{fair} ~~good~~ agreement with chart 315.

Descriptive Report to Accompany Field Sheets 7A and 7B,

Harpswell Sound, Maine and vicinity.

TIDAL DATA, ETC. No tide gage was installed for this survey. Soundings were reduced for tide using daily tide curves drawn from data taken from "Tide Tables, Atlantic Ocean, 1943", for Portland, Maine. No serial temperature or salinity tests were made.

GENERAL. This area ^{includes} ~~consists mostly of long,~~ narrow coves and reaches several of which are practically bare at low water. The bottom is mostly soft gray mud with some sand and shell. The channels are narrow and there are strong tidal currents which made it difficult to run straight courses with the sounding launch.

The area is of relative unimportance to navigation. Practically all traffic from the south end of Harpswell Sound northward consists of lobster fishing boats and small pleasure craft, none of which draw more than 3 or 4 ft. A small steamer from Portland formerly, made a regular run to Harpswell Sound, and as far north as Simon Gurnet, but this has been discontinued for the past year or more.

<u>STATISTICS.</u>	Number of positions	1612
	Statute miles of soundings	206.2
	Area, 3.5 square statute miles	

combined work
with H-6857
for 1943.

Harry D. Reed, Jr.

Harry D. Reed, Jr.
Lieut. (jg) USC&GS

Approved and Forwarded

Henry J. Healy
Henry J. Healy
Lieut. Comdr., USC&GS
Chief of Party

Combined bar check graphs on cross-section
paper are included with D.R. H-6857 (1943)

$43^{\circ} 49'$
 $69^{\circ} 57'$



Development referred to in Desc. Report, page 5, bar b.
Necessary soundings have been transferred to smooth sheet.

J. H. Hawley
821

Chart Division

SPH

22-ES
1975 NK 4

November 5, 1943

To: Supervisor, Southeastern District
U. S. Coast and Geodetic Survey
1001 Monticello Ave.
Norfolk 10, Virginia

From: The Director
U. S. Coast and Geodetic Survey

Subject: Additional work on hydrographic sheet H-6809

When the records have been processed for smooth plotting the additional 1943 work on hydrographic sheet H-6809, Field No. 7, it is requested that they be forwarded to this office.

The soundings are now being inked on this hydrographic sheet and it will be desirable to add the new work in this office before the review is made.

(Signed) J. H. HAWLEY

Director
Acting

WS
HHL

TIDE NOTE FOR HYDROGRAPHIC SHEET

December 10, 1943

~~Division of Hydrography and Topography:-~~

Division of Charts: Attention: H. R. EDMONSTON

Plane of reference approved in
10 volumes of sounding records for

HYDROGRAPHIC SHEET 6809

Locality Harpswell Sound, Casco Bay, Maine.

Chief of Party: H. J. Healy in 1943
Plane of reference is mean low water reading
8.6 ft. on tide staff at Portland
19.0 ft. below B. M. 31

Height of mean high water above plane of reference is 8.9 feet.

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents.