6661

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

6661

Type of Survey Hydrographic

Field No. 21 Office No. H-6661

LOCALITY

State Maine

General locality Casco Bay

Locality Western Part

1941

CHIEF OF PARTY
I. E. Rittenburg

DATE

B-1870-1 (1)++

Form 537
Ed. Dec. 1930

REG. NO. H6661

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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. 21

REGISTER NO. H-6661

State Maine

General locality Casco Bay

Locality Western part

Scale 1:20,000 Date of survey May 14 - Aug. 7, 1941

Vessel Launches MITCHELL & OGDEN

Chief of Party I. E. Rittenburg

Surveyed by Ross A. Gilmore and John C. Ellerbe

Protracted by H. J. Bozzo

Soundings penciled by H. J. Bozzo

Soundings in ~~fathoms~~ feet

Plane of reference M.L.W.

Subdivision of wire dragged areas by

Inked by G. B. LITTLEPAGE

Verified by G. B. LITTLEPAGE

Instructions dated May 7, 1941

Remarks:

U. S. GOVERNMENT PRINTING OFFICE

DESCRIPTIVE REPORT

To Accompany Hydrographic Sheet H-6661

INSTRUCTIONS

This survey was made in accordance with the Director's Instructions dated May 7, 1941 for project CS-265, Casco Bay, Maine, and addressed to the Commanding Officer, Ship OCEANOGRAPHER.

LIMITS

The northern limit of this sheet joins with field survey No. 1002 of the OCEANOGRAPHER, 1941, at Lat. 43° 40'.25, Long. 70° 09'.60 and extending due east to Long. 70° 05'.0, thence to a point at Lat. 43° 41'.0, Long. 70° 01'.0 and thence to Lat. 43° 43'.0, Long. 69° 59'.0. H-6677 (1941) The western limit joins with field surveys Nos. 1001 and 1006 of the OCEANOGRAPHER at the above beginning point and extends southwest to Lat. 43° 38'.0, Long. 70° 11'.0, thence south to Lat. 43° 36'.0, which is the southern limit of this survey. The ~~western~~ eastern limit is Long. 69° 59'.0. The inshore areas in the vicinity of the Inner and Outer Green Islands were not undertaken on this survey but were done by the OCEANOGRAPHER on a 1:10,000 scale (see field survey 1002, OCEANOGRAPHER). The inshore area in the vicinity of Halfway Rock was not surveyed on this project as it will be done by the OCEANOGRAPHER on a larger scale. Not surveyed in 1941.

SURVEY METHODS

All control for this survey consists of recovered triangulation stations of C. A. Durgin, 1933 and prior surveys, and topographic stations located by surveys of the OCEANOGRAPHER, 1941.

Hydrography was accomplished by the usual sextant fix method and sounding lines were run by compass courses and ranges. Hydrography was done between the dates of May 14 and Aug. 7, 1941.

The Launches MITCHELL (green day letter) and OGDEN (blue day letter) were engaged in this survey. The launches were run at full speed, except when sounding in shoal areas. All sounding was done with the 808A fathometers, except in a few instances where drift leading was done over kelp covered shoals. Both launches had the "fish" set 3 feet below the water surface and the index correction was made accordingly on the fathogram. Soundings were taken in feet where the depth remained fairly regular and in fathoms where the depth became too irregular and deep for convenient reading of the fathogram since soundings were recorded directly from the fathogram in the field by the fathometer operator. Bar checks were taken at least twice a day. Leadline - fathometer comparisons (beyond the bar check depth) were taken when the launches were stopped for salinity observations, and at other times when convenient. Bar checks were made every 5 feet up to 25 feet with a 30 foot length of 1" galvanized iron pipe attached to a 15" x 24" sounding board. Deeper checks were taken by means of the leadline. This sheet was divided at Lat. 43° 38' into two sections, the Launch OGDEN doing the northern half and the Launch MITCHELL the southern half. The boat sheet used by the MITCHELL was also used as

the "End Launch" sheet for wire drag sheet No. H-6662.(1941)

Practically all of the northern section of this sheet was in previously undragged area so that the spacing of lines was generally held to 100 meters. Where further development was necessary these lines were split and in some cases a new system of lines at 45 or 90 degrees to the first, were run at 100 meters or less. Old shoal soundings from the chart were investigated thoroughly except at the northeast corner of the sheet where further developing was not done due to insufficient time being available. No particular development was undertaken on shoals that fell within the 1914 wire dragged area.

Sounding lines on the southern section of the sheet were spaced at 150 meters to Long. 70° 04', and 300 meters beyond to the eastward. This spacing was in accordance with the instructions (par. 19) that sufficient soundings should be taken to delineate the depth curves only, since the area had been previously wire dragged. Later, however, it became apparent that the foregoing was impossible with the spacing planned, therefore, the offshore lines were split and some development accomplished on the inshore end of the sheet. A thorough development was attempted only on Bulwark Shoal, other old shoal soundings being checked only approximately.

It is felt that additional work should be done on the southern section of the sheet, particularly in areas where old soundings were not checked by a large margin. The present survey indicated that several of these soundings are erroneous, but this can be proved only by considerable additional work.

Rev. par. 10.

Cross lines were run at approximately 10% of the general system of lines. Crossings were exceptionally good, considering the irregularity of the bottom in this area. Bottom samples were obtained when the launch was stopped to take serial temperatures and salinities.

See Rev.

Depth curves were pencilled on the boat sheet from day to day, thus additional development was indicated as the field work progressed. These curves were later inked-in in appropriate colors.

All floating aids to navigation within the limits of this survey have been located by sextant fixes and check angles immediately at the aid. The Can on "The Hussey" at Lat. 43° 39'.55, Long. 70° 08'.80, has been replaced by a flashing light since the date of its location.

PROCESSING RECORDS

On the OGDEN, all recording was done originally in the regular sounding volume, except the soundings, which were recorded on a loose leaf form by the fathometer operator, so that they could be plotted daily on the boat sheet. Later, when the fathogram could be rescaled, the soundings were entered in the sounding volume, where sufficient space had been left by the recorder between position numbers. Soundings were scaled from the fathogram at regular spaced intervals between positions (indicated on the fathogram by the fix button) and entered in the record. No times were entered for individual soundings between positions except when an odd sounding (usually a shoaler one) was

~~See~~ ~~Ver Report~~ ~~P-33-1~~ See Rev. par. 8.

recorded; then its location was indicated by a plus amount, in seconds, from the preceeding sounding. On "L" day, however, when an odd sounding from the general even spacing occurred, the times of all soundings between the two positions concerned were indicated. "L" day was the first day that soundings were entered in the sounding volumes and as this method proved too slow and unnecessary, the simpler system mentioned above was used throughout in recording all other soundings in the records.

On the MITCHELL, recording was done on the new loose leaf forms furnished this party for field trial, the soundings being recorded on one type of sheet and the fixes, times, remarks, etc. on another type. Later, when the fathograms were rescaled, the soundings were entered in the regular type sounding volume in the manner afore mentioned for the OGDEN soundings, and the loose leaf sounding sheets were discarded. The loose leaf sheets of fixes, etc., being the original record, are retained and submitted with the volumes containing the soundings.

The method used on the OGDEN is considered th most satisfactory until some better method of scaling, entering, and reducing the 808A fathometer soundings is devised.

FATHOMETER CORRECTIONS

Both launches used an 808A fathometer, the OGDEN fathometer being called 808A OGDEN, and the MITCHELL the 808A MITCHELL in all correction computations. On May 20 and 21, hydrography was done by the MITCHELL using the 808A OGDEN fathometer and the corrections for these 2 days were made accordingly.

Serial temperatures and salinities were obtained at various scattered positions on the sheet and in most cases fathometer - leadline comparisons were obtained at the same time. Too much weight could not be given, however, to these comparisons in working up the corrections, as the bottom is too irregular in this locality to give good comparisons. Serials were taken only by the OGDEN and the results obtained were incorporated into the MITCHELL corrections.

All corrections were computed on a weekly basis (except the first period, May 14 - 23) assuming that no appreciable difference in velocity of sound would occur due to change in temperature of the water during this period of time. Corrections have been based on the available data for each weekly period and the method used for determining the corrections as noted on the curves included in this report. Velocity corrections have been computed from the British Admiralty Tables using a rated velocity of 820 fm/sec (1499.6 m/sec) for both fathometers and are included in this report together with the weekly averages of daily bar checks and leadline - fathometer comparisons. The actual correction values used for each period are indicated on the curve sheets.

PROCESSING RECORDS - CONTINUED

In scaling the fathograms, attention is invited to several ~~invited to several~~ instances where a difference in interpretation of shoal soundings could be made due to kelp. The following cases are the most outstanding on this survey:

A-1 The sounding ½ interval after position 34n (blue) has been interpreted as 13 feet (reduced) whereas the fathogram indicated a sounding 4 feet shoaler due to kelp. This sounding is on a known shoal (The Hussey). ~~P 33-2~~ The office interprets the 9 ft. sounding as correct. Lat. 43° 39.5', Long. 70° 08.8'

Fathograms for K day (green) should be scrutinized very carefully in the Office since the soundings are rather indistinct in some places. Positions 25 to 58 inclusive, were on lines run over Bulwark Shoal, where the shoalest sounding previously recorded was 13 feet. Recordings on the fathogram indicate 7 feet but subsequent wire dragging of the area disproved this sounding. It is therefore assumed that the depth indicated was from a heavy kelp bed which is known to exist in this area. The same situation applies to several other soundings, as listed below. No sounding which was less than the effective depth of the drag was accepted. A very thorough investigation (2½ hours drift sounding with both fathometer and leadline) on "1" day (green) showed a least depth of 13½ feet by leadline, checked by fathometer. Particular attention is called to the soundings listed below:

B 1: Position 34 plus 3½ sounding intervals, "k" day (green), a sounding of 13 feet (reduced) indicated on fathogram falls in an area dragged to an effective depth of 11 feet. However, this sounding is less than indicated by leadline and there is some question as to whether it lies in an area covered by drag at 14 feet, its position falling at a grounding on which 14 feet was obtained. It should therefor be scanned very carefully in the Office. 13 ft sdg definitely not cleared by 14 ft strip. 11 ft sdg carried forward. 11 feet accepted as least depth. Lat. 43° 36.1' Long. 70° 04.4' Drag on H-6662 grounded at 11 ft Also checked at 11 ft.

2. Position 38 plus 1 sounding interval (k day green), an apparent sounding of 12 feet (reduced) was interpreted in the field as 22 feet (reduced) upon further examination of the fathogram. This sounding falls outside of the dragged area and there is therefore no check on its reliability; however, it is felt that the indicated 12 feet may be a sounding from kelp, since there is indication of a second sounding of 22 feet under the 12 feet peak. See ver. report P 33-3 Lat. 43°36.0', Long. 70°04.3. Office scanning interprets 16 ft. at this point.

3. The soundings between positions 44 and 45 ("k" day, green) were very hard to determine and their interpretation should be checked in the Office. Checked.

4. The sounding before position 50 "k" (green) is apparently 7 feet (reduced) but further examination of the fathogram revealed indications of 19½ feet (reduced). Since the 7 foot sounding falls in an area covered by drag and is therefor automatically rejected, the 19½ ft. indication was accepted as the true sounding. O.K.

SMOOTH SHEET

The smooth sheet was plotted according to the usual standard practice, all fixes being plotted with a tested steel protractor except when signals fell within the limits of the protractor circle, a celluloid protractor was used.

Shoreline as depicted on the smooth sheet was transferred from existing surveys prior to 1941 and is not to be used for charting purposes. Rev., par. 1.

Soundings were plotted in accordance with the spacing indicated in the records as previously noted and in congested areas the shoalest soundings only were shown. Particular care was taken when plotting the soundings, to look for erroneous soundings and any questionable soundings were rescaled on the fathograms.

COMPARISON WITH PREVIOUS SURVEYS

Prior to the field work, soundings were transferred from charts 201, 315 and 1204 to the boat sheet and while the field work progressed a comparison was made between these and the new soundings and where warranted a particular effort was made to prove or disprove any discrepancies between the two.

In the area of the 1914 wire drag survey, which is indicated on the boat sheet by the cross hatched line, in accordance with par. 19 of the Instructions, no attempt was made to develop old shoal soundings. Differences, therefore, of five to ten feet are not noted. Following, however, is a list of the larger discrepancies, which could have been investigated more thoroughly had time permitted:

1. Lat. 43° 36′ plus 1320 m., Long. 70° 05′ plus 945 m. A sounding of 51 feet. This sounding lies on a steep slope (153 to 77 feet) but no indication of greater shoaling was found. This sounding should be investigated. Not retained. See Rev., par. 5 (10)

2. Lat. 43° 36′ plus 80 m., Long. 70° 05′ plus 440 m. A sounding of 57 ft. This sounding lies on the edge of a 150 ft. valley, with no indication of shoaling in the near vicinity. It is felt that it may be 157 ft. instead of 57. Should be investigated in the Office for this possibility before further field investigation is undertaken. Charted sdg. is 97. No discrepancy.

3. Lat. 43° 36′ plus 1470 m., Long. 70° 04′ plus 370 m. A sounding of 44 ft. Since this sounding falls practically on the 150 ft. curve, it is possible that it should be 144 ft. It is recommended that this possibility be thoroughly investigated in the office before further field investigation is attempted. See Rev. par. 6, #21-4

4. Lat. 43° 37′ plus 1550 m., Long 70° 02′ plus 1030 m. A sounding of 46 ft. This sounding is very near the 150 ft. curve and could be 146 ft. This possibility should be investigated in the office before field investigation is attempted. Not retained. See Rev., par. 5 (21)

5. Lat. 43° 37′ plus 1600 m., Long. 70° 00′ plus 35 m. A sounding of 70 ft. May be in error by 100 ft. It is practically on the 150 foot curve and could be inside considering slight misplacement by transfer from the chart. Should be investigated in the office to determine its authenticity. 70 carried. See Rev., par. 5 (23)

6. Lat. 43° 38′.10, Long. 70° 04′.12. The charted 141 foot sounding appears in error but is probably displaced in position as it is quite close to a steep slope. Not retained. See Rev., par. 5 (12)

7. Lat. 43° 38′.41, Long. 70° 03′.79. The charted 156 foot sounding is in an area of nothing less than 174 ft. 153 ft. 200 m. SE on present survey. Not mentioned in Rev. Disregard 156.

8. Lat. 43° 38′.41, Long. 70° 03′.34. The charted ~~153~~ 159 ft. sounding

falls within an area of over 200 ft. but this sounding is quite near the bottom of a steep slope and a little displacement in position would account for the great difference. 159 not retained. See Rev., par. 5(19)

9. Lat. 43° 39.44, Long. 70° 00.98. The charted 44 ft. sounding falls within an undeveloped area but originates from the 1914 wire drag survey and should be retained. Retained. From H-3677(1914)W.D.

North of the 1914 wire drag survey a particular effort was made, within the ~~allotted~~ time permitted for this survey, to prove or disprove discrepancies between charted soundings and those obtained from this survey. In as much as this area was also subsequently wire dragged (see sheet No. H-6662)(1941) a good check was obtained on the shoaler sounding which came within the limits of the drag depth. The previous hydrographic surveys in this area north of the 1914 wire drag area were made over 70 years ago and can not be subjected to too close a comparison with the present survey, considering the methods used then and now. The following outstanding discrepancies are noted:

1. The charted 38 ft. sounding in Lat. 43° 38.69, Long. 70° 10.47 falls within an area over 45 feet. However, there is a shoal area approximately 0.15 mile south of this charted sounding with a least depth of 39 feet. (Later wire dragging showed ~~37~~ 34 feet to exist and was covered by 34 feet) It is possible that the charted 38 ft. is out of position. Disregard 38. See Rev., par. 7a(1).

2. The charted 79 ft. sounding in Lat. 43° 39.62, Long. 70° 07.37 falls within an area of not less than 100 ft. No attempt was made to disprove this sounding other than by the regular system of sounding lines. Disregard 79. See Rev., par. 5(6)

In areas where the bottom is fairly regular the old soundings compare favorably with the present survey. In irregular bottom the differences appear to be in most cases a matter of difference in position rather than depth, although in some cases shoal areas were missed entirely by the previous surveys. These instances are covered under new dangers found.

DANGERS AND SHOALS

The existing dangers and shoals on this sheet may be listed under two headings as - A."Newly found dangers," and B."Previously known dangers which have been developed further". Some of the former were found by wire drag, but will be listed in this report.

A. New Dangers and Shoals Found:

1. Lat. 43° 40.05, Long. 70° 02.48 - A 28 ft. sounding obtained from wire drag survey H-6662 (1941) (by the same party) in a charted area of over 60 feet. In 34 foot area this survey 83

2. Lat. 43° 40.21, Long. 70° 06.35 - A 5 foot sounding on the edge of the charted 18 ft. curve. This shoal sounding is on a ledge which extends north from Inner Green Island (see field survey No. 1002, for further development of this area). (not in office) See Rev., par. 7a(3)

3. Lat. 43° 40.19, Long. 70° 02.42 - A 34 ft. sounding in a charted area well over 100 feet.

4. Lat. 43° 39'.86, Long. 70° 02'.48 - A 28 ft. sounding in a charted area of over 60 ft. (from W.D. H-6662) 1941 Cases 1, 3 and 4 are on a ridge which extends for a distance of 0.9 mile north of Halfway Rock with less than 60 ft. of water.

5. Lat. 43° 39'.02, Long. 70° 02'.45 - A ~~36~~ 35 ft. sounding in a charted area of 45 feet. from H-6662 (1941) W.D. 93

6. Lat. 43° 40'.97, Long. 70° 00'.85 - A 21 ft. sounding in a charted area of over 35 ft. ~~23 ft on charts~~ 23 ft. now charted from advance information.

7. Lat. ~~43° 40'.85, Long. 70° 00'.82 - A 52 ft. sounding in a charted area~~ near the 60 ft. curve

B. Previously known dangers which have been developed further:

1. Bulwark Shoal, at the northern end of a series of ridges beginning S.E. of Cape Elizabeth and running to the northeast. The least depth on this shoal was previously 14 feet. A determined effort was made to find less water if such existed, particularly since an indication of about 5 feet was obtained with the 808 depth recorder while running the regular system of sounding lines. Subsequent development however, consisting of 2 hours of drift sounding with both fathometer and leadline, plus ½ hour of running concentric circles around a marker buoy planted on the shoal, failed to find less than 13½ feet. A heavy kelp bed at this spot probably caused the fathometer sounding of 5 feet, although the sounding appeared good on the fathogram. To determine conclusively that the above sounding was erroneous, the area involved was wire dragged to an effective depth of 11 feet. Accepted least depth on this shoal is 13 feet. (See notes on "K" and "L" days, MITCHELL, under Processing Records) Office puts least depth on this shoal as 11 ft.

2. Witches Rock, off Portland Head. An old sounding of 23 feet was reduced to 21 feet upon investigation by the 808 fathometer.

3. Pine Tree Ledge, off Portland Head. An old sounding of 21 feet was not found; a thorough investigation by the 808 fathometer indicating 22 feet as the shoalest. It is recommended, however, that the 21 foot sounding be retained. Chart 22.

4. Willard Rock, Southeast of Portland Head. An old sounding of 27 feet was not checked by 1 foot with the 808 fathometer. It is recommended however, that the 27 foot sounding be retained. Chart 28.

5. "The Hussey" - This is a marked shoal covered with 13 ft. in the center of the approach to Luckse Sound, east of Peaks Island. This shoal is now marked by a lighted buoy. 9 ft. to be charted least depth

All of the above shoals are marked by buoys, which were located during the progress of the hydrography.

ADDITIONAL WORK

Time did not permit to drift lead or develop the area in the vicinity of case "6" under Dangers and Shoals and further development is necessary in the triangular area north of Lat. 43° 41', at the northeast corner of

this survey. This could be undertaken when the work is extended to the eastward. Rev., par. 10.

ANCHORAGES

There are no good, protected anchorages within the limits of this sheet.

CHANNELS

The only channel of note on this sheet is Green Island Passage, just north of Outer Green Island, marked by a nun buoy (N 4) on the northeastern side and a black spar (S 3) on the southwestern side. The spar marks Johnson Rock (covered by 7 feet, chart 315). This channel was not developed on this sheet and can be better viewed on field survey No. 1002 of the OCEANOGRAPHER.

LANDMARKS FOR CHARTS

All landmarks for charts falling within the bounds of this sheet are to be reported on by subsequent reports on topographic and graphic control sheets of the OCEANOGRAPHER, of this season.

GEOGRAPHIC NAMES

No new geographic names have been used on this sheet and all names are as they appear on the present charts.

Submitted by:

Ross A. Gilmore
Ross A. Gilmore
Jr. H. & G. Engineer

Approved and forwarded:

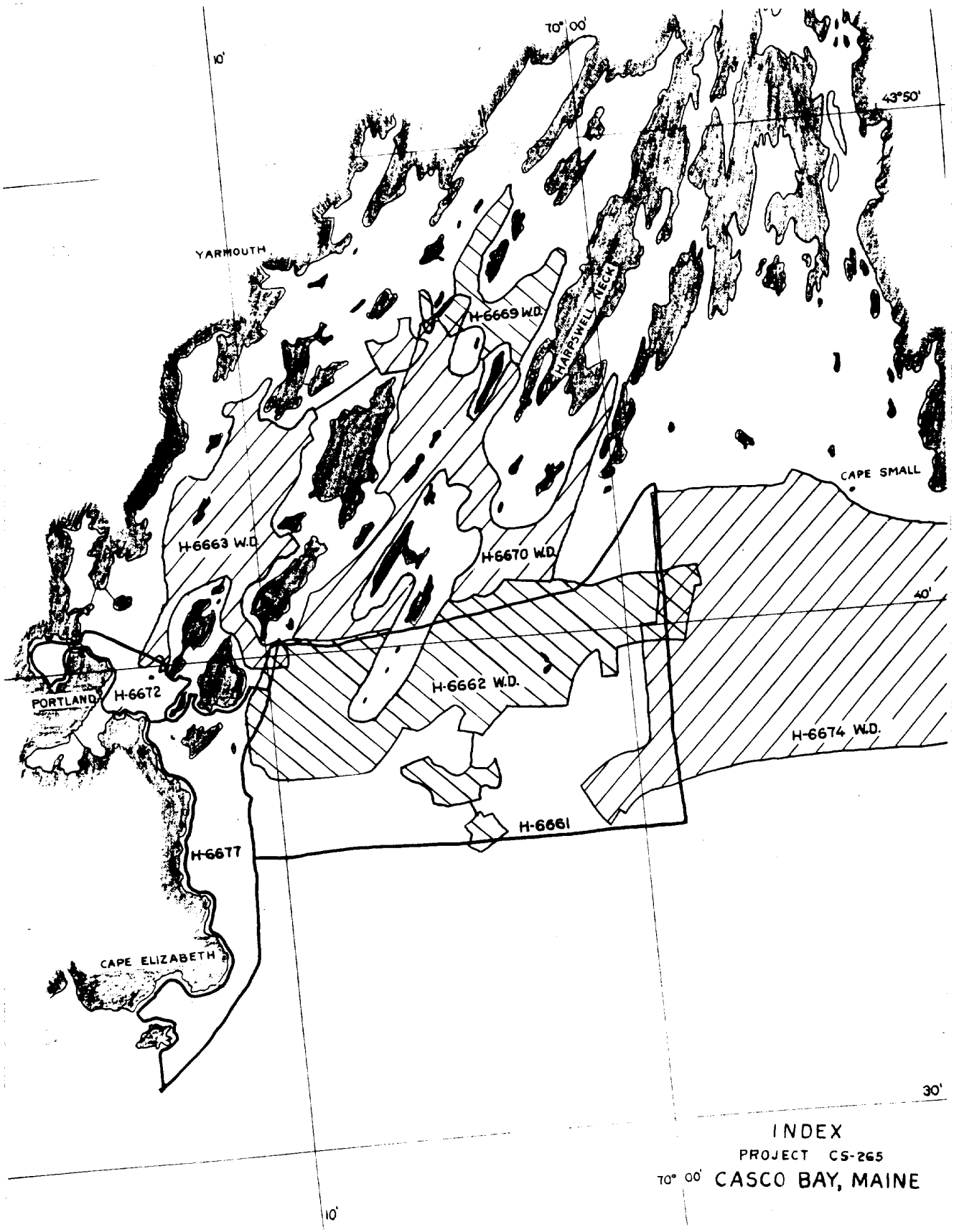
I. E. Rittenburg
I. E. Rittenburg
H. & G. Engineer
Chief of Party

John C. Ellerbe
John C. Ellerbe
Jr. H. & G. Engineer

STATISTICS - SHEET 6661

Date	Day	Volume	Statute Miles	Soundings	Positions
May 14	a	1	20.6	376	46
15	b	1	36.2	467	86
16	c	1	38.4	548	114
19	d	1 & 2	39.2	729	129
20	e	2	45.5	657	139
21	f	2	34.7	639	130
22	g	2 & 3	37.9	565	130
23	h	3	39.0	762	138
26	j	3	50.5	739	164
27	k	4	26.3	508	99
29	l	4	40.0	547	134
June 2	m	4 & 5	43.7	710	154
July 25	n	5	14.7	238	65
28	p	5	41.0	611	147
29	q	6	52.0	815	184
30	r	6 & 7	32.4	860	124
Aug. 4	s	7	38.1	640	160
6	t	8	51.5	745	203
8	u	8 & 9	51.0	1225	197
May 29	a	10	40.4	630	129
June 2	b	10	49.7	693	159
3	c	10 & 11	52.9	747	185
4	d	11	20.0	440	97
5	e	11	14.6	340	76
July 25	f	11	18.6	450	75
28	g	11 & 12	56.7	821	185
29	h	12	69.5	516	225
30	j	12	8.0	193	32
Aug. 1	k	12 & 13	53.5	931	185
7	l	13	21.7	502	79
			1138.3	18407	3970

Area - Sq. Sta. miles 59.8



INDEX

PROJECT CS-265

70° 00' CASCO BAY, MAINE

Surveys Section (Chart Division)

HYDROGRAPHIC SURVEY NO. H6661

Records accompanying survey:

Boat sheets (2).; sounding vols. (14).; wire drag vols. ....;

bomb vols. .....; graphic recorder rolls .(21).;

special reports, etc. (1) Cahier containing (2) folders of Field Record Soundings; Fathometer corr; Temperatures and Salinities filed in Descriptive Report.

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

Number of positions on sheet		3970
Number of positions checked		64
Number of positions revised		4
Number of soundings recorded		18407 does not include numerous sdgs added by verifier
Number of soundings revised (refers to depth only)		19 These include only those in disagreement with the original entry of soundings and does not represent the revisions made necessary by rescaling the fathograms
Number of soundings erroneously spaced		54
Number of signals erroneously plotted or transferred		0
Topographic details	Time	10½
Junctions	Time	0
Verification of soundings from graphic record	Time	139½

Verification by [signature] Total time 329 hrs Date 1/20/42

Review by J.A. McCormick Time 78 hrs. Date 2/23/42

	Remarks	Decisions
1		457699
2		436700
3		436700 U.S.G.B
4		
5		U.S.G.B
6		436700
7		
8		436701
9		436700
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11		
12		436701
13		4
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15		436700
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17		436701
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19		436701
20		436701
21		
22		436701
23		436700
24		436701
25		
26		
27		436701
M 234		

GEOGRAPHIC NAMES

Survey No. H6661

Name on Survey	On Chart No. A,	On previous survey No. B,	On U. S. quadrangle Maps C,	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
Bailey Island										1
Bulwark Shoal	✓									2
Casco Bay										3
Crotch Island										4
Cushing Island										5
Drunkers Ledges	✓									6
Eagle Island										7
Green Island Passage	✓									8
Halfway Rock										9
Haskell Island										10
Hope Island										11
Hussey Sound										12
Inner Green Island	✓									13
Jaquish Island										14
Jewell Island										15
Long Island										16
Luckse Sound										17
Outer Green Island	✓									18
Peak Island										19
Pine Tree Ledge	✓									20
Pond Island										21
Ram Island	✓									22
Round Shoal	✓									23
The Hussey										24
Whitehead										25
Whitehead Passage										26
Willard Rock	✓									27

Ink only names underlined in red — see chart 201 for application of several sunken features.

Names underlined in red approved by L. Heck on 3/19/47

M 234

	Remarks	Decisions
1		436701
2		
3		
4	Location of tide staff.	
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GEOGRAPHIC NAMES

Survey No. H6661

Name on Survey	On Chart No. A,	On previous survey No. B,	On U. S. quadrangle Maps C,	From local information D	On local Maps E	P. O. Guide or Map F	Rand McNally Atlas G	U. S. Light List H	K	
Witch Rock										1
										2
										3
Portland										4
										5
										6
		Names underlined in red by L. Heck 8/3/1942								7
										8
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M 234

Statement to Accompany Hydro. Sheet H-6661

The plotting of the smooth sheet was under the immediate supervision of the Chief of Party.

The sheet and records have been inspected and are approved.

I. E. Rittenburg
H. & G. Engineer
Chief of Party

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form No. 717
Rev. Dec. 1938

SHEET No. 1.

RECORD OF TEMPERATURES, SALINITIES, AND THEORETICAL VELOCITIES

Ship or party Launches MITCHELL & OGDEN, I. E. Rittenburg, Chief of party. _____, 19____
Locality Casco Bay, Maine Project CS-265 Survey No. H-6661

Date 19 41	Time 75 mer.	Latitude and longitude	* Depth	Temp. at Depth		Specific Gravity		At Temp.		† Salinity	Velocity at temp.	Corrections		Velocity (theoretical)	Therm. No.	Hydro. No.	Remarks (weather, bottom, etc.)
				Obs.	Cor.	Obs.	Cor.	Obs.	Cor.			Sal.	Pres.				
May	h. m.		Fathoms	°C	°C			°C	°C		M./Sec.	M./Sec.	M./Sec.	M./Sec.			
19	8-10	43-40.34	0	8.8		1.0240		8.8		31.1					B.S. No. 68635	T-1253	
	8-20	70-09.41	6	6.2		1.0244		9.7		31.8					"	"	
	8-15		12B	5.8		1.0245		9.0		31.8					"	"	hard bottom
20	7-55	43-38.00	0	8.5		1.0241		9.9		31.4					"	"	
	8-10	70-08.08	8	6.7		1.0245		8.5		31.7					"	"	
	8-00		16B	5.5		1.0247		7.8		31.9							hard bottom
22	8-30	43-37.75	0	9.0		1.0240		10.5		31.4					"	"	Rocky
	8-40	70-10.18	7	6.9		1.0228		18.3		31.7					"	"	bottom
	8-35		13.3B	5.7		1.0235		16.1		32.0					"	"	
23	7-45	43-39.40	0	9.7		1.0240		10.7		31.5							Rocky & dk gy M. bottom
		70-10.09	8	5.7	? (6.7)	1.0243		9.3		31.6							
			15.2B	5.7		1.0244		9.5		31.8							
27	8-22	43-38.44	0	9.0		1.0241		9.5		31.4							Rocky
	8-25	70-09.16	7	7.2		1.0245		8.5		31.7							bottom
	8-18		14.5B	6.5		1.0245		8.6		31.7							

* If depth recorded is bottom indicate thus: 965 B
† Express in parts /1000. If by titration indicate thus: 34.15 T

U. S. GOVERNMENT PRINTING OFFICE 11—11506

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form No. 717
Rev. Dec. 1933

SHEET No. 2

RECORD OF TEMPERATURES, SALINITIES, AND THEORETICAL VELOCITIES

Ship or party Launches MITCHELL & OGDEN, I. E. Rittenburg, Chief of party. _____, 19____
Locality Casco Bay, Maine Project CS-265 Survey No. H-6661

Date 1941	Time 75 mer.	Latitude and longitude	*Depth	Temp. at Depth		Specific Gravity		At Temp.		†Salinity	Velocity at temp.	Corrections		Velocity (theoretical)	Therm. No.	Hydro. No.	Remarks (weather, bottom, etc.)
				Obs.	Cor.	Obs.	Cor.	Obs.	Cor.			Sal.	Pres.				
June	h. m.		Fathoms	°C	°C			°C	°C		M./Sec.	M./Sec.	M./Sec.	M./Sec.	B.S. No.		
✓ 2	14-20	43-38.43	0	12.9		1.0233		12.1		30.8					68635	T-1253	Rocky ✓
	14-30	69-58.66	10	6.5		1.0239		9.3		31.1							bottom
	14-25		20	4.9		1.0245		8.6		31.7							
July																	
✓ 25	8-30	43-39.15	0	14.4		1.0235		15.5		31.87							
		70-09.38	2.5	12.9		1.0233		14.1		31.28							
			5	11.8		1.0238		13.3		31.72							
			7.5	10.4		1.0239		13.2		31.85							Sand
			10.0	9.3		1.0242		12.0		31.98							&
			20.6B	8.2		1.0239		12.0		31.60					•		Mud ✓ bottom
28	12-02	43-39.7	0	16.7		1.0224		16.9		30.85							
		69-58.7	2.5	15.3		1.0225		15.8		30.68							
			4.0	11.5		1.0232		14.7		31.29							
			5	10.7		1.0235		13.7		31.45							
			10	8.8		1.0243		12.5		32.20							
			15	7.5		1.0241		11.4		31.71							
			33B	6.6		1.0243		11.3		31.95							✓ hrd bottom
	12-26		3	13.5													

* If depth recorded is bottom indicate thus: 965 B
† Express in parts /1000. If by titration indicate thus: 34.15 T

U. S. GOVERNMENT PRINTING OFFICE 11—11506

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
Form No. 717
Rev. Dec. 1938

SHEET No. 3

RECORD OF TEMPERATURES, SALINITIES, AND THEORETICAL VELOCITIES

Ship or party Launches MITCHELL & OGDEN, I. E. Rittenburg, Chief of party. _____, 19____
Locality Casco Bay, Maine Project CS-265 Survey No. H-6661

Date 1941	Time 75 mer.	Latitude and longitude	*Depth	Temp. at Depth		Specific Gravity		At Temp.		†Salinity	Velocity at temp.	Corrections		Velocity (theoretical)	Therm. No.	Hydro. No.	Remarks (weather, bottom, etc.)
				Obs.	Cor.	Obs.	Cor.	Obs.	Cor.			Sal.	Pres.				
Aug.	h. m.		Fathoms	°C	°C			°C	°C		M./Sec.	M./Sec.	M./Sec.	M./Sec.	B.S. No.		
7	12-17	43-36.2	0	21		1.0220		21		31.48					68635	T-1253	
		70-04.6	1	17.2		1.0228		18.2		31.71							Stk.
			2	15.4		1.0228		17.8		31.60							bottom
			5	11.0		1.0241		15.0		32.51							
			10.0	9.5		1.0242		14.5		32.51							
			20.0	8.8		1.0242		14.5		32.51							
			30.4B	8.55		1.0240		15.8		32.61							

* If depth recorded is bottom indicate thus: 965 B
† Express in parts /1000. If by titration indicate thus: 34.15 T

U. S. GOVERNMENT PRINTING OFFICE 11—11506

808A Fathometer Corrections

Week of May 26, 1941
" " June 2, 1941

for

HYDROGRAPHIC SURVEY Nº H6661

Weekly Bar Check Averages (compiled from daily bar checks) and Leadline - Fathometer Comparisons

808A (OGDEN) : May 26, 27, 29

	True Depth	Fathometer	Corr.		Remarks
Bar check	5.0	5.0		0.0	
	10.0	10.0		0.0	
	15.0	15.0		-0.3	
	20.0	20.4		-0.4	
	25.0	25.5		-0.5	
Lead line	76.0	77.5		-1.5	
	87.0	88.7		-1.7	
	119.5	119.5		0.0	? (probably uneven bottom).
	144.0	147.6		-3.6	

808A (MITCHELL) : May 29 (1 day only during this week)

Bar check	5.0	5.0		0.0
	10.0	10.1		-0.1
	15.0	15.2		-0.2
	20.0	20.4		-0.4
	25.0	25.8		-0.8
Leadline	74.5	75.6		-1.1

808A (OGDEN) : June 2 (1 day only)

Bar check	5.0	5.0		0.0
	10.0	10.0		0.0
	15.0	15.3		-0.3
	20.0	20.5		-0.5
	25.0	25.7		-0.7
L.L.	32.0	32.7		-0.7

808A (MITCHELL) : June 2, 3, 4 and 5

	5.0	5.0		0.0
	10.0	10.2		-0.2
	15.0	15.2		-0.2
	20.0	20.5		-0.5
	25.0	25.7		-0.7
	47.0	48.0		-1.0
	51.0	52.8		-1.8
	57.0	57.0		0.0
	67.0	66.6		+0.4
	68.0	69.0		-1.0

? probably due to uneven bottom
? " " " " "

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

CURVE No 1

0.0 -0.5 -1.0 -1.5 -2.0 -2.5 -3.0

CORRECTIONS IN FEET ~~FATHOMS~~

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190

DEPTHS IN ~~FATHOMS~~ FEET

(For deep water add a 0 to these figures)

CURVE NO. 1

808A (OGDEN)

FATHOMETER CORRECTIONS

U.S. Coast and Geodetic Survey

~~Ship~~ Launch "OGDEN" J. Mitchell

I. E. Rittenburg Comdg.

These corrections are to be used between May 26 1941 and May 30 1941 in the locality Outer Casco Bay, Maine

for hydrographic surveys Nos. 2001

Note: This curve is based on values obtained from the British Admiralty Tables for velocity of sound in sea water against a rated machine velocity of 820 fm/sec.

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EUGENE DIETZGEN CO. NO. 346 A

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

0.0 -0.5 -1.0 -1.5 -2.0 -2.5 -3.0 -3.5 -4.0

CURVE Nº2

CORRECTIONS IN ~~FATHOMS~~ FEET

CURVE NO. 2

808 A (OGDEN)

FATHOMETER CORRECTIONS

U.S. Coast and Geodetic Survey

~~Ship~~ Launches Ogden & Mitchell

I. E. Rittenburg Comdg.

These corrections are to be used between May 26 1941 and May 30 1941 in the locality Casco Bay, Portland Maine

for hydrographic surveys Nos. 2201

Note: This curve is based on the averages of all bar checks taken during the week at 5', 10', 15', 20' and 25' depths and also of actual leadline and fathometer comparisons taken at indicated depths.

DEPTHS IN ~~FATHOMS~~ FEET

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190

Rejected

(For deep water add a 0 to these figures)

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(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

0·0 -0·5 -1·0 -1·5 -2·0 -2·5 -3·0 -3·5 -4·0

CURVE No 3

CORRECTIONS IN ~~FATHOMS~~ FEET

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190

DEPTHS IN ~~FATHOMS~~ FEET

(For deep water add a 0 to these figures)

CURVE NO.3

808 A (OGDEN)

FATHOMETER CORRECTIONS

U.S. Coast and Geodetic Survey

Ship Launches Mitchell and Ogden

J.E. Rittenburg Comdg.

These corrections are to be used between May 26 1941 and May 30 1941 in the locality Casco Bay, Portland, Maine

for hydrographic surveys Nos. 2001

Note: Values for this curve were obtained by meaning values obtained from curves 1 and 2 at corresponding depths and has been used for obtaining fathometer corrections between the above dates.

REDUCERS: May 26–30, Launch OGDEN

0'	to	21 feet
-1'	to	71 "
-2'	to	115 "
-3'	to	156 "
(-4'	to	200 ")

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

CURVE No 4

CORRECTIONS IN ~~FATHOMS~~ FEET

808 A (MITCHELL)

FATHOMETER CORRECTIONS
U.S. Coast and Geodetic Survey

Ship Launches Mitchell and Ogden
Comdg.

These corrections are to be used
~~between~~ May 29 1941 and ——— 19
in the locality Casco Bay, Portland, Me.

for hydrographic surveys Nos. 2001

Note: This curve is based on the average of the bar checks this day and of one lead line - Fathometer comparison.

DEPTHS IN ~~FATHOMS~~ FEET

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190

(For deep water add a 0 to these figures)

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EUGENE DIETZGEN CO. NO. 346 A

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

CURVE No 5

0.0 -0.5 -1.0 -1.5 -2.0 -2.5

CORRECTIONS IN ~~FATHOMS~~ FEET

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190

DEPTHS IN ~~FATHOMS~~ FEET

(For deep water add a 0 to these figures)

808 A (MITCHELL)

FATHOMETER CORRECTIONS
U.S. Coast and Geodetic Survey

Ship Launches Mitchell and Ogden
I.E. Rittenburg Comdg.

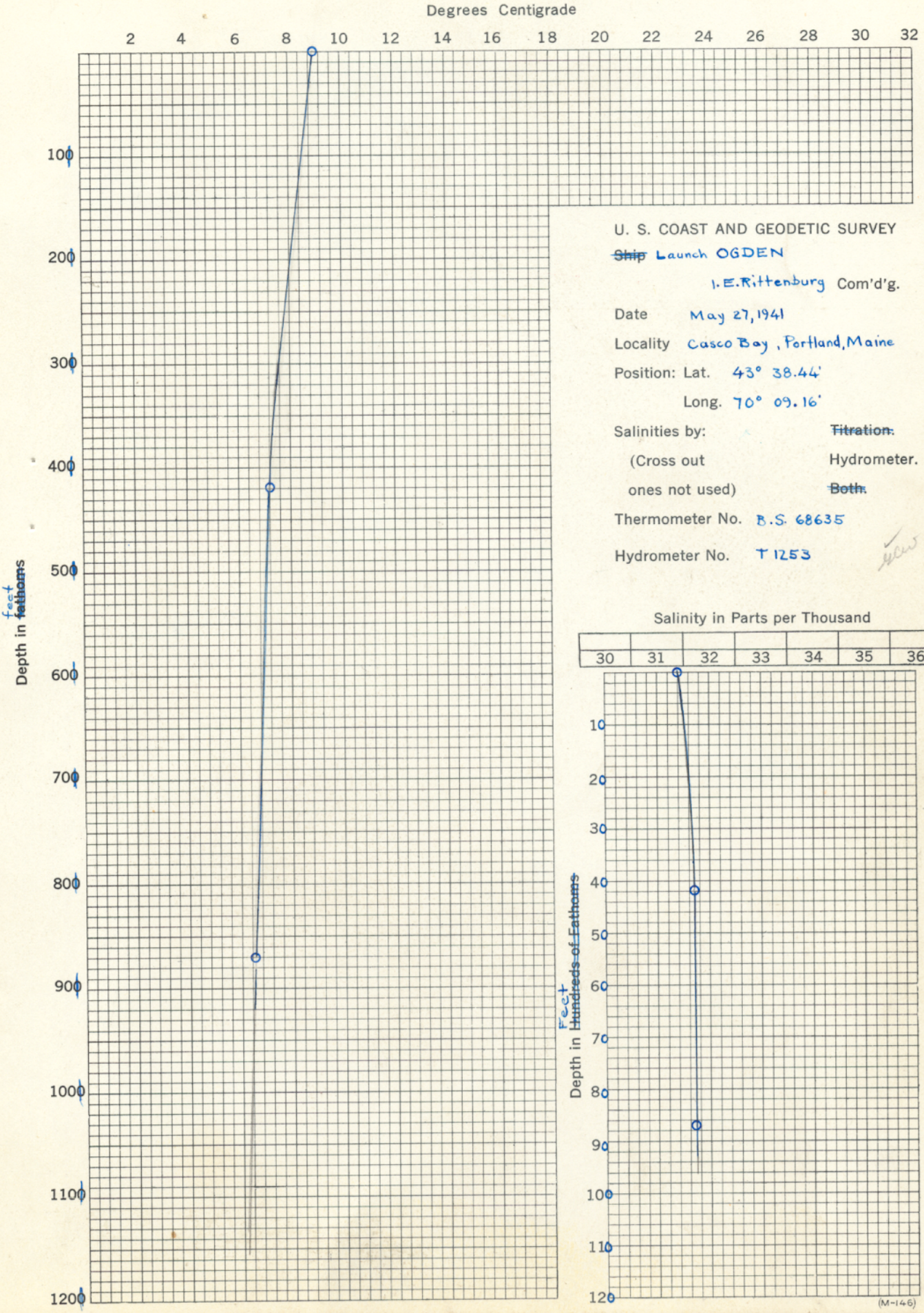
These corrections are to be used ~~between~~ May 29 1941 and ——— 19
in the locality Casco Bay, Portland, Me.
for hydrographic surveys Nos. 2001

Note: Values for this curve were obtained by meaning values obtained from Curves No. 1 and 4 at corresponding depths and has been used for obtaining Fathometer Corrections up to 70 feet, thence corrections are obtained from Curve No. 3.

REDUCERS: May 29, Launch MITCHELL

0' reducer to 18 feet
-1' " " 84 "
-2' " " 115 "
-3' " " 156 "
-4' " " 200 "

GRAPH OF WATER TEMPERATURES AND SALINITIES



U. S. COAST AND GEODETIC SURVEY

~~Ship~~ Launch OGDEN

I. E. Rittenburg Com'd'g.

Date May 27, 1941

Locality Casco Bay, Portland, Maine

Position: Lat. 43° 38.44'

Long. 70° 09.16'

Salinities by: ~~Titration.~~

(Cross out ones not used) Hydrometer.

~~Both.~~

Thermometer No. B.S. 68635

Hydrometer No. T 1253

(M-146)

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

CURVE No 1

0.0 -0.5 -1.0 -1.5 -2.0 -2.5 -3.0

CORRECTIONS IN ~~FATHOMS~~ FEET

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190

DEPTHS IN ~~FATHOMS~~ FEET

(For deep water add a 0 to these figures)

Av. Bar Check Values and 1 lead line - Fathometer comparison at 32 ft.

808A (OGDEN)

FATHOMETER CORRECTIONS
U.S. Coast and Geodetic Survey

Ship Launches Ogden & Mitchell
J. E. Rittenburg Comdg.

These corrections are to be used between June 2 1941 and June 6 1941 incl. in the locality Casco Bay, Portland, Maine

for hydrographic surveys Nos. 2001

Note: Blue curve based on values obtained from British Admiralty Tables against a rated Fathometer velocity of 820 fm./sec. Reducers used for this period, beyond bar check depths, based on this curve due to lack of further Fathometer - Lead line comparisons beyond the bar check depth of 25'. For soundings up to 25' a mean of the bar check curve and velocity curve was used.

Note: The water temperature obtained at 192 feet was rejected, hence the interpolation beyond 120 feet.

REDUCERS	June 2-6 incl. Launch Ogden
0' to	20 feet
-1' to	81 "
-2' to	126 "
-3' to	167 "
-4' to	207 "
(-5' to	245 ")

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EUGENE DIETZGEN CO. NO. 346 A

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

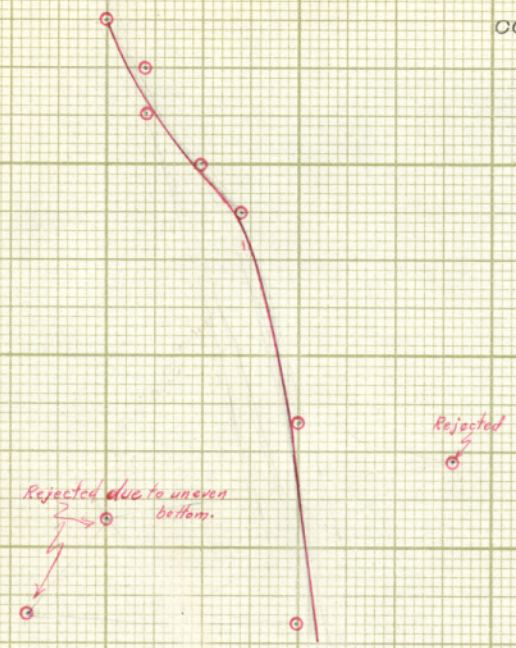
CURVE No 2.

0.0 -0.5 -1.0 -1.5 -2.0 -2.5 -3.0

CORRECTIONS IN ~~FATHOMS~~ FEET

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190

DEPTHS IN ~~FATHOMS~~ FEET



808A (MITCHELL)

FATHOMETER CORRECTIONS
U.S. Coast and Geodetic Survey

~~Ship~~ Launches Mitchell and Ogden
I.E. Rittenburg Comdg.

These corrections are to be used between June 2 1941 and June 6 1941 incl.
in the locality Casco Bay., Portland, Me.
for hydrographic surveys Nos. 2001

Note: This curve is based on the averages of the bar checks taken between the above dates and of the Leadline – Fathometer comparison differences as shown – Rejected points appear in error probably due to irregular bottom.

This curve has been averaged with curve No.1 of this period to produce curve No. 3.

(For deep water add a 0 to these figures)

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EUGENE DIETZGEN CO. NO. 346 A

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

CURVE No 3

0.0 -0.5 -1.0 -1.5 -2.0 -2.5 -3.0

CORRECTIONS IN ~~FATHOMS~~ FEET

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190

DEPTHS IN ~~FATHOMS~~ FEET

(For deep water add a 0 to these figures)

808A MITCHELL

FATHOMETER CORRECTIONS
U.S. Coast and Geodetic Survey

~~Ship~~ Launches Mitchell and Ogden
L.E. Rittenburg Comdg.

These corrections are to be used between June 2 1941 and June 6 1941 in the locality Casco Bay, Portland, Me.

for hydrographic surveys Nos. 2001

Note: Values for this curve were obtained by meaning values from Curves No 1 and 2 at corresponding depths and has been used for obtaining Fathometer corrections up to 70 feet, thence corrections are obtained from Curve No. 1.

Reducers: June 2-6 incl.; "MITCHELL"

0'	reducer to	20'
-1'	"	" 81'
-2'	"	" 126'
-3'	"	" 167'
-4'	"	" 207'
(-5'	"	" 245')

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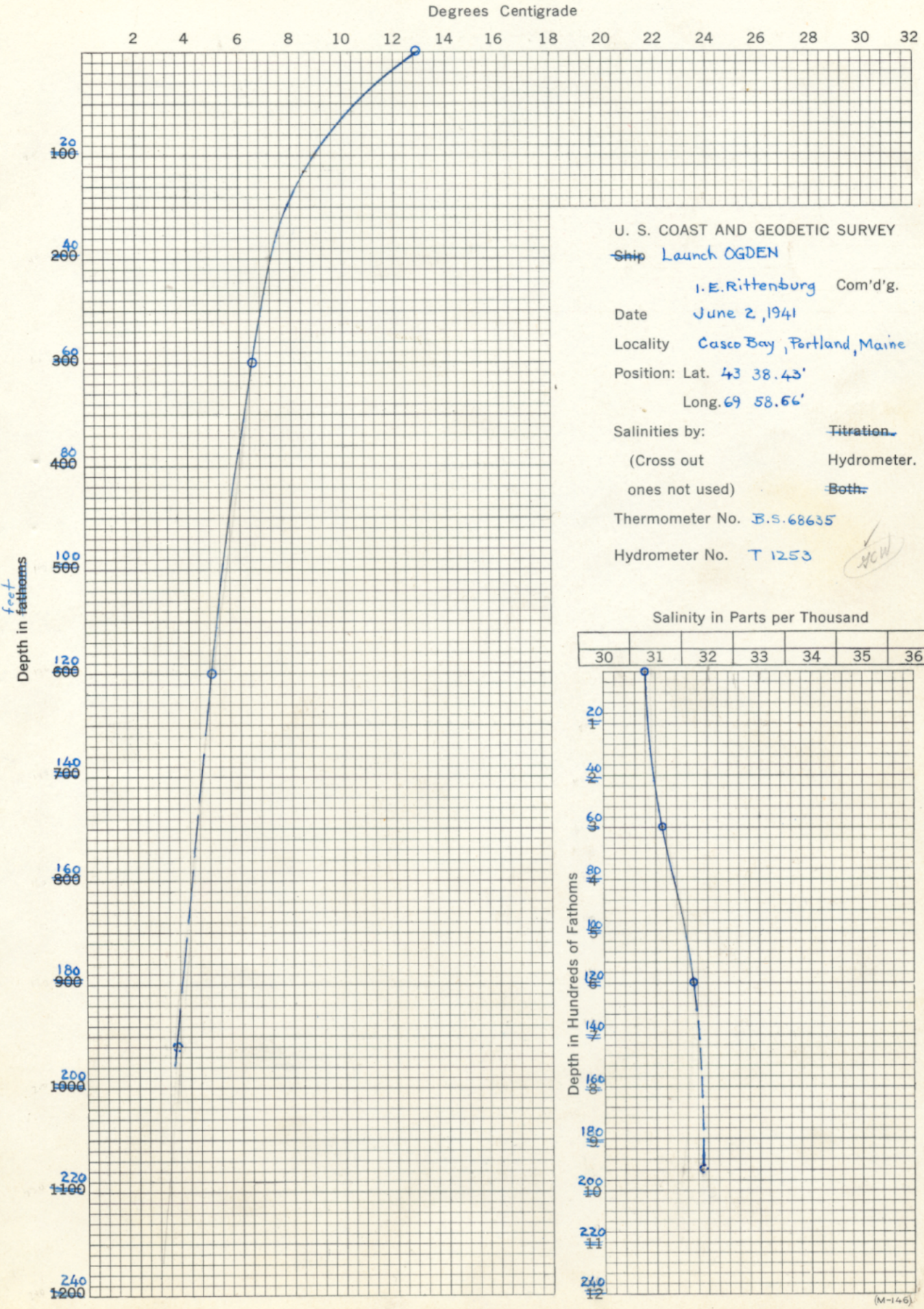
EUGENE DIETZGEN CO. NO. 346 A

GRAPH OF WATER TEMPERATURES AND SALINITIES



U. S. COAST AND GEODETIC SURVEY

~~Ship~~ Launch OGDEN

I. E. Rittenburg Com'd'g.

Date June 2, 1941

Locality Casco Bay, Portland, Maine

Position: Lat. 43 38.43'

Long. 69 58.66'

Salinities by: ~~Titration.~~

(Cross out Hydrometer.

ones not used) ~~Both.~~

Thermometer No. B.S. 68635

Hydrometer No. T 1253

MCW

(M-146)

May 27, 1941

Depth	Temp	Av. Temp	Salinity	Av. Salinity	Velocity	Factor	Correction
3	8.8		31.4		1478.0	0.0146	-0.05
23	7.9	8.4	31.6	31.5	1476.6	0.0153	-0.31
43	7.2	8.0	31.7	31.6	1475.3	0.0162	-0.65
63	6.9	7.7	31.7	31.6	1474.2	0.0169	-1.01
83	6.6	7.5	31.7	31.6	1473.6	0.0173	-1.39

3	23	43	63	83
1482.0	1480.5	1479.0	1477.8	1477.1
-4.0	-4.0	-3.9	-3.9	-3.9
0.0	+0.1	+0.2	+0.3	+0.4
1478.0	1476.6	1475.3	1474.2	1473.6

June 2, 1941

3	12.1		30.8		1489.3	~~0.0069~~	.02
23	8.5	10.3	30.8	30.8	1482.9	0.0111	-0.22
43	7.1	9.2	31.0	30.9	1479.9	0.0137	-0.55
63	6.4	8.5	31.2	31.0	1478.5	0.0154	-0.92
83	5.8	8.0	31.4	31.0	1474.7	0.0166	-1.33
103	5.2	7.5	31.6	31.1	1473.0	0.0177	-1.77
123	4.8	7.1	31.8	31.2	1471.6	0.0187	-2.24
(143)	(4.4)	(6.8)	(31.8)	(31.3)	(1470.8)	(0.0192)	(-2.69)
(163)	(4.0)	(6.5)	(31.9)	(31.4)	(1469.8)	(0.0199)	(-3.18)
(183)	(3.6)	(6.2)	(31.9)	(31.4)	(1468.6)	(0.0207)	(-3.78)

3	23	43	63	83	103	123	143
1494.0	1487.6	1483.5	1480.9	1479.0	1477.1	1475.5	1474.3
-4.7	-4.8	-4.7	-4.7	-4.7	-4.6	-4.5	-4.3
0.0	+0.1	+0.2	+0.3	+0.4	+0.5	+0.6	+0.8
1489.3	1482.9	1479.0	1476.5	1474.7	1473.0	1471.6	1470.8

163	183
1473.1	1471.9
-4.2	-4.3
+0.9	+1.0
1469.8	1468.6

808A Fathometer

Corrections, May 14 - 23 incl.

for

HYDROGRAPHIC SURVEY

No H6661

Weekly Bar Check Averages (compiled from daily bar checks) and Leadline – Fathometer Comparisons

808 A (OGDEN) : May 14, 15, 16, 19, 20, 21, 22, 23.

True Depth	5.0	Fathometer	5.0	Corr.	0.0 feet
Bar Check	10.0		10.1		– 0.1
	15.0		15.4		– 0.4
	20.0		20.5		– 0.5
	25.0		25.7		– 0.7
Leadline	72.0		74.0		– 2.0
"	95.5		97.0		– 1.5

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

0.0 -0.5 -1.0 -1.5 -2.0 -2.5 -3.0

CORRECTIONS IN ~~FATHOMS~~ Feet

808A (OGDEN)

FATHOMETER CORRECTIONS
U.S. Coast and Geodetic Survey

~~Ship~~ Launches Ogden & Mitchell
I. E. Rittenburg Comdg.

These corrections are to be used between May 14 1941 and May 23 1941 incl. in the locality Casco Bay, Portland, Maine

for hydrographic surveys Nos. 2001

- May 19, 1941
- May 20, 1941
- May 22, 1941
- May 23, 1941

Note: Blue curve based on values obtained from British Admiralty Tables against a rated Fathometer velocity of 820 fm/sec.

Reducers used for this period, beyond Bar check depths, were based on this curve due to lack of further actual Fathometer Lead line comparisons beyond the Bar Check depth of 25 feet.

For soundings up to 25' a mean of the bar check curve and velocity curve was used.

REDUCERS May 14 - 23 incl., Launch Ogden

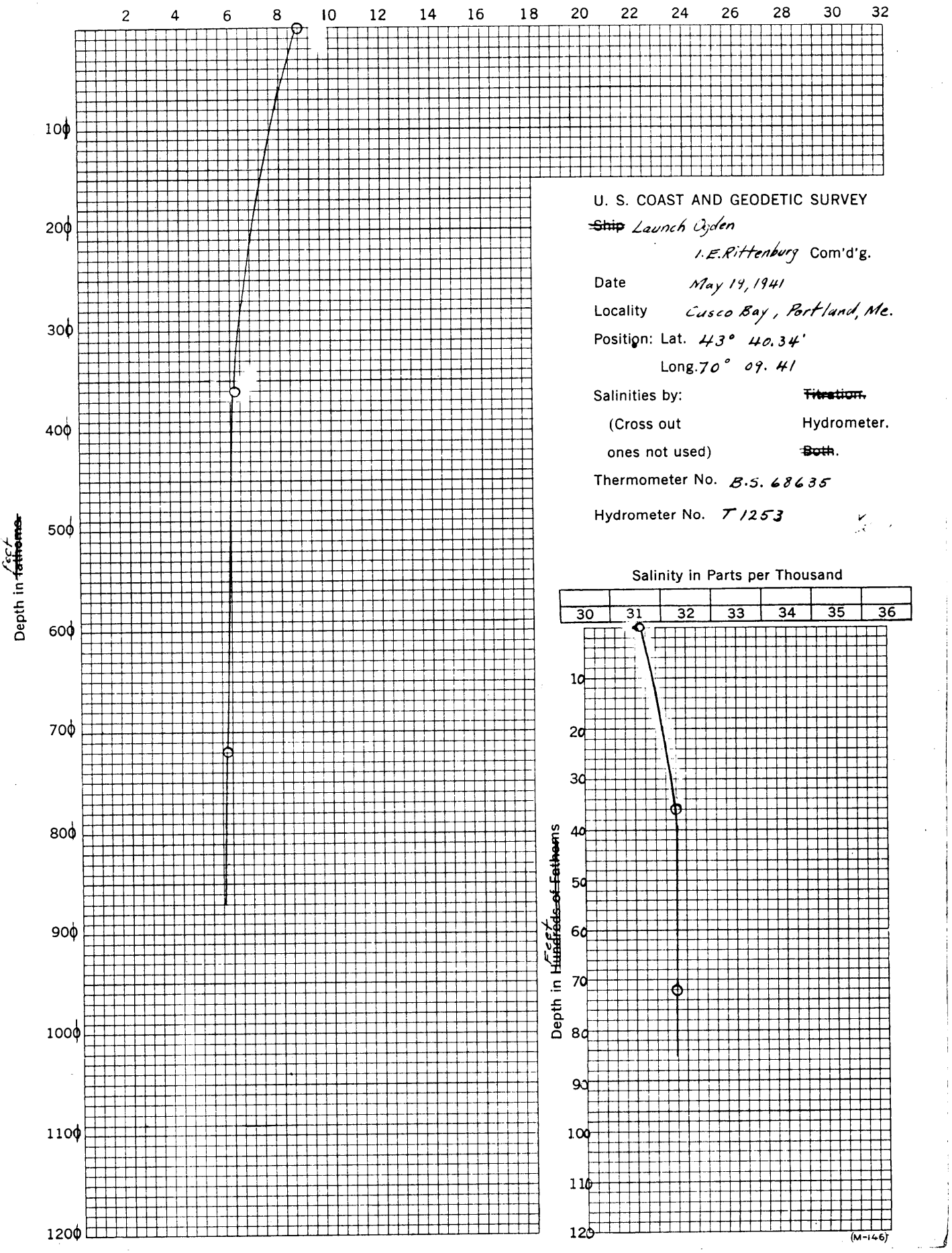
0'	reducer	to	16 feet
-1'	"	"	73 "
-2'	"	"	122 "
-3'	"	"	172 "
-4'	"	"	222 "

DEPTHS IN ~~FATHOMS~~ FEET

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190

(For deep water add a 0 to these figures)

GRAPH OF WATER TEMPERATURES AND SALINITIES



U. S. COAST AND GEODETIC SURVEY

~~Ship~~ Launch Ogden

I.E. Rittenburg Com'd'g.

Date May 14, 1941

Locality Casco Bay, Portland, Me.

Position: Lat. 43° 40.34'

Long. 70° 09.41

Salinities by: ~~Titration.~~

(Cross out ones not used) Hydrometer.

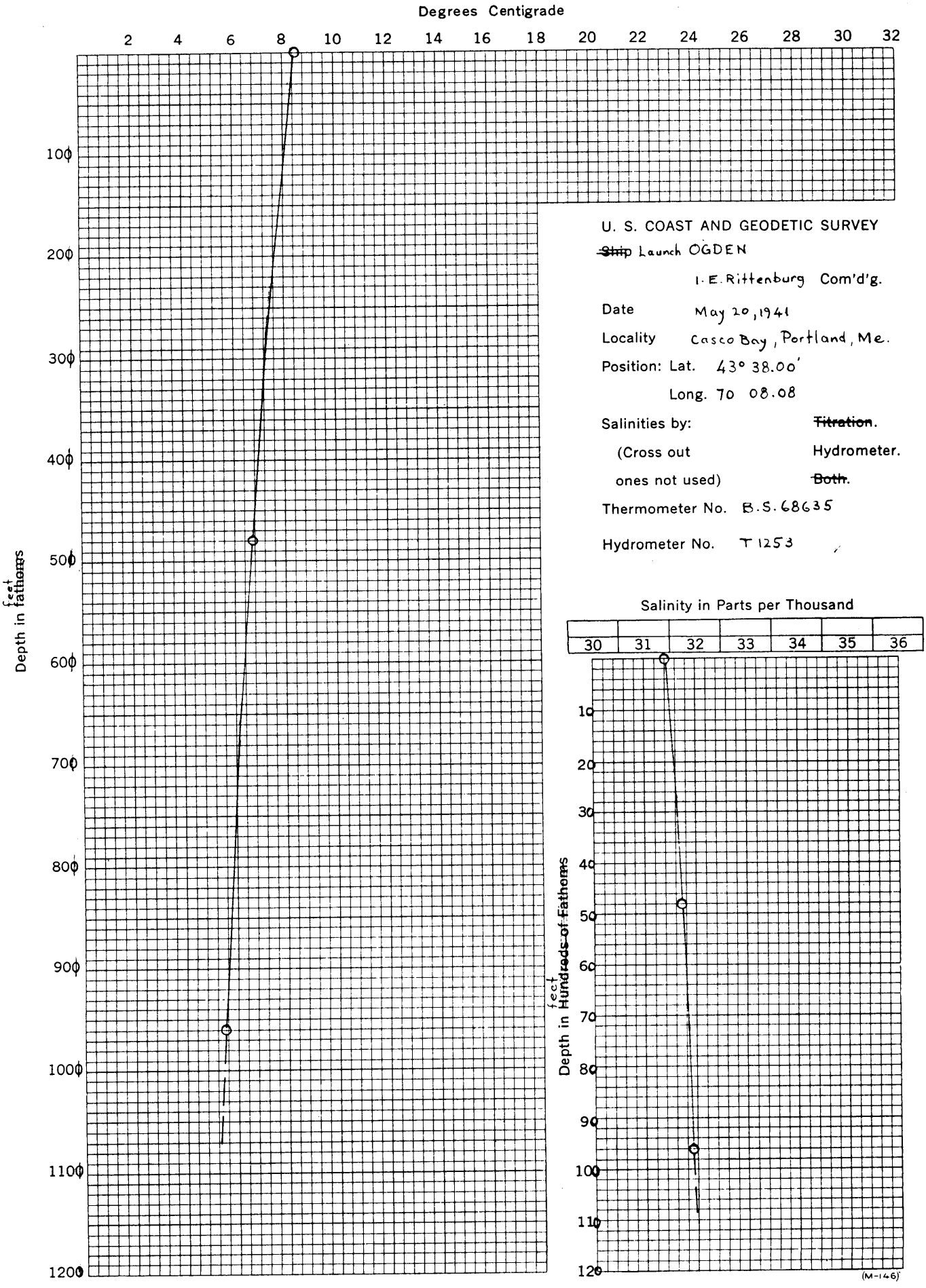
~~Both~~.

Thermometer No. B.S. 68635

Hydrometer No. T 1253

(M-146)

GRAPH OF WATER TEMPERATURES AND SALINITIES



U. S. COAST AND GEODETIC SURVEY

~~Ship~~ Launch OGDEN

I. E. Rittenburg Com'd'g.

Date May 20, 1941

Locality Casco Bay, Portland, Me.

Position: Lat. 43° 38.00'

Long. 70 08.08

Salinities by: ~~Titration~~.

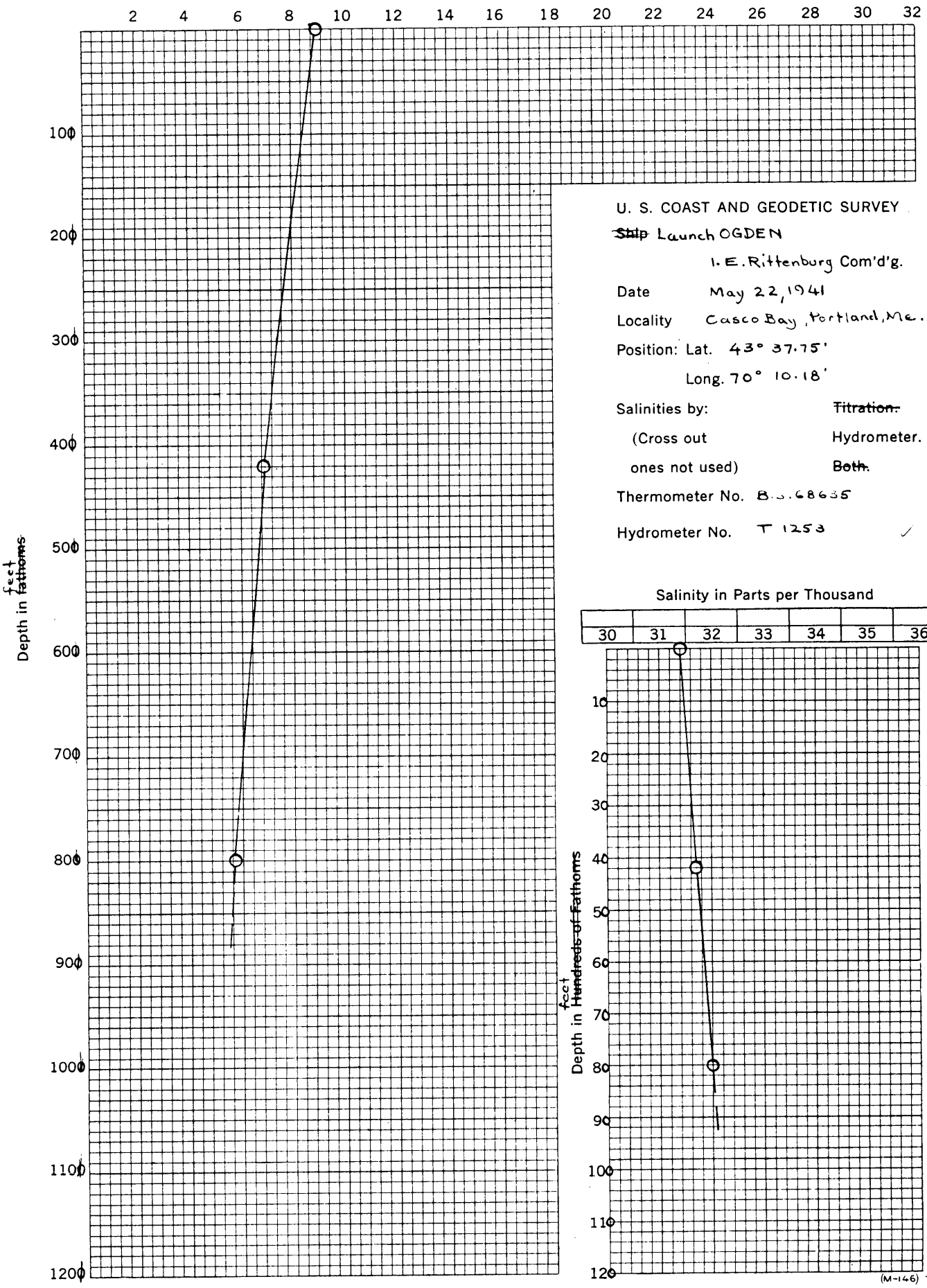
(Cross out ones not used) Hydrometer.

~~Both~~.

Thermometer No. B.S. 68635

Hydrometer No. T 1253

GRAPH OF WATER TEMPERATURES AND SALINITIES



U. S. COAST AND GEODETIC SURVEY

~~Ship~~ Launch OGDEN

I. E. Rittenburg Com'd'g.

Date May 22, 1941

Locality Casco Bay, Portland, Me.

Position: Lat. 43° 37.75'

Long. 70° 10.18'

Salinities by: ~~Titration.~~

(Cross out Hydrometer.

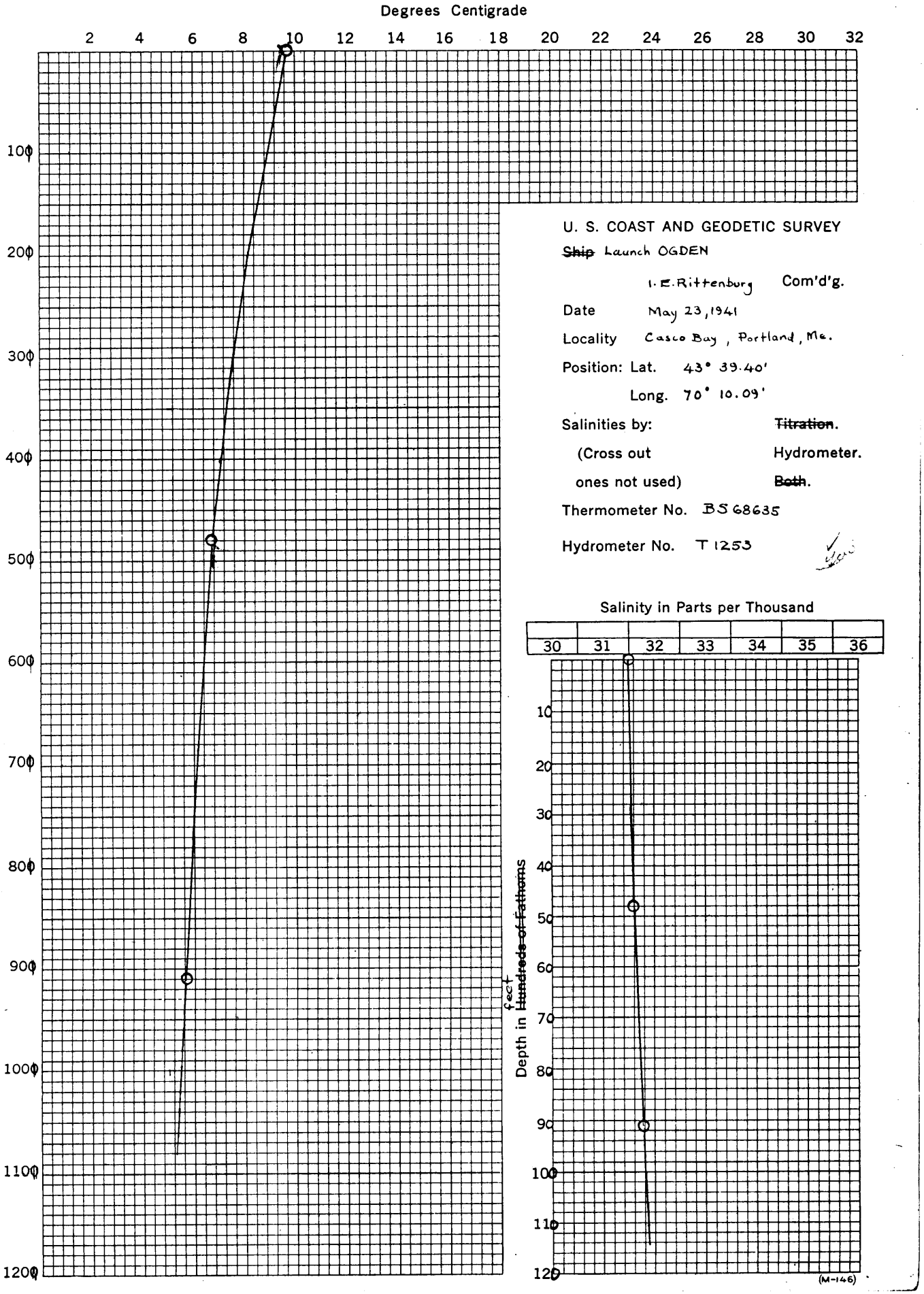
ones not used) ~~Both.~~

Thermometer No. B.S. 68635

Hydrometer No. T 1253 ✓

(M-146)

GRAPH OF WATER TEMPERATURES AND SALINITIES



U. S. COAST AND GEODETIC SURVEY

~~Ship~~ Launch OGDEN

I. E. Rittenburg Com'd'g.

Date May 23, 1941

Locality Casco Bay, Portland, Me.

Position: Lat. 43° 39.40'

Long. 70° 10.09'

Salinities by: ~~Titration~~.

(Cross out ones not used) Hydrometer.

~~Both~~.

Thermometer No. BS 68635

Hydrometer No. T 1253

(M-146)

Rated Velocity of 808A Fmtr. = 1499.6 m/s. May 19, 1941

Depth	Temp.	Av. Temp.	Salinity	Av. Salinity	Velocity	Factor	Correction feet
3	8.4		31.[illegible]		1476.[illegible]	0.0157	- 0.05
23	6.7	7.6	31.6	31.4	1473.4	0.0175	- 0.35
43	6.0	7.0	31.8	31.5	1471.2	0.0189	- 0.76
63	5.9	6.8	31.8	31.6	1470.6	0.0193	- 1.16
(83)	(5.9)	(6.5)	31.8	31.6	1469.5	~~0.0207~~ 0.0201	~~-1.66~~ -1.61

3	23	43	63	(83)
1480.5	1477.4	1475.1	1474.3	1473.1
- 4.54	- 4.2	- 4.1	- 4.0	- 4.0
0.0	+ 0.2	+ 0.2	+ 0.3	+ 0.4
1476.0	1473.4	1471.2	1470.6	1469.5

May 20, 1941

Depth	Temp.	Av. Temp.	Salinity	Av. Salinity	Velocity	Factor	Correction feet
3	8.3		31.5		1476.1	0.0157	- 0.05
23	7.5	7.9	31.6	31.6	1474.9	0.0165	- 0.33
43	6.9	7.6	31.7	31.6	1473.7	0.0173	- 0.69
63	6.2	7.2	31.8	31.6	1472.2	0.0183	- 1.10
83	5.8	6.9	31.9	31.7	1471.2	0.0189	- 1.51
(103)	(5.4)	6.9	(32.0)	31.8	1470.7	0.0193	- 1.93

3	23	43	63	83	103
1480.1	1478.6	1477.4	1475.9	1474.7	1473.9
- 4.0	- 3.9	- 3.9	- 4.0	- 3.9	- 3.8
0.0	+ 0.2	+ 0.2	+ 0.3	+ 0.4	+ 0.6
1476.1	1474.9	1473.7	1472.2	1471.2	1470.7

(OVER)

May 22, 1941

Depth	Temp.	Av. Temp.	Salinity	Av. Salinity	Velocity	Factor	Correction
3	8.8		31.4		1478.9	.0138	- 0.04
23	7.8	8.3	31.6	31.5	1476.4	.0155	- 0.31
43	6.9	7.8	31.7	31.6	1474.6	.0167	- 0.67
63	6.2	7.4	31.9	31.6	1473.0	.0175	- 1.06
83	5.6	7.1	32.0	31.7	1472.0	.0181	- 1.37

3	23	43	63	83
1482.0	1480.1	1478.2	1476.7	1475.5
- 4.1	~~- 4.0~~ - 3.9	~~- 3.9~~ - 3.8	~~- 4.0~~ - 3.6	~~3.9~~ - 3.5
0.0	~~+ 0.2~~	+ 0.2	+ 0.3	+ 0.4
1478.9	1476.4	1474.5	1473.0	1472.0

May 23, 1941

Depth	Temp.	Av. Temp.	Salinity	Av. Salinity	Velocity	Factor	Correction
3	9.4		31.5		1480.3	.0128	- 0.04
23	8.0	8.7	31.5	31.5	1477.9	.0145	- 0.29
43	7.0	8.1	31.6	31.5	1475.7	.0159	- 0.64
63	6.3	7.7	31.6	31.6	1474.2	.0169	- 1.01
83	5.8	7.3	31.7	31.6	1472.7	.0179	- 1.43
103	5.4	7.0	31.8	31.6	1471.7	.0186	- 1.86

3	23	43	63	83	103
1484.3	1481.7	1479.4	1477.8	1476.3	1475.1
- 4.0	- 4.0	- 3.9	- 3.9	- 4.0	- 4.0
0.0	+ 0.2	+ 0.2	+ 0.3	+ 0.4	+ 0.6
1480.3	1477.9	1475.7	1474.2	1472.7	1471.7

808A Fathometer Corrections

July 25, 1941

Week of July 28, 1941

" " Aug. 4, 1941

for

HYDROGRAPHIC SURVEY No. H6661

July 25, 1941 (Based on 820 fm/s, rated vel. of 808A Fathometer)
1499.6 m/s.

Depth	Temp.	Av. Temp	Salinity	Av. Salinity	Velocity	Factor	Correction
3	14.1		31.7		1497.2	0.0016	—
23	12.3	13.2	31.4	31.6	1494.1	0.0037	−0.07
43	10.6	12.3	31.9	31.7	1491.3	0.0055	−0.22
63	9.2	11.6	32.0	31.8	1489.0	0.0071	−0.43
83	8.8	11.0	31.9	31.8	1486.9	0.0085	−0.68
103	8.5	10.6	31.7	31.8	1485.6	0.0093	−0.93
123	8.2	10.2	31.6	31.7	1484.1	0.0103	−1.24

3	23	43	63	83	103	123
1500.7	1497.7	1494.7	1492.2	1490.1	1488.7	1487.2
−3.5	−3.7	−3.6	−3.5	−3.6	−3.6	−3.7
0.0	+0.1	+0.2	+0.3	+0.4	+0.5	+0.6
1497.2	1494.1	1491.3	1489.0	1486.9	1485.6	1484.1

July 28, 1941

					1499.6		
3	16.8		30.8		1504.7	.0034	+ —
23	12.1	14.4	31.1	31.0	1497.5	.0014	−0.03
43	9.4	12.8	31.8	31.2	1492.4	.0048	−0.19
63	8.6	11.7	32.1	31.4	1488.9	.0071	−0.42
83	7.8	10.9	32.1	31.6	1486.3	.0089	−0.71
103	7.5	10.4	32.0	31.6	1484.5	.0101	−1.01
123	7.3	9.9	31.9	31.7	1483.0	.0111	−1.33
143	7.1	9.6	31.9	31.7	1482.1	.0117	−1.63
163	6.9	9.3	31.8	31.7	1481.1	.0123	−1.97
183	6.7	9.0	31.8	31.7	1480.1	.0130	−2.34
(203)	(6.6)	(8.8)	31.7	31.7	1479.4	.0135	−2.70

3	23	43	63	83	103	123	143
1509.2	1501.7	1496.4	1493.6	1489.8	1487.9	1486.1	1485.0
−4.5	−4.3	−4.2	−4.0	−3.9	−3.9	−3.7	−3.7
0.0	+0.1	+0.2	+0.3	+0.4	+0.5	+0.6	+0.8
1504.7	1497.5	1492.4	1488.9	1486.3	1484.5	1483.0	1482.1

163	183	203
1483.9	1482.8	1482.0
−3.7	−3.7	−3.7
+0.9	+1.0	+1.1
1481.1	1480.1	1479.4

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

+0.5 0.0 -0.5 -1.0 -1.5 -2.0 -2.5 -3.0

CORRECTIONS IN FATHOMS

10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190

DEPTHS IN FATHOMS

(For deep water add 0 to these figures)

Reject

808A (OGDEN)
808A (MITCHELL)

FATHOMETER CORRECTIONS
U.S. Coast and Geodetic Survey

Ship Launches MITCHELL & OGDEN
I.E. Rittenburg Comdg.

These corrections are to be used between July 28 1941 and Aug. 1 1941 incl.
in the locality Casco Bay, Maine

for hydrographic surveys Nos. 2001

Note: Blue curve is based on values obtained from the British Admiralty Tables against a rated velocity of 820 fm/sec. (1499.6 m./sec.) For both fathometers from serial temperatures and salinities obtained July 28.

Green curve is from 808A (OGDEN) Bar Check values (mean values for period shown above) and 2 leadline-fathometer comparisons.

The Brown Curve is a mean curve of the Blue and Green curves from which the 808 (OGDEN) reducers is derived.

Red Curve is based on 808A (MITCHELL) Bar check values (mean of period indicated) and various leadline-fathometer comparisons.

The Black Curve is a mean curve of the Blue and Red curves from which the 808A (MITCHELL) reducers is derived.

Reducers July 28-30 — 808A (OGDEN)
0' to 46 Feet
-1' to 132 "
-2 to 210 "

Reducers July 28-Aug. 1 808A (MITCHELL)
0' to 30 Feet
-1' to 93 "
-2' to 150 "
-3' to 204 "

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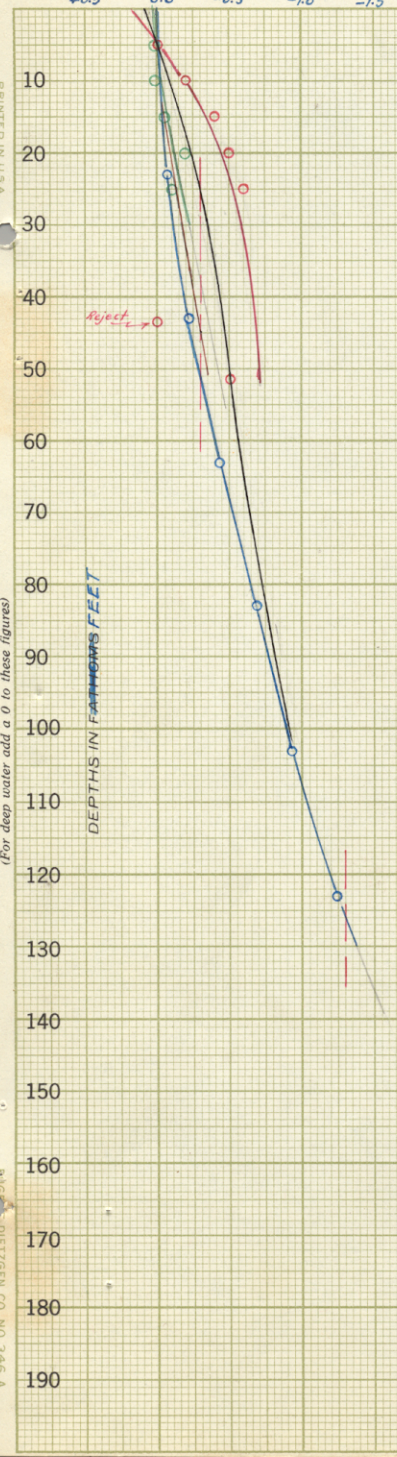
EUGENE DIETZGEN CO. NO. 346 A

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

+0.5 0.0 -0.5 -1.0 -1.5 -2.0 -2.5 -3.0

CORRECTIONS IN ~~FATHOMS~~ FEET



(For deep water add a 0 to these figures)

808A (MITCHELL)
808A (OGDEN)

FATHOMETER CORRECTIONS
U.S. Coast and Geodetic Survey

~~Ship~~ Launches Mitchell and Ogden
L. E. Rittenburg Comdg.

These corrections are to be used between July 25 1941 and ——— 19
in the locality Casco Bay, Maine
for hydrographic surveys Nos. 2001

Note: Blue curve is based on values obtained from the British Admiralty Tables against a rated velocity of 820 fm/sec. (1499.6 m/sec) for both fathometers.

Green curve is from 808A (OGDEN) Bar Check Values (mean for the day) and a mean of the blue and green curve is to be used for obtaining the fathometer readings within the limits of the green curve.

Red curve is based on 808A (MITCHELL) Bar Check values (mean for the day) and lead line - fathometer comparison.

Black curve is a mean curve of the red and blue curves to obtain reducers for the 808A (MITCHELL).

Brown curve is a mean curve of the green and blue curves to obtain reducer for 808A (OGDEN)

Reducers July 25, 1941 808A (OGDEN)
0' to 45' Feet
-1' to 126 "
-2' Rest

Reducers July 25, 1941 808A (MITCHELL)
0' to 25 Feet
-1' to 126 "
-2' Rest

PRINTED IN U.S.A.

PROD. DIETZGEN CO. NO. 346 A

(Let 1 inch equal 4 fathoms for deep water and 1 inch equal 0.4 fathom for shoal.)

+0.5 0.0 0.5 -1.0 -1.5 -2.0 -2.5 -3.0

CORRECTIONS IN ~~FATHOMS~~ FEET

808A (OGDEN)

FATHOMETER CORRECTIONS
U.S. Coast and Geodetic Survey

Ship Launches MITCHELL & OGDEN
I.E. Riffenburg Comdg.

These corrections are to be used between August 4, 1941 and August 8, 1941 incl in the locality Casco Bay

for hydrographic surveys Nos. 2001

NOTE: Blue curve is based on values obtained from the British Admiralty Tables against a rated velocity of 820 fm/sec. (1499.6 m/s.) from serial temperatures and salinities obtained Aug. 7.

Green curve is based on the averages of the Bar Checks and Leadline - Fathometer comparisons. (the later aren't dependable due to the unevenness of the bottom).

The Brown curve is a mean curve of the Blue and Green curves from which the reducers is derived.

Reducers Aug. 4-8 incl. — 808A (OGDEN)
0' to 35 Feet
-1' to 119 "
-2 to 203 "

DEPTHS IN ~~FATHOMS~~ FEET

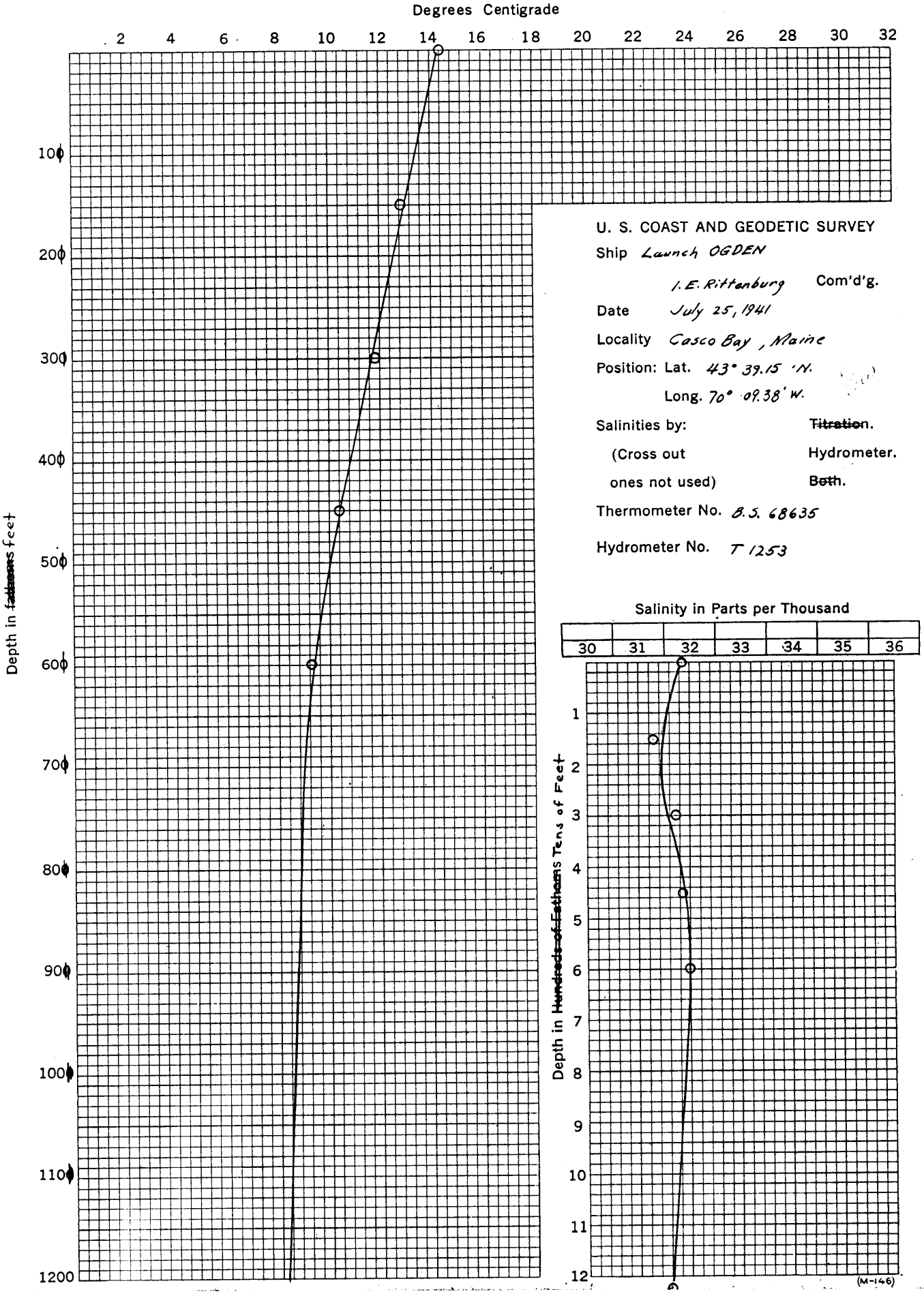
10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190

(For deep water add a 0 to these figures)

PRINTED IN U.S.A.

EUGENE DIETZGEN CO. NO. 346 A

GRAPH OF WATER TEMPERATURES AND SALINITIES



U. S. COAST AND GEODETIC SURVEY

Ship *Launch OGDEN*

I. E. Rittenburg Com'd'g.

Date *July 25, 1941*

Locality *Casco Bay, Maine*

Position: Lat. *43° 39.15' N.*

Long. *70° 09.38' W.*

Salinities by: ~~Titration~~.

(Cross out ones not used) Hydrometer.

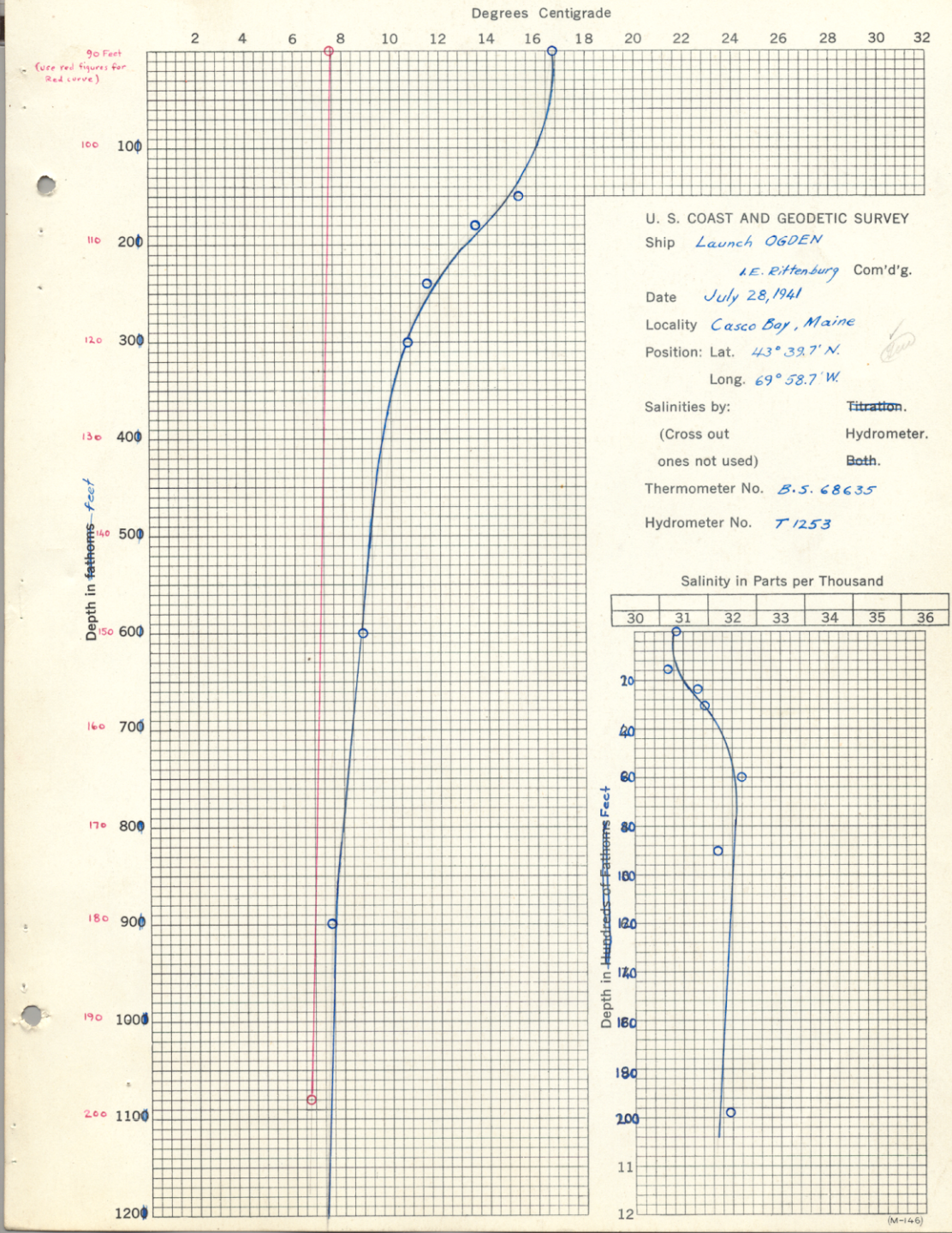
~~Both~~.

Thermometer No. *B.S. 68635*

Hydrometer No. *T 1253*

(M-146)

GRAPH OF WATER TEMPERATURES AND SALINITIES



U. S. COAST AND GEODETIC SURVEY

Ship Launch OGDEN

L.E. Rittenburg Com'd'g.

Date July 28, 1941

Locality Casco Bay, Maine

Position: Lat. 43° 39.7' N.

Long. 69° 58.7' W.

Salinities by: ~~Titration~~.

(Cross out ones not used) Hydrometer.

~~Both~~.

Thermometer No. B.S. 68635

Hydrometer No. T 1253

(M-146)

GRAPH OF WATER TEMPERATURES AND SALINITIES

Degrees Centigrade

2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32

120 Feet
(Use red figures for Red curve)

130 140 150 160 170 180 190 200

Depth in ~~fathoms~~ Feet

100 200 300 400 500 600 700 800 900 1000 1100 1200

U. S. COAST AND GEODETIC SURVEY

Ship Launch OGDEN

I.E. Rittenburg Com'd'g.

Date August 7, 1941

Locality Casco Bay, Maine

Position: Lat. 43° 36.2'N.

Long. 70° 04.6'W.

Salinities by: ~~Titration~~.

(Cross out ones not used) Hydrometer.

~~Both~~.

Thermometer No. BS 68635

Hydrometer No. T 1253

Salinity in Parts per Thousand

30 31 32 33 34 35 36

Depth in ~~Hundreds of Fathoms~~ Feet

20 40 60 80 100 120 140 160 180 200 220 12

(M-146)

August 7, 1941

Depth	Temp.	Av. Temp.	Salinity	Av. Salinity	Velocity	Factor	Correction
3	19.2		31.5		1512.7	+.0087	+
23	12.1	15.6	32.2	31.8	1502.2	+.0017	+ 0.03
43	10.0	13.8	32.5	32.1	1496.8	-.0019	- 0.08
63	9.6	12.7	32.5	32.2	1493.3	-.0042	- 0.25
83	9.3	12.0	32.5	32.2	1491.0	-.0057	- 0.46
103	9.0	11.5	32.5	32.3	1489.5	-.0067	- 0.67
123	8.8	11.1	32.6	32.3	1488.1	-.0077	- 0.92
143	8.7	10.8	32.6	32.4	1487.3	-.0082	- 1.15
163	8.6	10.6	32.6	32.4	1486.7	-.0086	- 1.38
183	8.5	10.4	32.6	32.4	1486.0	-.0091	- 1.63

3	23	43	63	83	103	123	143
1516.3	1505.5	1499.7	1496.0	1493.6	1491.9	1490.5	1489.4
- 3.6	- 3.4	- 3.1	- 3.0	- 3.0	- 2.9	- 3.0	- 2.9
0.0	+ 0.1	+ 0.2	+ 0.3	+ 0.4	+ 0.5	+ 0.6	+ 0.8
1512.7	1502.2	1496.8	1493.3	1491.0	1489.5	1488.1	1487.3

163	183
1488.7	1487.9
- 2.9	- 2.9
+ 0.9	+ 1.0
1486.7	1486.0

Weekly Bar Check Averages and leadline - fathometer comparisons

808A (OGDEN): July 25 (only 1 day of sounding)

	True Depth	Fathometer	Corr.	
Bar Check	5.0 Ft.	4.8 Ft.	+	0.20 Ft.
	10.0 "	9.9	+	0.10
	15.0	15.05	-	0.05
	20.0	20.2	-	0.20
	25.0	25.1	-	0.10

808A (MITCHELL): July 25 (only 1 day of sounding)

Bar Check	5.0	5.0		0.00
	10.0	10.2	-	0.20
	15.0	15.4	-	0.40
	20.0	20.5	-	0.50
	25.0	25.6	-	0.60
(L.L.)	43.5	43.5	-	0.00 ? (probably uneven bottom)
"	51.5	52.0	-	0.50

(OVER)

Weekly Bar Check Averages (compiled from daily bar checks) and Leadline - Fathometer Comparisons

808 A (OGDEN): July 28, 29, and 30

True Depth	5.0	Fathometer	5.0	Corr.	0.00		
	10.0		10.0		0.00		
Bar Check	15.0		15.2	−	0.20		
	20.0		20.4	−	0.40		
	25.0		25.4	−	0.40		
(L.L.)	148.0		149.0	−	1.00		
(L.L.)	158.0		159.5	−	1.50		

808 A (MITCHELL): July 28, 29, 30, August 1

Bar Check	5.0		5.0		0.00		
	10.0		10.1	−	0.10		
	15.0		15.2	−	0.20		
	20.0		20.4	−	0.40		
	25.0		25.5	−	0.50		
Leadline	40.5		41.5	−	1.00		
"	51.5		52.0	−	0.50		
"	46.0		47.0	−	1.00		
"	52.5		53.5	−	1.00		
"	53.0		54.5	−	1.50		
"	54.5		54.5		0.00	?	
"	57.0		58.0	−	1.00		
"	105.5		107.5	−	2.00		

808 A (OGDEN): August 4, 6, 7, and 8

Bar Check	5.0		5.0		0.00		
	10.0		10.1	−	0.10		
	15.0		15.2	−	0.20		
	20.0		20.4	−	0.40		
	25.0		25.4	−	0.40		
Leadline	47.0		48.0	−	1.00		
"	58.0		58.7	−	0.70		
"	58.5		60.0	−	1.50		
	182.4		184.2	−	1.80		

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. June 1937

TIDE NOTE FOR HYDROGRAPHIC SHEET

October 28, 1941.

~~Division of Hydrography and Topography.~~

Division of Charts: Attention: Mr. H.R. Edmonston

Plane of reference approved in
14 volumes of sounding records for

HYDROGRAPHIC SHEET 6661

Locality Casco Bay, Western Part

Chief of Party: I. E. Rittenburg in 1941
Plane of reference is mean low water reading
8.6ft. on tide staff at Portland
19.0ft. below B. M. 1

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

Condition of records satisfactory except as noted below:

H.A. Marmer

Acting Chief, Division of Tides and Currents.

U. S. GOVERNMENT PRINTING OFFICE 154327

FORM M-238

MEMORANDUM

IMMEDIATE ATTENTION

SURVEY
DESCRIPTIVE REPORT
~~PHOTOSTAT OF~~

No. H H6661

~~No. H~~

received Oct. 25, 1941
registered Oct. 27, 1941
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			Pages 6, 7
26			
30			
40			
62			
63			
82			
✓ 83			Pages 6, 7
88			
90			

RETURN TO

82	R. W. Knox

DIVISION OF CHARTS

SURVEYS SECTION

REVIEW OF HYDROGRAPHIC SURVEY

REGISTER NO. H-6661
FIELD NO. 21

Maine; Western Party of Casco Bay
Surveyed in May-Aug. 1941, Scale 1:20,000
Instructions dated May 7, 1941 (OCEANOGRAPHER)

Soundings:
808A Recorder
Hand Lead

Control:
Sextant Fixes on Shore Signals

Chief of Party - I. E. Rittenburg.
Surveyed by - R. A. Gilmore; J. C. Ellerbe.
Protraced by - H. J. Bozzo.
Soundings plotted by - H. J. Bozzo.
Verified and inked by - G. B. Littlepage.
Reviewed by - J. A. McCormick, Feb. 23, 1942.
Inspected by - H. R. Edmonston.

1. Shoreline and Signals.

Topographic signals west of long. 70°10' are from graphic control survey T-6846 (1941). Control surveys east of long. 70°10' are not available for comparison. Shoreline is from old surveys and is to be superseded by air photographic maps which are not yet available.

2. Sounding Line Crossings.

Very good considering the extremely irregular bottom in this area.

3. Depth Curves.

Satisfactory for the same reason.

4. Adjoining Surveys.

The junction on the west with H-6677 (1941) will be considered in the review of that survey. Surveys on the north and northwest have not been received from the field. The area in the vicinity of Inner and Outer Green Islands was developed on the 1:10,000 scale sheet on the north but the area about Halfway Rock was not developed this season. New surveys will be made on the east and south at some future date.

5. Previous Surveys.

H-4853 (1928), 1:40,000; H-3033 (1909), 1:10,000;
H-860 (1864), 1:40,000; H-857 (1864-65, 1:10,000;
H-841 (1863), 1:20,000; H-820 (1862), 1:20,000;
H-726 (1859), 1:20,000; H-699 (1859), 1:40,000; H-664 (1857-58),1:40,000;
H-404 (1855), 1:10,000; H-403 (1855), 1:20,000.

Surveys of 1909 and 1928 contribute little to the previous development of the area being considered. Most of the previous basic work is from surveys averaging 80 years in age. The reviewer does not wholly subscribe to the "wooden ships and iron men" theory that the old sailormen could "smell out" shoal water particularly when many of the differences between old and new surveys occur in depths of 60 feet or more and usually result from single shoal soundings on widely spaced lines of the old surveys. General agreement is good. Discussion and disposition of outstanding differences follow.

(1) Several depths of 58 to 81 feet (charted) in the vicinity of lat. 43°40', long. 70°09' on H-726 are shoaler by 9 to 15 feet than depths in this area on the present survey. No fixes are recorded for any of the lines on which these soundings appear. Shoalest of the lot, is a 58-foot depth in lat. 43°40.3', long. 70°09.6 falling in 67 feet at the very edge of the present survey. Adjoining surveys may develop shoaler depths than the 67 but the 58 and other shoal soundings should be disregarded.

(2) The 69 foot sounding (charted on 201 and 325) in lat. 43°39.4', long. 70°10.1' on H-404 falls in depths of 76 to 84 feet on the present survey. Accuracy of the old survey is not considered sufficient to warrant retention of the 69 and it should be disregarded.

(3) The 51 foot sounding (charted on 201 and 325) in lat. 43°37.3', long. 70°11.0' on H-404 falls in 70 feet on the present survey. Surrounding depths on the two surveys are in similar disagreement. Depths more in accord with the 51 are found 150 meters to the northwest on H-6377 (1941). The 51 should be disregarded.

(4) The 57 foot sounding (charted) in lat. 43°36.4', long. 70°10.1' on H-403 falls in depths of 58 to 100 feet on the present survey. The 58, 200 meters southeast of the 57, is sufficient for charting purposes and the 57 should be disregarded.

(5) The 60 foot sounding (charted) in lat. 43°38.5', long. 70°09.0' on H-726 falls in 65 feet on the present survey. The difference is not sufficient to warrant retention of the 60 and it should be disregarded.

(6) The 81 foot sounding (charted 81 on 315, erroneously 79 on 201) in lat. 43°39.6', long. 70°07.4' on H-726 falls in depths 91 to 112 feet on the present survey. Agreement of surrounding depths on the two surveys is even worse. The 81 should be disregarded.

(7) The 69 foot sounding (charted) in lat. 43°39.15', long. 70°07.9' on H-726 falls in depths of 97 to 109 feet on the present survey. It should be disregarded in favor of the shoal depths closer to Outer Green Island.

(8) The 57 foot sounding (uncharted) in lat. 43°36.9', long. 70°07.5' on H-860 falls in depths of 75 to 110 feet on the present survey. The 57 has been carried forward as the shoalest depth in the vicinity although surrounding depths are not in very good agreement. It was cleared with a 49 foot effective depth on H-3677 (1914) W.D.

(9) The 54 foot sounding (charted) in lat. 43°36.0', long. 70°06.4' on H-860 falls in 92 feet of water on the present survey but is also within 200 meters of a 46 foot depth on the new work. The 54 can be disregarded.

(10) The 51 foot sounding (charted) in lat. 43°36.7', long. 70°05.7' on H-860 falls in depths of 100 to 148 feet on the present survey. Nearest similar depth on the present survey is 0.3 mile northwest. The position of the 51 on H-860 checks but the sounding, falling as it does in a definite deep on the present survey, is believed to be 10 fathoms in error. The area was covered with an effective depth of 51 feet on H-3677 (1914) W.D. The 51 should be disregarded.

(11) The 60 foot sounding (charted) in lat. 43°38.3', long. 70°05.2' on H-664 falls in 66 feet of water on the present survey and was cleared with an effective depth of 49 feet, on H-3677 (1914) W.D. The difference is not of sufficient importance to warrant retention of the 60. Disregard.

(12) The 141 foot depth (charted) in lat. 43°38.1', long. 70°04.1' on H-664 falls in 177 feet on the present survey but close enough to shoaler depths to the west and southeast to be disregarded. The area was cleared with a 50 foot effective depth on H-3677 (1914) W.D.

(13) The 121 foot depth (charted) in lat. 43°36.9', long. 70°05.0' on H-664 falls in 145 to 173 feet on the present survey but within 200 meters of 120 foot depths on the northwest and southeast. The area was cleared to 49 feet on H-3677 (1914) W.D. The 121 can be disregarded.

(14) The 57 foot sounding (charted) in lat. 43°36.1', long. 70°04.9' on H-860 falls in 74 feet on the present survey. If the 57 were plotted according to its distance from Bulwark Shoal it would be in agreement with present depths. The 57 should be disregarded.

(15) A depth of 24 feet (charted) in lat. 43°36.2' long. 70°04.2' on H-796 (now a boatsheet for H-841) falls in depths of 26 to 36 feet on the present survey. The 24 is not original with H-796 and probably belongs further to the south in similar depths on Bulwark Shoal. The 24 has not been retained.

(16) The 60 foot sounding (charted) in lat. 43°36.0', long. 70°03.8' on H-841 falls in 84 to 100 feet and about 0.2 mile east of the 60 foot curve on the present survey. The 60 is on a line which appears to be reconnaissance with no position numbers and with soundings spaced at 0.2 mile intervals. It probably should plot closer to Bulwark Shoal and therefore has not been retained.

(17) The 28 foot sounding (charted) in lat. 43°36.25', long. 70°04.0' on H-726 falls in depths of 36 to 55 feet on the present survey. The 28 has been carried forward because of good agreement of surrounding depths on the two surveys.

(18) The 159 foot sounding (charted) in lat. 43°38.4' long. 70°03.5' on H-664 falls in 219 feet on the present survey but sufficiently close to shoaler depths on the east and west to warrant being disregarded. The area has been covered by an effective drag depth of 51 feet on H-3677 (1914) W.D.

(19) The position of a 22 foot sounding (charted) in lat. 43°41.0', long. 70°01.0' on H-820 is too indefinite to warrant its retention. Depths of 26 feet at the plotted position of the 22 and 21 feet 0.2 miles to the eastward on the present survey are sufficient for charting purposes. Disregard 22.

(20) The 60 foot depth charted in lat. 43°39.7', long. 70°01.9' agrees in position with a 10 3/4 fathom sounding on H-664 but falls in 146 feet on the present survey. The 10 3/4 disagrees with two crosslines on H-664 and, if plotted according to line and time, would agree both with H-664 and the present survey. The 60 should be disregarded.

(21) The 46 foot sounding (charted) in lat. 43°37.8', long. 70°02.8' on H-664 falls in depths of 77 to 113 feet on the present survey. The 46 appears to be 10 fms. in error and a clearing depth of 50 feet on H-3677 (1914) W.D. is considered sufficient cause to disregard it.

(22) The 67 foot sounding (charted) in lat. 43°37.8', long. 80°01.1 on H-664 falls in 94 to 128 feet on the present survey and was cleared with an effective drag depth of 50 feet on H-3677 (1914) W.D. The depth is considered dubious but has been carried forward.

(23) The 70 foot sounding (charted) in lat. 43°37.9', long. 70°00.0' on H-664 falls in depths of 102 to 148 feet on the present survey and was cleared with an effective drag depth of 51 feet on H-3677 (1914) W.D. The 70 has been carried forward.

(24) The 111 foot sounding (charted) in lat. 43°37.7', long. 69°59.2' on H-664 falls in depths of 125 feet on the present survey and was cleared with an effective drag depth of 52 feet on H-3677 (1914) W.D. A depth of 113 feet 0.2 mile northeast on the present survey is sufficient reason to disregard the 111.

Summing up, 4 soundings have been brought forward in the 24 cases discussed. With these additions, the present survey supersedes all of the old surveys in the common areas. It will be necessary, however, to retain most of the bottom characteristics now charted (see par. 8).

6. Wire Drag Surveys.

H-3677 (1914) W.D., H-6662 (1941) W.D., H-6663 (1941) W.D., H-6670 (1941) W.D., H-6674 (1941) W.D.

All of these drag surveys were examined closely. Conflicts between drag depths and hydrography are few and are not in excess of 1 to 2 feet. Such conflicts are unimportant and could be due to lift, chop, swell or kelp. A 44 foot sounding (charted in lat. 43°36.8', long. 70°04.3' on H-3677 falls in depths of 150 feet on the present survey. The plotted position of the 44 resulted from an error in the right angle, the correct position placing it in depths of 40 to 45 feet (also obtained on H-3677) about 300 meters to the northwest. The considerable number of soundings added to the present survey from drag surveys indicates the value of the latter in such irregular area.

7. Comparison with Chart 201 (New Print of Jan. 24, 1942).
Chart 315 (New Print of Jan. 7, 1942).
Chart 325 (New Print of Aug. 21, 1941).

a. Hydrography

Hydrography charted in this area is almost entirely from surveys discussed in the foregoing paragraphs. Some corrections have been added from chart letters reporting shoals found on the present survey and on contemporary wire drag surveys. Discussion of a few questionable soundings follows.

(1) The 38 foot depth charted in lat. 43°38.7', long. 70°10.5' originates with Chart Letter 347 of 1926 which states that the 38 is the least depth on the dumping grounds in 1918. The position is probably approximate. Closely spaced depths of 46 to 50 feet were obtained on the present survey at the reported position but a grounding of 34 feet on H-6662 (1941) W.D. occurred just 150 meters to the south. The 38 should be disregarded .

(2) A depth of 60 feet charted in lat. 43°37.8', long. 70°04.7' falls in 95 feet on the present survey. The chart compiler appears to have mistaken a 16 fm. sounding on H-664 (1857-58) for 10 fms. The 60 should be disregarded.

(3) A 2 foot depth charted in lat. 43°40.2', long. 70°06.4' originates with Chart Letter 547 of 1941 and falls in 5 feet on the present survey. The chart letter is from the OCEANOGRAPHER and the 2 was probably obtained on an adjoining survey not yet received from the field. The 2 should be retained pending review of the adjoining survey.

(4) The 57 foot depth charted in lat. 43°40.9', long. 70°01.8' falls in 96 to 119 feet on the present survey. The compiler has mistaken a 19½ fathom sounding on H-664 for 9½ fathoms. The 57 should be disregarded.

b. Navigational Aids.

Survey positions of floating aids differ slightly from charted information but none of the differences are of an importance sufficient to warrant correspondence with the U. S. Coast Guard. Some of the aids were established subsequent to the survey.

8. General Comment.

Insufficiency of bottom characteristics, so far typical of 808 Recorder surveys, is particularly noticeable. As regards sounding records, the office verifier's report states, "Sounding records have been corrected extensively by the verifier. The selection of soundings from the fathograms was poor, the tendency being to select the peaks and omit the deeps. Differences of as much as 8 fathoms were noted. The recording of these soundings is of particular value in interpreting the bottom and evaluating crossings and surrounding depths. These deeps, occurring mostly at odd intervals, were entered in the sounding records by the verifier."

9. Compliance with Project Instructions.

Satisfactory except as regards bottom characteristics (see preceeding paragraph).

10. Additional Field Work Recommended.

No additional work is immediately necessary in this area. The Descriptive Report, page 2, states that additional work should be done in the southern section of the sheet, particularly where old soundings were not checked by a large margin. Most of these old soundings have been disposed of but development inside the 60 foot curve north of Bulwark Shoal (including the 28 carried from H-726) and a generous overlap of surveys would be desirable when work is resumed on the south.

The remaining three soundings of the four carried from old surveys (par. 5-8, 5-22, 5-23) have only a nuisance value. All have been cleared with effective drag depths of 49 to 51 feet and cannot be considered indications of materially shoaler depths. Additional investigation would probably enable the office to remove them from the charts.

The Descriptive Report, page 7, also suggests drift sounding in the vicinity of the 21 foot sounding obtained on the present survey in lat. 43°40.97', long. 70°00.85' and development of the triangular area to the northeast. Attention is also directed to the fact that the area in the immediate vicinity of Halfway Rock was not surveyed in 1941, although the intent was to accomplish the development on the larger scale survey on the north (see par. 4).

Many other shoal indications would require investigation had the greater ~~position~~ of the area not been dragged. Outstanding case is the 47 foot depth between depths of 99 and 105 feet in lat. 43°39.7', long. 70°04.0' on the present survey. The 47 was cleared with an effective drag depth of 42 feet on H-6662 (1941) W.D.

11. Superseded Surveys

H-4853	in part.	H-726	in part.
H-3033	" "	H-699	" "
H-860	" "	H-664	" "
H-857	" "	H-404	" "
H-841	" "	H-403	" "
H-820	" "		

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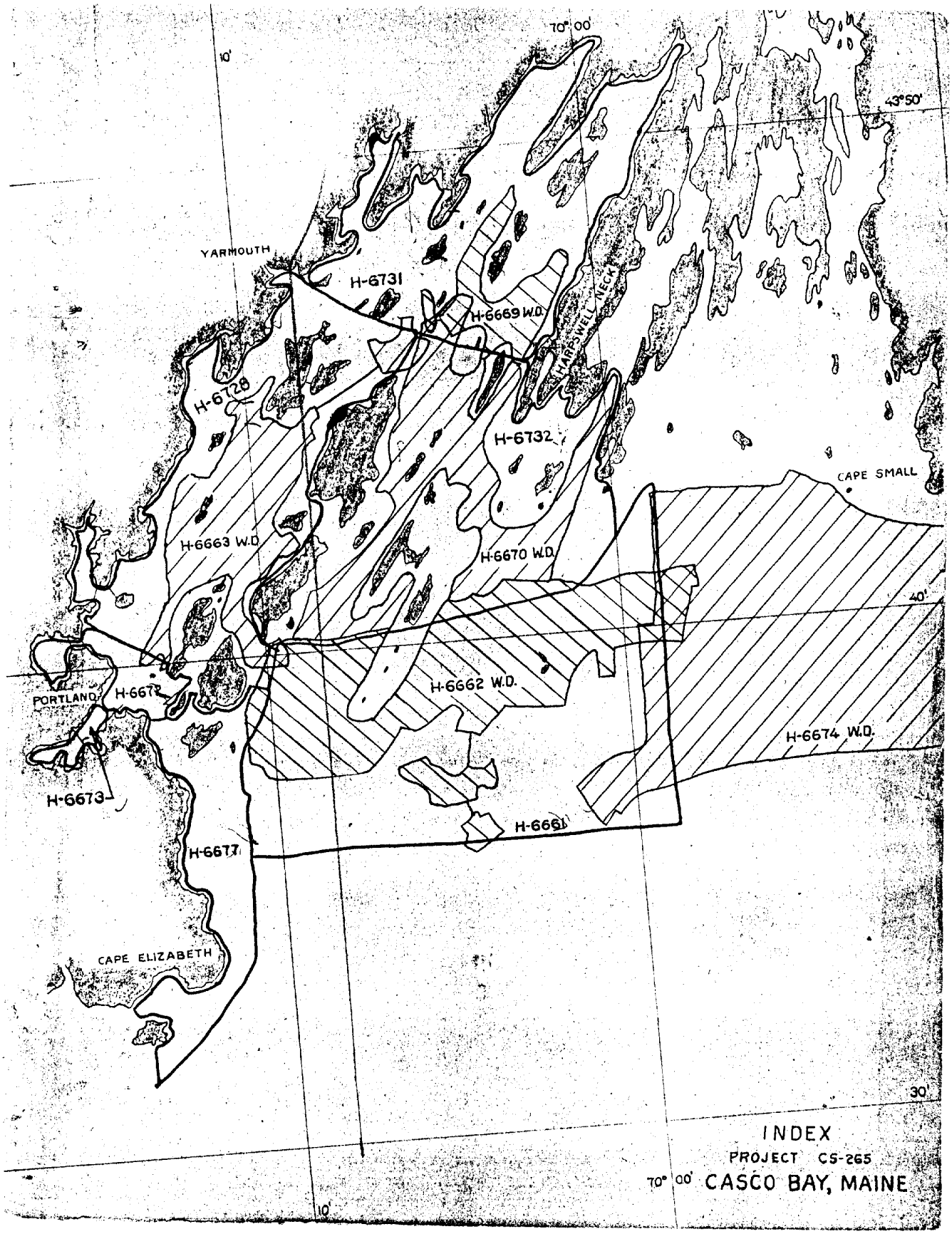
70° 00'
10'
43°50'
YARMOUTH
H-6731
H-6669 W.D.
HARPSWELL NECK
H-6728
H-6732
CAPE SMALL
H-6663 W.D.
H-6670 W.D.
40'
H-6662 W.D.
PORTLAND
H-6672
H-6674 W.D.
H-6673
H-6661
H-6677
CAPE ELIZABETH
30'
10'
INDEX
PROJECT CS-265
70° 00' CASCO BAY, MAINE

Applied to Chr. 201 (Before review + verif.) Critical depths only G.R. Dec. 1941
" " " 315 (" same ") " "

Applied to Chart Cor. 325 (partially applied before being reported as complete, to chart dgs. 201 and 315) H.E.MacSwan 12/12/41
Applied after completion of review to Chart Cor. 315 4/22/42 H.E.M.

Applied to Chart Comp. 201 (new) H.E.M. 3/31/42

" " Chart 1204 G.R. 6/17/42
"
" " " 50 " 6/18/42
" " " 3201 J.F.W Jan 14, 1943

Applied to Reconstruction of Chart 315 (after review) Nov 27, 1943 - J.F.W.

" " 1000 thru 1204 W.F.R Sept 1 1944
" " 1106 thru 1204 G.E. Dec. 2, 1944
CHART 325 (Extension of limits) Applied 1-26-68 H.R.J