

5269

5269

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey *Hydrographic*
 Field No. Office No. *5269*

LOCALITY

State *Massachusetts*
 General locality *George*
 Locality *Bank*

1932

CHIEF OF PARTY
W. G. Parker

LIBRARY & ARCHIVES

DATE

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Form 504
Ed. June, 1928

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

State: Massachusetts

DESCRIPTIVE REPORT
5269

Topographic }
Hydrographic } Sheet No. 1

LOCALITY

Georges Bank

Cultivator Shoal and Vicinity

1932

CHIEF OF PARTY

W.E. Parker

U. S. GOVERNMENT PRINTING OFFICE: 1931

CP

5269

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

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JUN 2 1933

Acc. No. _____

REG. NO. 5269

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. 1

REGISTER NO. **5269**

State Massachusetts

General locality Georges Bank

Locality Cultivator Shoal and Vicinity

Scale 1:40,000 Date of survey June 7 to July 11, 1932

Vessel U.S.C. & G.S.S. HYDROGRAPHER & OCEANOGRAPHER

Chief of Party W. E. Parker and L. O. Colbert

Surveyed by W. E. Parker and L. O. Colbert

~~Plotted~~
Plotted by C. A. Schanck and J. C. Tribble

Soundings penciled by J. C. Tribble

Soundings in fathoms ~~feet~~

Plane of reference M.L.W.

Subdivision of wire dragged areas by _____

Inked by _____

Verified by _____

Instructions dated May 16, 1932

Remarks: _____

*1 Res. Rept.
12 Sdg. Vols.
4 Bomb Records.
2 B.S.
2 Vols. Bury Ltr. (Wladimir #5278)*

DESCRIPTIVE REPORT TO ACCOMPANY

HYDROGRAPHIC SHEET NO. 1

Vicinity: Georges Bank

Project No. HT-107

U.S.C. & G.S.S. HYDROGRAPHER, W. E. Parker, Chief of Party

U.S.C. & G.S.S. OCEANOGRAPHER, L. O. Colbert, Chief of Party

Date of Instructions: May 16, 1932.

Survey Methods:

The usual method of R.A.R. control with two station ships was used for controlling the hydrography.

The HYDROGRAPHER and OCEANOGRAPHER worked together from June 7, 1932, A day through position 21 K, June 21. The HYDROGRAPHER acted as guide ship and maintained control by R.A.R. The OCEANOGRAPHER acted as follow ship and maintained control by taking compass bearings and range finder distances on the HYDROGRAPHER.

On June 21, 1932, beginning with position 24 K, the OCEANOGRAPHER began using R.A.R. for control and continued through M day July 11, 1932.

Notes on Plotting:

HYDROGRAPHER'S Work.

June 8, 1932, B day - On position 20 the station ships are almost on range and the bomb arcs fail to intersect by about 80 meters. The discrepancy was proportioned relative to the distances to the station ships. This occurred several times on various days, each case being treated as explained above.

From position 45 to the end of the day's work, no bomb distances were obtained from the GILBERT, making it necessary to depend on bearings, dead reckoning and the bomb distances from the LYDONIA. Up to position 70 the bearings checked very well, but beyond this point, the distance was too great for satisfactory bearings. The remainder of the line was plotted by dead reckoning and the bomb distances from the LYDONIA.

June 9, C day - Most of the ~~usual~~ bearings were disregarded in plotting this day's work as the R.A.R. checked on almost every position. It was the practice to disregard bearings on all days' work except as a check and when no other control was available. This was found advisable since most of the bearings were taken from a great distance and could not be expected to furnish accurate control. Also a deviation of one to two degrees was usually present in the gyro compass, being caused by changes of course and speed. Consequently, the exact deviation could not be known throughout any day.

June 11, E day - From position 1 to 11 the line was plotted on tracing paper and shifted to fit the bomb distances from the LYDONIA. All GILBERT distances, except those for positions 10 and 11, were rejected. Bearings on the GILBERT were used as a check.

From position 30 to 47 the dead reckoning failed to check the bomb distances and bearings. The line was plotted on tracing paper and adjusted to those bomb distances and bearings that seemed to be in agreement. From position 53 to end of day the bomb distances checked well.

June 12, F day - From position 68 to 95 the ship was passing through strong currents. On this section of the line all data were projected on the sheet and a dead reckoning line laid down on tracing paper and adjusted to fit the bomb distances and bearings that were in agreement.

Beginning with position 114 the plotting was taken up by J. C. Tribble, the plotting up to this point having been done by C. A. Schanck.

Positions 129 to 133 were plotted by dead reckoning and adjusted to the bomb distances from the LYDONIA.

June 13, G day - This day's plotting proved difficult due to frequent misses and erroneous returns from the GILBERT. This in all probability was due to the radio operator applying too much current to the amplifier, thereby causing returns due to water noises.

The turning point between positions 26 and 28 was determined by back plotting from position 33. From position 18 to the turning point the line was plotted on tracing paper and adjusted to bomb distances from the LYDONIA. Several GILBERT distances between positions 56 and 63 were rejected as being obviously wrong. This portion of the line was plotted on tracing paper and adjusted to the accepted bomb distances.

June 14, H day - Little difficulty was experienced in plotting this day's work. The bomb distances were numerous and for the most part in good agreement. Several distances were rejected as being obviously wrong and several others were rejected that did not check adjacent positions, though the error was small. Bearings were used only as a check.

June 15, J day - Positions 34 to 45 were plotted on tracing paper by dead reckoning and adjusted to bomb distances. This was necessary due to the station ships being an equal distance from the sounding ship, thereby making it impossible to get simultaneous returns. Positions 62 to 70 were plotted without much regard to courses, depending mostly on bomb fixes. This was necessary due to numerous changes of course and strong currents.

June 21, K day - Positions 1 to 27 were plotted on tracing paper, using a log factor as determined between distant bomb fixes and then adjusted to the accepted bomb fixes and bearings. Several bomb distances were rejected or not given full weight, even though the error was small. This part of the day's work was difficult to plot due to frequent changes of course and the bomb arcs being so near tangent. The remainder of this day was simple routine plotting with several rejections of bomb distances and minor adjustments.

June 22, L day - The velocity used in computing the bomb distances for this day was apparently too small since numerous arcs fail to intersect.

This made it necessary to plot parts of this day by dead reckoning on tracing paper, adjusting the line to the bomb distances that gave the better agreement. No bearings were obtained on this day due to fog.

OCEANOGRAPHER'S Work

The plotting of the OCEANOGRAPHER'S work while acting as follow ship was very simple, the positions being plotted from the corresponding position of the HYDROGRAPHER'S work. The distances, as determined by the range finder, may easily be in error by as much as fifty meters in numerous cases. Especially is this true when the ship was rolling or pitching. Consequently, these distances were not accepted in every case as being absolutely correct and the attempt was made to plot the lines so that they followed the various changes in course as given in the records.

In a number of cases the turn at the end of a line was not plotted since the log distances as given in the record did not check. This was in all probability due to the fact that often in making a turn one engine would be going astern.

June 13, G day - Position 75 to end of day was not plotted. After completing the day's work the buoy was fouled and lost before its position could be determined. Consequently, the work has no control and can not be accurately plotted. However, the area is quite well covered by other lines, among which appear the shoaler soundings.

June 15, J day - Positions 15 to 36 were not plotted due to poor control. The control given is estimated and it was not considered advisable to try plotting this line. The area involved is well covered by other lines, among which appear the shoaler soundings.

June 22, L day - The poor location of the station ships made parts of this day's work difficult to plot, since a small error in the bomb distances would cause an appreciable error in the location of the line. For this reason a number of the bomb distances were rejected, even though they were only slightly out of agreement with adjacent positions.

July 11, M day - This day's work was plotted by dead reckoning on tracing paper and adjusted to visual bearings and the few bomb distances that appeared to be not too much in error.

The bomb distances and bearings from the LYDONIA after nine o'clock are worthless for furnishing accurate control since the ship was dragging over an area of about two miles. Neither can the bearings be given full weight as the ship was rolling heavily. A number of the bearings were found to be out of agreement and were ^{not} used.

Discrepancies:

Lat. $41^{\circ} 46.9'$, positions 37 C to 38 C (HYDROGRAPHER)
Long. $68^{\circ} 02.2'$, the time on course does not check as plotted. 38 C probably should be moved to the east.

Line adjusted, satisfactorily.

Dr

Lat. 41° 41.2', positions 46 C to 47 C (HYDROGRAPHER) and positions. Plotting accepted.
Long. 67° 59.8', 43 C to 44 C (OCEANOGRAPHER). Soundings on this crossing are out about four fathoms, but the bottom is so irregular at this point that a slight movement of either line will adjust this. Condition appears quite probable

Lat. 41° 39', positions 77 F to 80 F (OCEANOGRAPHER)
Long. 68° 02'. The crossings made by this line do not agree by one to three fathoms. Some of the soundings appear to be in error since the line can not be shifted to clear this discrepancy. 19 fath. s.dg. makes a bath. crossing with a 17 fath. s.dg. The rest of the line appears quite probable. The 19 fath. s.dg. (not plotted) makes line ok

Lat. 41° 41', 64 C to 65 C (OCEANOGRAPHER)
Long. 67° 56'. The crossing here is out two fathoms. However, a slight movement of this portion of the line to the north will give good crossings. Line shifted as suggested.

Lat. 41° 35', positions 43 G to 47 G (OCEANOGRAPHER)
Long. 67° 57.5'. It is believed that this portion should be moved to the east enough to clear up the 20-fathom curve. This section of the line is not well fixed anyway due to many changes of course and various speeds. Line adjusted as suggested. Resulting change makes soundings appear in their more probable positions

Lat. 41° 36', positions 98 H to 99 H (OCEANOGRAPHER)
Long. 68° 12'. It is suggested that this portion of the line be moved to the west in order to clear up the ten-fathom curve at this point. Change made as suggested. Resulting change makes s.dgs. appear in their more probable positions.

Lat. 41° 34' to 41° 41', L day and M day (OCEANOGRAPHER)
Long. 68° 23' to 68° 26'. Due to very poor control this work is in bad agreement and will require shifting to obtain any possible agreement. It is suggested that the following shifts in the lines be made: L and M day lines adjusted. The resulting positions of the lines appear to be in their most probable position.

Positions 32 M. to 38 M to the eastward. It appears that 36 M should be shifted to about the location of 36 L. It is believed that 38 M can be held as plotted, but from 38 M to 50 M the line should be moved west. A slight movement of the line between 40 L and 45 L to the eastward is suggested, holding 40 L as fixed. 55 M to 68 M should be moved to the eastward in order that the shoal soundings between 57 M and 60 M will be east of the deeper soundings shown between positions 47 M and 50 M. Pos. 106L - 106L was erroneously plotted. The replotted pos. of L day agree with accredited s.dgs. of other lines.

It is believed that 67 M should be east of the line "56 L - 58 L". A movement to the westward of the line between 100 L and 106 L is suggested in order to bring the deeper soundings on this line west of the shoal area.

Any adjoining work on other sheets will be of material aid in locating these lines and should be taken into consideration.

The twenty-fathom curve could not be drawn in the above area and was left out. 20 fath. curve now ok.

No comparison with adjoining sheets was made since the other sheets were not available at the time.

Soundings between pos. 29L + 32L (Ocean) and soundings between pos. 65L + 70L (Ocean) not plotted. The adjoining work (45272) shows the fathometer evidently registering erroneously in depths of 100 or over fathoms. Auth. of L.O.C.

In general, the soundings on this sheet are in good agreement and it is believed the lines as shown are accurately located with the exception of cases noted.

Respectfully submitted,

J. S. Borden
for John C. Tribble, Jr.
Aid, C. & G. Survey.

STATISTICS FOR HYDROGRAPHIC SHEET, FIELD NO. 1

Day	Date 1932	<u>HYDROGRAPHER</u>		
		No. of positions	No. of soundings	No. of statute miles of sounding line
A	June 7	43	327	32.5
B	" 8	105	831	123.0
C	" 9	90	574	102.0
D	" 10	62	622	72.0
E	" 11	66	747	88.0
F	" 12	133	1306	168.0
G	" 13	66	706	66.5
H	" 14	114	1136	125.8
J	" 15	76	719	59.0
K	" 21	84	756	84.0
L	" 22	108	913	131.5
M	" 25	8	8	
N	July 7	7	36	3.5
Total		962	8681	1055.8

<u>OCEANOGRAPHER</u>				
A	June 7	16	107	16.6
B	" 8	113	728	121.0
C	" 9	112	749	96.0
D	" 10	85	519	51.0
E	" 11	108	1098	90.6
F	" 12	215	1861	148.7
G	" 13	91	598	50.2
H	" 14	188	1382	123.9
J	" 15	36	190	22.5
K	" 21	102	502	74.9
L	" 22	151	767	137.0
M	July 11	103	583	76.8
Total		1320	9084	1009.2
		962	8681	1055.8
Total for two ships		2282	17765	2065.0

POST-OFFICE ADDRESS:

U. S. Coast & Geodetic Survey
Ship "HYDROGRAPHER"
Port Arthur, Texas.

TELEGRAPH ADDRESS:

EXPRESS OFFICE:

*200 SHE
21 MAY
80* 1210

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

May 24, 1933.

TO: Chief Section Field Work,
Division Hydrography & Topography,
Coast and Geodetic Survey,
Washington, D. C.

FROM: W. E. Parker, Captain,
Coast and Geodetic Survey.

SUBJECT: Descriptive Report, Sheet No. 1, - *Req 5153*
Vicinity, Georges Bank. *Jan*

Receipt is acknowledged with thanks, of Descriptive Report to Accompany Hydrographic Sheet No. 1, Vicinity, Georges Bank.

This report appears to have been well done, but it contains one statement with which I can not agree. It says, in paragraph, June 9, C day, page one, "Also a deviation of one to two degrees was usually present in the gyro compass, being caused by changes of course and speed."

With the exception of one time when the mercury in the floating ballistic became oxidized and clogged the small ports which permit equalization of the gravity pull of the ballistic, I do not recall that the compass was ever more than one degree off the meridian and rarely more than 1/2 degree. Such small deviations as occur from time to time are due to a slight out of balance condition, usually occasioned by an unequal amount of lubricating oil on opposite bearings. The deviation remains constant until balance is restored, and as an azimuth was observed always on leaving port and daily, when practicable, on the working ground, we were seldom if ever in doubt as to the condition of the compass.

Changes in course have no effect on the compass. Changes in speed do, but that is taken care of by means of a speed regulator on the master compass and is only a fraction of a degree for any speed possible in this ship.

I consider gyro compass bearings entirely reliable, and the fact that we almost invariably make a good land fall or a buoy, when it was possible to predict the current, shows that we could not have been much in error in our knowledge of the condition of the compass.

Of course the strength of a bearing is inversely as the distance and the roughness of the sea but I believe when bomb arcs fail to intersect on or near a bearing one or both of the arcs are usually in error. It may be the assumed velocity or one or both of the times are wrong. That is not to say, however, that I would not reject a bearing on a distant object if it disagreed with a bomb intersection and that intersection agreed well with log distances and courses from adjacent bomb fixes for which there were no bearings. I would regard the bearing as probably correct but not usable because it would throw the position out of its correct relation to adjacent positions.

A handwritten signature in cursive script, appearing to read 'W. E. Parker'.

W. E. Parker, Captain,
Coast and Geodetic Survey,
Commanding "HYDROGRAPHER".

July 20, 1933.

Division of Hydrography and Topography:

✓ Division of Charts:

Tide Reducers are approved in
12 volumes of sounding records for

HYDROGRAPHIC SHEET 5269

Locality **Cultivator Shoal and Vicinity, Georges Bank, Coast of Massachusetts**

Chief of Party: **W. E. Parker and L. O. Colbert in 1932**

Plane of reference is **mean low water reading**

3.3 ft. on tide staff at **Commonwealth Pier No. 5, Boston, Mass**
18.2 ft. below B. M. 7

Allowance made for time and range of tide on the working grounds

Time -1^h 15^m; range 0.5 as large

~~XX~~

Height of mean high water above plane of reference on working grounds

is 4.7 feet.

Paul P. Whitney
Chief, Division of Tides and Currents

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 5269.
Cultivator Shoal & Vicinity,
Georges Bank, Mass.
Surveyed in 1932.

Instructions dated May 16, 1932 (Hydrographer).

Chief of Party - W. E. Parker, L. O. Colbert.
Surveyed by - W. E. P., L. O. C.
Protracted by - C. A. Schanck, J. C. Tribble.
Soundings plotted by - J. C. T.
Verified and inked by - G. Risegari.

1. The records conform to the requirements of the General Instructions.
2. The plan and character of development fulfill the requirements of the General Instructions.
3. The plan and extent of development satisfy the Specific Instructions.
4. The usual depth curves can be completely drawn.
5. The field plotting was completed in accordance with the General Instructions with the following exception, -- numerous sounding position numbers are considered too large and in a number of cases could be mistaken for soundings in a photographic reproduction.
6. Junction with H. 5272 (West, North) will be reported by the verifier of that sheet when it is completed.

Junction with H. 5173, H. 5195 (East) is satisfactory. It was necessary to shift the ends of two lines of H. 5195, which were considered weak, and to make slight adjustments to other overlapping lines in order to effect a harmonious agreement between H. 5195 and H. 5269. No adjustment was necessary with work on H. 5173.

Junction with H. 5270 (South) is satisfactory.

7. There were a number of sections of lines which had to be adjusted on account of bad crossings or other irregularities in the work. (See page 3 of the report). Notes in pencil are appended in the right hand margin of page 3, giving the changes after each case was investigated.
8. The area covered by this survey appears to be satisfactorily developed.

Attention might be called, however, to two 13 fathom and two 12 fathom spots, which give indications of a shoaling in each case and two gaps in the work. These are located respectively, -

lat. 41° 44'	long. 68° 02'
" 41° 43'	" 68° 04'
" 41° 42'	" 68° 04'
" 41° 47'	" 67° 56'
" 41° 45'	" 67° 53'
" 41° 32'	" 67° 54'

The two gaps mentioned show unmistakable indications of shoalings and more development would have been desirable for these areas.

Reviewed by - G. Risegari - August 18, 1933.

Inspection Note by A. L. Shalowitz.

A. Additional Work.

While many of the shoals found doubtless have less water over them than is indicated by this survey, it is believed that sufficient indications have been obtained in all cases to give a good representation of the general character of the bottom. In an area with as broken a bottom as exists on this sheet, it is almost impossible, without an undue expenditure of time, to get more than a good delineation of the major shoals with a fair representation of the numerous minor shoals.


The following places, however, ^{are} noted as being of sufficient importance to have justified further examination:

1. The 9 fathom bank in lat. 41° 43' long. 68° 13'. This bank lies close to the 20 fathom curve and may be in the track of vessels running from Nantucket Lightship to Nova Scotia.
2. The 12 fathom bank in lat. 41° 47' long. 67° 56'. This 12 is corroborated by a 14 fathom sounding on H. 5173. Falling close to the 20 fathom curve it may be important if less water exists on it.
3. The gap at the junction of the sheet with H. 5173 and H. 5195 in approx. lat. 41° 45' long. 67° 53'. There is a possibility of much shoaler water existing here than shown.
4. The 5 fathom spot in latitude 41° 38' long. 68° 03'.
5. The gap between this sheet and H. 5195 in lat. 41° 33' long. 67° 54'.

B. Comparison with old surveys.

No comparison has been made with the old survey sheets, but a comparison with chart 1107 indicates that, with the exception of Cultivator Shoal (which has already been considered in detail in the review for H. 5225), there are no important charted shoals within the limits of this survey that have not been located on the present survey. The new survey (H. 5269) can therefore supersede all previous surveys in this area.


Sheet Inspected by - A. L. Shalowitz - Oct. 1933.


L. O. Colbert,
Chief, Field Records Section.


Chief, Field Work Section

Examined and approved:


Chief, Division of Charts.


Chief, Division of H. & T.