

6714

6714

DESCRIPTIVE REPORT

~~Topographic~~ } Sheet No. 24 (field number)  
Hydrographic } H-6714

U.S. COAST & GEODETIC SURVEY  
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JUN 16 1942

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State MASSACHUSETTS

LOCALITY

ROSE AND CROWN SHOAL AND VICINITY

19740

CHIEF OF PARTY

H. C. Warwick

DEPARTMENT OF COMMERCE  
U. S. COAST AND GEODETIC SURVEY

REG. NO.  
**H6714**

**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. 24

REGISTER NO. H-6714

State MASSACHUSETTS

General locality NANTUCKET SHOALS

Locality ROSE AND CROWN SHOAL AND VICINITY

Scale 1:20,000 Date of survey 8/25 to 9/22, 1940

Vessel GILBERT

Chief of Party H. C. Warwick

Surveyed by Ship's Officers

Protracted by E. G. Cunney

Soundings penciled by E. G. Cunney

Soundings in ~~catboats~~ feet

Plane of reference M.L.W.

Subdivision of wire dragged areas by

Inked by A. R. STIRNI

Verified by A. R. STIRNI

Instructions dated March 4, 1938

Remarks: Supplemental Instructions dated, Feb. 28, 1940,

April 30, 1940 and July 18, 1940.

H6714

DESCRIPTIVE REPORT

TO ACCOMPANY

SHEET NUMBER 24 (field number)

MASSACHUSETTS COAST

NANTUCKET SHOALS

INSTRUCTIONS:

The hydrography on this sheet was executed in accordance with the Director's Instructions for Project No. HT-207 dated March 4, 1938 and Supplemental Instructions dated February 28, 1940; and July 18, 1940.

LIMITS AND SCALE:

This area was surveyed on a scale of 1:20,000. The limit of the work on the east is Longitude  $69^{\circ} - 43'$  to Latitude  $41^{\circ} - 12.5'$ ; then north east to Latitude  $41^{\circ} - 13'$ , Longitude  $69^{\circ} - 41'$ ; then north to Latitude  $41^{\circ} - 15'$ ; then west to Longitude  $69^{\circ} - 42.5'$ ; then north to Latitude  $41^{\circ} - 19.0'$ ; then west to Longitude  $69^{\circ} - 43.0'$ ; then north to Latitude  $41^{\circ} - 25.8'$ ; then west to Longitude  $69^{\circ} - 46.2'$ ; then south to Latitude  $41^{\circ} - 21'$ ; then west to Longitude  $69^{\circ} - 47.8'$ ; then south and east to Latitude  $41^{\circ} - 19.8'$ , Longitude  $69^{\circ} - 46'$ ; then south to Latitude  $41^{\circ} - 11'$ ; then east to Longitude  $69^{\circ} - 43'$ .

JUNCTIONS:

This survey joins sheet no. 23 (GILBERT, 1940) on the south. It joins sheet number H-5227<sup>(1932)</sup> on the east, south of Latitude  $41^{\circ} - 15'$ . It joins the LYDONIA'S 1940 work on the east, north of Latitude  $41^{\circ} - 15'$ . It joins sheet number H-5249<sup>(1932)</sup> on the north. It does not join any modern survey on the western side above the western edge of the shoal in Latitudes  $41^{\circ} - 20'$  and  $41^{\circ} - 20.8'$ , Longitudes  $69^{\circ} - 46'$  and  $69^{\circ} - 47.8'$ .

<sup>H 6712 (1940)</sup> South of this shoal a junction is obtained with sheet number 21 (GILBERT, 1940) north of Latitude  $41^{\circ} - 15'$ . South of this the sheet does not join any modern survey.

<sup>(1932)</sup> Satisfactory junctions were obtained with sheets numbers H-5227 (1932) and 5249. The soundings agree reasonably well. Satisfactory junctions were also obtained with the current surveys of the LYDONIA and GILBERT except as noted below.

1. In Latitude  $41^{\circ} - 19.5'$ , Longitude  $69^{\circ} - 46'$  a holiday was inadvertently left between this sheet and sheet number 21 (GILBERT, 1940) <sup>H 6712 (1940)</sup>

2. In Latitude  $41^{\circ} - 15'$  between Longitudes  $69^{\circ} - 41'$  and  $69^{\circ} - 42'$  the agreement between the GILBERT'S and LYDONIA'S work is not very good. From inspection of the boat sheets it appears that a small shift of the sounding lines would bring the surveys into agreement. The data from the smooth sheets was not available. A detail comparison should be made after the smooth sheets are plotted.

CONTROL:

The control for this sheet consisted of buoys planted by the LYDONIA. For the location of these buoys refer to the special report on the location of buoys on this project by the LYDONIA. It was necessary to supplement this scheme in part with additional buoys. They were

Junction not satisfactory  
+ satisfactory (1932)  
See item 4 of Review

See item 4 of Review

G.P.s  
fitted with  
# 6559 (1940)

CONTROL, (Continued):

located by cuts using the LYDONIA'S buoys to obtain the position of the vessel. A cut was taken to the buoys at the time the fix was taken. A list of these fixes and cuts is attached.

SURVEY METHODS:

Standard hydrographic methods were used on this work. Three point sextant fixes were taken on the buoys for control of the sounding vessel.

All soundings on this sheet were taken with the 808 depth recorder. A list of fathogram reducers is attached to this report. The computing of these reducers is the subject of a separate report.

No attempt was made to cross the shoal areas on this sheet. The limit of the shoals were outlined by sounding around the edges with frequent changes of course as necessary to keep the vessel out of danger of grounding. (Director's amendment to Instructions HT-207, dated July 18, 1940, reference, 22 mjc, 1995 GI 4). The shape of the shoals were drawn from notes taken at the time of the various fixes.

The fixes were recorded in a series of volumes and these volumes have a P prefix on their number. The soundings were scaled from the fathograms later and recorded in another series of volumes with the prefix S.

COMPARISON WITH PREVIOUS SURVEYS:

Soundings from the old surveys number H-2051 and H-2095 as well as soundings from Chart No. 1209 were transferred to the boat sheet. It appears that these shoals are continually changing in size and shape and shifting in position. The new survey checked generally with the old surveys in the deeper water. No satisfactory checks were obtained with any of the shoal work.

SHOALS AND DANGERS TO NAVIGATION:

There are two large shoals on the sheet. One is centered in Latitude  $41^{\circ}-16'8''$ , Longitude  $69^{\circ}-43'5''$ . The other extends from Latitude  $41^{\circ}-16'5''$  in Longitude  $69^{\circ}-45'$  northward to Latitude  $41^{\circ}-20'$  and then westward to Longitude  $69^{\circ}-47'8''$ . It breaks on these shoals in moderate weather. No least depths were obtained on either shoal as it was felt that the risk involved in grounding the GILBERT perhaps with serious damage to the vessel was not warranted. (Director's amendment to Instructions HT-207, dated July 18, 1940, reference 22 mjc, 1995 GI 4)

TIDE REDUCERS:

The tide reducers were based on the Newport, R.I. tides using 0.7 of the range and a plus two hours time correction.

Off shore tides were observed with the fathometer at several places in the area surveyed this season on this project. This was the subject of a separate report. The times and heights agreed very closely with the tides at Newport after applying the factors referred to above. The hourly heights for the reduction of the soundings for the smooth sheet were furnished by the Washington Office.

STATE OF COMPLETION:

The hydrography on this sheet is not completed. The additional lines and splits needed to complete the sheet are so numerous that it would be superfluous to enumerate each and every one.

Your attention is invited to the holiday referred to in the paragraph under junctions. In addition, additional work will need to be accomplished on the west side, north of this shoal, to bring sheet 24 (GILBERT, 1940) into satisfactory junction with sheet 21 (GILBERT, 1940). South of latitude 41 - 15' and north of the northern limit of sheet 23 (GILBERT) it was planned to accomplish enough hydrography on this sheet to join proposed sheet 22 (GILBERT). No hydrography was accomplished on sheet 22 (GILBERT) during this season.

Respectfully submitted:

*J. E. Waugh, Jr.*

J. E. Waugh Jr.  
Ensign, U.S.C. & G. Survey

Approved and forwarded:

*H. C. Warwick*

H. C. Warwick,  
Chief of Party  
U.S.C. & G. Survey.

ADDENDA SHEET NO. H-6714

The following notes were made during the smooth plotting and field review of this sheet:

Additional development of the immediate area in the vicinity of Latitude  $41^{\circ}-25'$ , Longitude  $69^{\circ}-44.5'$  is recommended as well as in the vicinity of the shoal with a least depth of 27 feet at Latitude  $41^{\circ}24'$  Longitude  $69^{\circ}-44'$ .

Very little area on this sheet may be considered complete. Work on the sheet was discontinued earlier than was planned on account of a storm which moved and/or destroyed the survey buoys. The area included between parallels of Latitude  $41^{\circ}-11'$  and  $41^{\circ}-23'$  and between meridians of Longitude  $69^{\circ}-43'$  and  $69^{\circ}-46'$  is incomplete. It is anticipated that this area will have to be resurveyed in its entirety, if not the entire area of the sheet, in order to get proper depth curve junctions, as it is believed that the bottom is continually shifting.

Notes in the record book indicate a probable shoal in the vicinity of the 29 foot sounding at position 78B at Latitude  $41^{\circ}-14.8'$ , Longitude  $69^{\circ}-43.5'$ . Further development is recommended in this area.

A peculiar mark on the fathogram between positions 4B and 5B is noted (See page 11 Vol. S-1). This mark is unlike the customary stray. It is possible that some submerged object was recorded. The area should be investigated. *Probably a stray due to faulty fathometer operation*

At positions 76B, 9C, 145C and 146C the times do not check well. This may be attributed to one of several causes, but the most probable is a jump in position on account of change of fix. Under the circumstances the control is as strong as was practicable to establish, but due to strong currents and high winds encountered the buoys were continually shifting by the amount of scope and in some instances dragging to some extent. When this latter was definitely determined, attempt was made to relocate the buoys. In some instances it was necessary to reject a considerable amount of work. See notes on page 14 of volume P-3. *spaced according to time*

*H. C. Warwick*  
H. C. Warwick,  
Officer in Charge,  
Norfolk Processing Office

DEPTH RECORDER CORRECTIONS  
SHEET No. 24

Date 1940	Depth Range	Corrections (in feet) (Temperature & Salinity)
August 15, 24, 25, 28 & September (all)	0 - 150	± 0.0 <i>copy ✓ gen</i>

CUTS FOR THE LOCATION OF BUOYS

FIB

Buoy FOR relocated and renamed Buoy FIB on August 25.

at NO Ed-Fib 14°-32' ✓ Po 33°-48' ✓  
 at MIS Ed-Fib 27°-11' ✓ 26-11- Ed  
 at ED Fib-Mis 30°-19' ✓ Mis 136°-10' ✓  
 Fib-No 38°-45' ✓  
 Ed  
 Fib 84°-02' ✓

FOL

Buoy FIB moved, relocated, and renamed Buoy FOL on September 6.

at ED Fol-Mis 31°-21' ✓  
 at ZEE Yip-Fol 90°-05' ✓  
 at YIP Was-Fol 120°-37' ✓  
 see below for additional cuts

FOO

Buoy FOO planted September 7, 1941  
 Fix taken at the time the anchor was dropped.

✓ Ute 131°-48' ✓  
 Via ✓  
 Jump 42°-36' ✓

EGO

✓ Fix taken at buoy  
 All 34°-13' ✓  
 Zee  
 Yip 24°-21' ✓  
 see below for additional cuts

EGO, FOL, MES, PIT

All	34°-09' ✓	42°-47' ✓	40°-43' ✓	34°-25' ✓	34°-04' ✓
Zee					
Yip	24°-26' ✓	43°-54' ✓	44°-43' ✓	48°-05' ✓	46°-55' ✓
Zee					
Fol	46°-31' ✓	Ego Zee 125°-42' ✓	Pit Zee 114°-37' ✓	Fol Zee 123°-00' ✓	Pit Zee 98°-27' ✓
		Acc			
		Yip		Mes	Ego
		Mes 135°-41' ✓		Zee 199°-09' ✓	Zee 98°-57' ✓
All	44°-51' ✓	41°-29' ✓	25°-19' ✓	25°-10' ✓	24°-31' ✓
Zee					
Yip	38°-02' ✓	23°-29' ✓	22°-16' ✓	22°-10' ✓	21°-55' ✓
Zee					
Fol	101°-25' ✓		Pit 78°-12' ✓	Zee Fol 23°-30' ✓	Ego Zee 25°-55' ✓
			Zee		Pit
Bo		Pit	Ego	Zee	Zee
Zee	69°-19' ✓	All 127°-43' ✓	Zee 28°-00' ✓	Mes 62°-11' ✓	Zee 73°-44' ✓
	(for check)				



All 23°-18' ✓      23°-06' ✓      23°-01' ✓      22°-54' ✓  
Zee  
No 62°-56' ✓      62°-35' ✓      62°-23' ✓      62°-08' ✓

Pit 006°-134 Ego  
Zee 106°-34' ✓      Zee 56°-50' ✓      Zee Fol 01°-47' ✓      Zee Mes 42°-23' ✓  
Bo 40°-41' ✓      All  
Zee 30°-27' ✓      Ego

52-23

Bo  
P. Pit 147°-20' ✓

# H6714

## STATISTICS FOR SHEET NO.24

Date 1940	Day Letter	Statute miles sdg.lines	Number of Positions	Number of sdgs selected
Aug. 25	A	18.6	57	215
Aug. 28	B	40.8	108	464
Sept. 6	C	62.6	154	700
Sept. 7	D	56.6	193	634
Sept. 9	E	13.2	53	195
Sept.11	F	60.0	234	865
Total		251.8	799	3073

GEOGRAPHIC NAMES

Survey No. **H6714**

Name on Survey	A, On Chart No.	B, On previous survey No.	C, On U. S. Maps	D, On U. S. quadrangle Maps	E, From local information	F, On local Maps	G, P. O. Guide or Map	H, Rand McNally Atlas	K, U. S. Light List	
<u>Rose Shoal</u>										1
<u>Crown Shoal</u>										2
<u>Nantucket Shoals</u>										3
<u>Rose and Crown</u>										4
										5
										6
<u>Newport, R.I.</u>										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27

Names underlined in red approved  
by L. Heck on 7/31/42

Remarks

Decisions

1		
2		
3		409 693-698
4	This is charted name of shoal, addition of word shoal being superfluous on chart.	412 697
5		
6		
7	Location of tide staff.	
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
M 234		

Surveys Section (Chart Division)

HYDROGRAPHIC SURVEY NO. **H6714**

Records accompanying survey:

Boat sheets ~~one~~.; sounding vols. (5).; wire drag vols. ....;  
 bomb vols. ....; graphic recorder rolls (6).;  
 special reports, etc. ....  
 .....

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

Number of positions on sheet	799..	
Number of positions checked	..56..	
Number of positions revised	.....	
Number of soundings recorded	3073 + 1197 added by verifier	
Number of soundings revised (refers to depth only)	..30..	
Number of soundings erroneously spaced	..18..	
Number of signals erroneously plotted or transferred	.....	
Topographic details	Time .....	
Junctions	Time ..16..	
Verification of soundings from graphic record	Time ..28.. 13 hrs by Reviewer	
Verification by <i>A.R.S.J.P.M!</i> ....	Total time ..122..	Date Feb. 20, 1943
Review by <i>R.H. Carstens</i> .....	Time ..43..	Date 3/1/43.

# MEMORANDUM

## IMMEDIATE ATTENTION

SURVEY  
 DESCRIPTIVE REPORT  
~~PHOTOSTAT OF~~

No. H **H6714**

~~Alcock~~

received June 16, 1942  
 registered June 18, 1942  
 verified  
 reviewed  
 approved

This is forwarded in order that your attention may be directed to the matters as indicated below. Please initial in column 3 as an acknowledgement that your attention has been thus directed. The complete original records are available if desired. If you cannot give this your immediate attention, please initial, note, and forward to the next section marked, calling for the records at your convenience.

ROUTE		Initial	Attention called to
20			
22			
24			
25			
26			
30			
40			
62			
63			
82			
✓ 83	Pg 2	H38	Landpage swept up as Houston, V
88			
90			

RETURN TO

82

R. W. Knox

*RWK*

200  
HRC

TIDE NOTE FOR HYDROGRAPHIC SHEET

June 23, 1942.

~~Division of Hydrography and Topography:-~~

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

Plane of reference approved in  
2 volumes of sounding records for

HYDROGRAPHIC SHEET 6714

Locality Rose and Crown Shoal and Vicinity, Nantucket Shoals

Chief of Party: H. C. Warwick in 1940

Plane of reference is mean low water reading

1.3 ft. on tide staff at Newport, Rhode Island Time + 2 hours, Range 0.7  
36.0 ft. below B. M. 1

Height of mean high water above plane of reference is 2.4 feet.

Condition of records satisfactory except as noted below:



Chief, Division of Tides and Currents.

DIVISION OF CHARTS

SURVEYS BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. 6714  
Field No. 24

Massachusetts, Nantucket Shoals,  
Rose and Crown Shoal and Vicinity  
Surveyed August - September 1940, Scale 1:20,000  
Instructions dated March 4, 1938;  
February 28, April 30, July 18, 1940

Soundings:  
Depth Recorder 808

Control:  
Sextant Fixes on Buoy Signals

Chief of Party - H. C. Warwick  
Surveyed by - Ship's Officers  
Protracted by - E. G. Cunney  
Soundings plotted by - E. G. Cunney  
Verified and inked by - A. R. Stirni  
Reviewed by - R. H. Carstens  
Inspected by - H. R. Edmonston

1. Shoreline and Signals

No shoreline falls on this offshore sheet. The signals consist of survey buoys located by taut wire and sun azimuth measurements. Their geographic positions are filed in the library with the sounding records of H-6559 (1940).

2. Sounding Line Crossings

Satisfactory for the few crosslines run.

3. Depth Curves

The depth curves can be drawn only approximately because of the incompleteness of the survey.

4. Junctions with Contemporary Surveys

A satisfactory junction was made with H-6559 (1940) on the east and the single sounding line from H-6558 (1940) on the south. The junction with H-6713 (1940) on the south will be considered in the review of that survey.

Because of the differences in depth a butt junction was made with H-5249 (1932) on the north. In general,



the depths of the 1932 survey are 2 to 7 feet shoaler than depths of the present survey. The 38-ft. sounding (chart 250) in Lat.  $41^{\circ}25.5'$ ; Long.  $69^{\circ}44.0'$  falls in present depths of 65 to 70 feet and was not carried forward.

The junction with H-5227 (1932) on the southeast is unsatisfactory. In this area the shoals have extended eastward resulting in differences in depth of as much as 58 feet as, for example, in Lat.  $41^{\circ}11.5'$ ; Long.  $69^{\circ}42.9'$  where the present shoal of 13 feet falls in former depths of 71 feet. Hydrography within the common area should be extended eastward until a satisfactory junction can be made with this survey.

The junction with H-6712 (1940) on the west will be considered in the review of that survey. A holiday exists between H-6712 and the present survey in Lat.  $41^{\circ}19.5'$ ; Long.  $69^{\circ}46.0'$  and to the westward of Long.  $69^{\circ}46.0'$  north of Lat.  $41^{\circ}21.0'$ . There is no contemporary survey on the west; south of Lat.  $41^{\circ}15.0'$ .

#### 5. Comparison with Prior Surveys

##### a. H-223 (1847-48) 1:40,000

Agreement with this survey is only in a general way both with respect to the position of the shoals and the depths thereon. Within this area of irregular bottom later surveys are adequate to supersede the early survey.

##### b. H-2051 (1890) 1:20,000 H-2089 (1891) 1:40,000 H-2121 (1892) 1:40,000

The sparse development on the present survey of this area, where changes in depth are abrupt and shoals small in size, makes an adequate comparison with these earlier surveys impossible. In the more closely developed area in the southeast portion of the present survey some change in the bottom has taken place. Present depths on the old 22-ft. shoal in Lat.  $41^{\circ}15.3'$ ; Long.  $69^{\circ}42.7'$  are now 68 feet. The shoal area has extended 0.4 mile eastward in Lat.  $41^{\circ}13.5'$ ; Long.  $69^{\circ}41.8'$  with a resulting change in depth of 60 feet.

The change in the bottom warrants superseding by present depths the following charted soundings from H-2089 (1891) on chart 1209:

- (1) 13-ft. sounding in Lat.  $41^{\circ}12.8'$ ; Long.  $69^{\circ}43.0'$  falling in present depths of 29 feet.
- (2) 15-ft. sounding in Lat.  $41^{\circ}13.1'$ ; Long.  $69^{\circ}42.75'$  falling in present depths of 35 feet.
- (3) 13-ft. sounding in Lat.  $41^{\circ}13.3'$ ; Long.  $69^{\circ}42.55'$  falling in present depths of 39 feet.
- (4) 22-ft. sounding in Lat.  $41^{\circ}15.3'$ ; Long.  $69^{\circ}42.6'$  falling in present depths of 68 feet.
- (5) 28-ft. sounding in Lat.  $41^{\circ}15.0'$ ; Long.  $69^{\circ}42.2'$  falling in present depths of 53 to 74 feet.
- (6) 21-ft. sounding in Lat.  $41^{\circ}14.9'$ ; Long.  $69^{\circ}41.8'$  falling in present depths of 43 to 51 feet.
- (7) 55-ft. sounding in Lat.  $41^{\circ}15.6'$ ; Long.  $69^{\circ}42.3'$  falling in present depths of 74 to 80 feet.

Other soundings from the earlier surveys should be supplemented by the present survey in charting the area.

6. Comparison with Chart 250 (latest print date 11-28-42)  
1209 (latest print date 12-17-42)

a. Hydrography

The charted hydrography within the limits of the present survey originates with the previously discussed surveys which need no further consideration.

b. Aids to Navigation

The present survey position of the charted buoy in Lat.  $41^{\circ}20.1'$ ; Long.  $69^{\circ}43.75'$  is 280 meters southeast of the charted position. However, it still satisfactorily marks the feature intended. The survey position of the black can buoy No. 3 in Lat.  $41^{\circ}25.0'$ ; Long.  $69^{\circ}45.5'$  is 0.5 mile southwest of the charted position and no longer marks the best water in the channel. The buoy C"1" charted in Lat.  $41^{\circ}25.6'$ ; Long.  $69^{\circ}44.0'$  was not shown on the present survey.

7. Condition of Survey

Satisfactory, except that the soundings were not spaced sufficiently close on the smooth sheet. The verifier added approximately 1100 soundings to the smooth sheet from the fathograms.

8. Compliance with Instructions for the Project

Survey incomplete.

9. Additional Field Work Recommended

As it is stated in the Descriptive Report the hydrography within this area is incomplete. Numerous split lines are necessary and additional areas need to be covered in order to join with contemporary surveys. In accordance with the discussion in item 4 the hydrography should be extended eastward until a satisfactory junction is made with H-5227 (1932). Except for the soundings mentioned in item 5 the numerous charted shoal soundings require additional development before they can be considered disproved.

10. Superseded Surveys

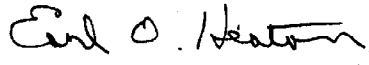
H-223 (1847-48) in part. Except for soundings mentioned in item 5 the present survey should supplement the following surveys:


H-2051 (1890)  
H-2089 (1891)  
H-2121 (1892)

Examined and approved:

  
Chief, Surveys Branch

  
Chief, Division of Charts

  
Chief, Section of Hydrography

  
Chief, Division of  
Coastal Surveys

Applied to chart 1207. June 26, 1943 J.H.S.  
Applied to chart 1209 before review.

Applied to chart 1108 May 1943 J.H.S.

Applied to chart 250 June 8, 1943 L.A.W.  
" " " 1107 July 24, 1943 J.H.S.  
" " " 1000 Aug 28 1944 HFS

1209

Mar 12, 43

Jerry

9