

8171

& Additional Work

Diag.Cht.No.1209-3

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT (HYDROGRAPHIC)

Type of Survey ... Hydrographic.....
Field No. PA-2154.....
Office No..... H-8171 & Ad.Wk.....

LOCALITY

State Massachusetts.....
General Locality . Nantucket. Sound.....
Locality ... Vicinity of Monomoy Island to.....
..... Nantucket Island.....

1954-60

CHIEF OF PARTY

F.B.Quinn, R.A.Marshall & K.A.MacDonald.....

LIBRARY & ARCHIVES

DATE Oct.24,1958.....

8171

& Additional Work

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.

REGISTER No. H-8171

Field No. Par-2154

State MASSACHUSETTS

General locality NANTUCKET SOUND

Locality VICINITY OF MONOMOY ISLAND

Scale 1:20,000

Date of survey 20 Aug. to 6 Oct. 1954

Instructions dated 24 May 1954

Vessel SHIP PARKER

Chief of party F.B. QUINN

Surveyed by F.B. QUINN

Soundings taken by ~~XXXXXXXX~~ graphic recorder, ~~XXXXXXXX~~

Fathograms scaled by SHIP PERSONNEL

Fathograms checked by NORFOLK DISTRICT OFFICE

Protracted by A.G. ATWILL

Soundings penciled by A.G. ATWILL

Soundings in ~~XXXXX~~ feet at MLW ~~XXXX~~ and are true depths

REMARKS: See report covering the 1956 season work.

*see also title sheets
for reports of 1956 and
AdW 51960*

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SURVEY H -

(Field Nos. PAR - 2154 and PAR - 2354)

Ship PARKER

F. B. Quinn, Commanding

Scale 1:20,000

A. PROJECT:

CS-369, vicinity of Nantucket Sound, Massachusetts, 22-rect, S-2-PARKER, dated 24 May 1954. A basic resurvey, shoran-controlled, in the eastern part and eastern entrance of Nantucket Sound, near Monomoy Island and Handkerchief Shoal. ✓

B. SURVEY LIMITS AND DATES:

This survey lies in the Nantucket Sound entrance channel passing south of Monomoy Island, and in Nantucket Sound around the south and west edges of Handkerchief Shoal, and westward from Handkerchief Shoal to Halfmoon Shoal at the eastern end of Cross Rip Channel. Single lines, widely spaced, also were run enroute to and from Chatham Roads and Hyannis Harbor. Survey dates extended from 13 August through 6 October 1954. ✓

Because of delays in completion of Project CS-371 and the late start on this project, only the channel and the fringe outline of Handkerchief Shoal were surveyed. Long runs were made from and to Woods Hole where the launch party had to be dropped in the morning and picked up at night. When Project CS-371 was completed late in September, the launch was fitted with shoran that had been readied earlier, but wind and heavy choppy seas prevented its use. An effort was made with the PARKER to definitely outline Handkerchief Shoal and the shoal south of Stone Horse Lightship, because of the shoaling tendencies shown by the survey. This called for special alertness and much reduced speed, and some success was experienced. ✓

C. VESSELS AND EQUIPMENT:

The Ship PARKER was used entirely, and no work was accomplished with launch 168. ✓

The 808-type Depth Recorder was used, and two Shoran Stations furnished control, one located at Chatham Lighthouse and the other at Point Gammon. ✓

D. TIDE AND CURRENT STATIONS:

For the Boat Sheet plotting, Boston, Massachusetts predicted tides were corrected and used. No gage was established at Monomoy Island because the station location at Powder Hole had filled in too shoal. A USC&GS portable-automatic type gage in operation for Woods Hole Oceanographic Institution at HarwichPort was checked and leveled. These tides are being used, uncorrected, for tide reducers.

No current stations were called for.

E. SMOOTH SHEET:

The smooth sheets will be plotted by the Norfolk Processing Office.

Shoreline will be obtained from the Photogrammetric Project PH-116, done at Monomoy Island in June 1954.

F. CONTROL STATIONS:

Shoran Station CHAT was located on Chatham Lighthouse, its position given as Chatham South Lighthouse, 1880, with the G. P. on page 135 of Accession No. of Computation G 3656.

Shoran Station GAMB, a 1954 new station, was located by computing an inverse azimuth from Bishop and Clerks Lighthouse 1887, 1943, (page 144 of Accession G 3692) to Point Gammon Lighthouse, 1934, (page 145 of Accession G 3692), and then projecting this azimuth northwestward from Point Gammon a Measured Distance. *A 100-ft tower and trailer station were used.*

Control for the aluminum Shoran Test Plate was obtained from Cape Cod Triangulation G. P's, Topo Station Card T 5738 and Chart Letter No. 257, Ship HILGARD, 22 July 1949. These G. P's accompany the data for the survey.

G. SHORELINE AND TOPOGRAPHY:

Shoreline on Boat Sheet PAR - 2154 was taken from charts, but for the smooth sheet it will be available from 1954 Photogrammetric Project PH-116 by L. F. Woodcock, Chief of Party.

H. SOUNDINGS:

808-type Depth Recorder 117-S was used throughout, entirely in the foot scale. Bar Checks and Phase Comparisons were taken and meaned, as given in a separate Velocity Corrections report.

I. CONTROL OF HYDROGRAPHY:

The two Shoran Stations given in "F" of this report, CHAT and GAMB, were used exclusively for control of the hydrographic positions. ✓

J. ADEQUACY OF THE SURVEY:

The survey is incomplete. The areas covered are adequately checked, except along the south side of the channel at Pollock Rip where time did not permit additional splitting of lines in the extremely irregular bottom. ✓

K. CROSSLINES:

Good crosslines were obtained throughout. ✓

L. COMPARISON WITH PRIOR SURVEYS:

Handkerchief Shoal has definitely spread out its limits westerly, southwesterly and southeasterly. There are definitely more shoal spots on Pollock Rip, Stone Horse Shoal, and southeast of Butzer Hole off Monomoy Point. From Handkerchief Shoal to Halfmoon Shoal, depths remained in agreement. Reconnaissance lines toward Point Gammon and Chatham Roads indicated little change from previous surveys in the open area. ✓

M. COMPARISON WITH CHART:

Same remarks as under "L". (See # 7 Review)

N. DANGERS AND SHOALS:

The Boat Sheets were examined in Washington at the close of the season for such dangers and changes. ✓

O. COAST PILOT INFORMATION:

No changes were noted. ✓

P. AIDS TO NAVIGATION:

No new fixed aids were located. Buoy positions in the Handkerchief Shoal area were to be changed by the U. S. Coast Guard in accordance with recommendations. The new positions will be furnished by the Coast Guard. ✓

Q. LANDMARKS FOR CHARTS:

There are no new landmarks for charts in the general area of the survey. ✓

~~There are no special comments, other than the shoaling described in "L".~~

R - X:

There are no special comments, other than the shoaling described in "L".

Y. SHORAN CORRECTIONS:

Throughout all survey days "zero check" readings were taken and recorded in the sounding volumes, but no "zero set" values entered.

On 4 days in the entire survey period, shoran comparisons were made with several visual positions taken simultaneously and plotted on the aluminum test plate in the Chatham Roads area. No changes of "Delay Settings" were made at the shore stations after being adjusted to least error at the beginning of the season. The mean shoran errors found in the various visual comparisons of the season were in good agreement, so a mean value for each station was determined for the season.

The "zero check" readings taken at the times of visual comparisons were meaned for the season, and the means were then recorded as "zero set" values for all zero checks. The resulting "Zero Check Corrections" were in close agreement for all survey days and gave a season correction of 0.000.

In view of the above, one constant correction value for each shoran station has been used throughout the season, (+) 0.013 for CHAT and (-) 0.016 for GAMM.

See tabulations and computations appended to this report.

Z. TABULATION OF APPLICABLE DATA:

Applicable Velocity Corrections, Tide Note, and Shoran Corrections are appended to this report.

The velocity corrections are determined in a separate report submitted with the survey data.

The determination of Tide Corrections is submitted in a separate envelope.

Shoran Correction determinations are given in "Y" of this report.

Respectfully submitted



F. B. Quinn
Commander, USC&GS

LIST OF STATIONS

USED FOR SHORAN CALIBRATION ON TEST SHEET

PROJECT CS-369

1954 FIELD SEASON

NAME USED

ORIGIN OF STATION

| | |
|-------|--|
| CHAT | CHATHAM SOUTH LIGHTHOUSE, 1880. |
| LIFE | MONOMOY POINT LIFE SAVING STATION CUPOLA, 1902. |
| MOY | MONOMOY POINT LIGHTHOUSE, 1875. |
| RADIO | RADIO TOWER located by sextant cuts on Project CP-4, 1949. |
| STAGE | STAGE HARBOR LIGHTHOUSE, 1880. |
| TANK | T-5738. |
| WICH | HARWICHPORT CONGREGATIONAL CHURCH SPIRE, 1887. |
| WIND | CHATHAM OLD WINDMILL, 1920. |

STATISTICS FOR SHORAN CONTROLLED HYDROGRAPHIC SURVEY

See N.P.O.
Statistics

PROJECT CS-369

Field No. PAR-2154

FATHOMETER 117-S

| DATE | DAY LETTER | VOL. NO. | STAT. MI. SDGS. | DIST. TO & FROM (NAUT). | TOTAL DAYS RUN (NAUT.) | NO. NO. POS. | AREA .SQ. STAT. MI. |
|---------------|---------------|-------------|-----------------------|-------------------------------|------------------------------|--------------------|------------------------|
| 8/20 | A | 1 | 25.1 | 0.0 | 23.0 | 62 | |
| 8/23 | B | 1 | 23.6 | 0.0 | 20.6 | 63 | |
| 8/26 | C | 1 | 13.9 | 0.0 | 14.2 | 37 | |
| 8/27 | D | 2 | 36.4 | 0.0 | 32.8 | 95 | |
| 8/30 | E | 2 | 41.4 | 0.0 | 39.7 | 103 | |
| 9/30 | F | 2 | 17.1 | 30.0 | 48.3 | 52 | |
| 9/30 | F | 3 | 21.7 | 0.0 | 20.9 | 60 | |
| 10/6 | G | 3 | 35.0 | 30.0 | 66.6 | 105 | |
| Totals | | 3 | 214.2 | 60.0 | 266.1 | 577 | 18.7 |

VELOCITY CORRECTIONS

DETERMINED FROM BAR CHECKS AND TO BE USED THROUGHOUT

SHEETS PAR-2154 and PAR-2354

(FROM SEPARATE VELOCITY CORRECTION REPORT)

| Correction (ft) | <u>A - Range</u> | | Correction (ft) | <u>B - Range</u> | |
|--------------------|---------------------|-------------------|--------------------|---------------------|-------------------|
| | <u>From</u> (ft) | <u>To</u> (ft) | | <u>From</u> (ft) | <u>To</u> (ft) |
| (+) 0.2 | 5.0 | 15.6 | (-) 0.2 | 35.0 | 38.5 |
| (+) 0.4 | 15.7 | 23.5 | 0.0 | 38.6 | 46.3 |
| (+) 0.6 | 23.66 | 31.6 | (+) 0.2 | 46.4 | 54.5 |
| (+) 0.8 | 31.7 | 40.0 | (+) 0.4 | 54.6 | 66.5 |
| (+) 1.0 | 40.1 | 48.3 | (+) 0.5 | 66.6 | 90.0 |
| (+) 1.2 | 48.4 | 55.0 | | | |

C and D Ranges

NO CORRECTIONS

PHASE CORRECTIONS

From bar check tabulations

A to B (+) 0.96

A to C (+) 1.56

SHORAN CORRECTIONS

PROJECT CS-369

SHIP PARKER AUGUST - OCTOBER 1954

SHEETS PAR - 2154 and 2354

| Date 1954 | Sheet PAR- | Day Letter | Comparisons with Visual | | | | * Zero Sets | Daily Corrections | |
|----------------------------|---------------|---------------|-------------------------|-----------------------------|---------------------|----------------|----------------|----------------------|--|
| | | | No. of Comparisons | Summation of Comparisons | Mean Corrections | Zero Checks | | Total Corrections | |
| 8/13 | 2354 | A | (1)R | (-)(0.001)R | (-)(0.001)R | | (+)0.002 | (+)0.013 | |
| 8/16 | 2354 | B | | | | | (-)0.001 | | |
| 8/17 | 2354 | C | 3 | (+)0.045 | (+)0.018 | 99.826 | (+)0.001 | | |
| 8/18 | 2354 | D | | | | | (+)0.002 | | |
| 8/20 | 2354 | E | | | | | (+)0.002 | | |
| 8/23 | 2354 | F | | | | | (+)0.001 | | |
| 8/24 | 2154 | B | | | | | 0.000 | | |
| 8/24 | 2354 | G | 4 | (+)0.031 | (+)0.008 | 99.824 | 0.000 | | |
| 8/25 | 2354 | H | | | | | 0.000 | | |
| 8/26 | 2354 | J | | | | | 0.000 | | |
| 8/27 | 2154 | C | | | | | 0.000 | | |
| 8/30 | 2354 | D | | | | | 0.000 | | |
| 9/24 | 2154 | L | | | | | (+)0.002 | | |
| 9/24 | 2354 | E | 3 | (+)0.050 | (+)0.017 | 99.824 | (+)0.002 | | |
| 9/30 | 2354 | M | | | | | (+)0.001 | | |
| 10/4 | 2154 | N | | | | | (-)0.001 | | |
| 10/4 | 2354 | F | | | | | (-)0.002 | | |
| 10/6 | 2354 | P | | | | | (+)0.005 | | |
| | 2154 | Q | | | | | 0.000 | | |
| | 2154 | G | | | | | | (+)0.013 | |
| SUMMATION NO. OF VALUES | | | 10 | (+)0.126 | (+)0.013 | 299.474 | (+)0.005 | | |
| MEAN | | | | | | 99.825 | 0.000 | | |

* "Zero Checks" read at times of Visual Comparisons were measured, and this value was used as the "Zero Set" in all "Zero Checks". Then all "Zero Check Corrections" were measured to be added to the "Visual Comparison Correction" to give one constant correction for each shoran station for the entire season.

Use (+)0.013 Entire Season

Compiled by: CMT
Checked by: FBQ

SHORAN CORRECTIONS

PROJECT GS-369 SHIP PARKER AUGUST - OCTOBER 1954 STATION GAMM SHEETS PAR - 2154 and 2354

| Date 1954 | Sheet PAR- | Day Letter | Comparisons with Visual | | | * Zero Sets | Daily Corrections | |
|------------------------------|------------|------------|-------------------------|--------------------------|-----------------|------------------------|----------------------------|-------------------|
| | | | No. of Comparisons | Summation of Comparisons | Mean Correction | | Zero Checks | Total Corrections |
| 8/13 | 2354 | A | 1 | (-)0.019 | (-)0.019 | 0.000 | (-)0.016 | |
| 8/16 | 2354 | B | | | | (-)0.002 | | |
| 8/17 | 2354 | C | | | | (+)0.001 | | |
| 8/18 | 2354 | D | 3 | (-)0.050 | (-)0.017 | (+)0.001 | | |
| 8/20 | 2354 | E | | | | (+)0.001 | | |
| 8/23 | 2354 | F | | | | (-)0.001 | | |
| 8/24 | 2154 | G | | | | 0.000 | | |
| 8/25 | 2354 | H | 5 | (-)0.052 | (-)0.010 | (-)0.001 | | |
| 8/26 | 2354 | J | | | | 0.000 | | |
| 8/27 | 2154 | C | | | | (-)0.001 | | |
| 8/30 | 2354 | K | | | | (-)0.001 | | |
| 9/24 | 2154 | L | | | | 0.000 | | |
| 9/24 | 2354 | M | 3 | (-)0.067 | (-)0.022 | 0.000 | | |
| 9/30 | 2354 | N | | | | 0.000 | | |
| 10/4 | 2154 | F | | | | (+)0.001 | | |
| 10/4 | 2354 | P | | | | (-)0.002 | | |
| 10/6 | 2154 | Q | | | | (-)0.002 | | |
| 10/6 | 2154 | G | | | | (-)0.016 | | |
| SUMMATION NO. OF VALUES MEAN | | | 12 | (-)0.188 | (-)0.016 | 299,470 3 99,823 | (-)0.005 14 (-)0.000 | |

Use (-)0.016 Entire Season

* "Zero Checks" read at times of Visual Comparisons were meant, and this value was used as the "Zero Set" in all "Zero Checks". Then all "Zero Check Corrections" were meant to be added to the "Visual Comparison Correction" to give one constant correction for each shoran station for the entire season.

Compiled by: CWT
Checked by: FBQ

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.

REGISTER No. H-8171

Field No. Par-2154

State MASSACHUSETTS

General locality NANTUCKET SOUND

Locality VICINITY OF MONOMOY ISLAND

Scale 1:20,000 Date of survey 1 May to 4 Sept. 1956

Instructions dated 14 Jan. 1955; 27 Dec. 1955; 27 Feb. 1955

Vessel SHIP GILBERT

Chief of party R.A. MARSHALL

Surveyed by R.A. MARSHALL, N.E. TAYLOR & M.B. MILLER

Soundings taken by ~~XXXXXX~~, graphic recorder, ~~XXXXXX~~

Fathograms scaled by SHIP PERSONNEL

Fathograms checked by SHIP PERSONNEL & NORFOLK DISTRICT OFFICE

Protracted by A.G. ATWILL

Soundings penciled by A.G. ATWILL

Soundings in ~~XXXX~~ feet at MLW ~~XXXX~~ and are true depths

REMARKS: See 1954 season's descriptive report.

Field work during the 1955 season was accomplished by;

R.A. MARSHALL, E.W. RICHARDS & O.L. DOSTER

D E S C R I P T I V E R E P O R T

to accompany

HYDROGRAPHIC SURVEY NO. H - 8171

(Field No. PAR-2154)

Vicinity of

EAST ENTRANCE TO NANTUCKET SOUND

USC&GS Ship G I L B E R T ,

Cdr. Robert A. Marshall, Commanding.

Scale : 1:20,000

Surveyed by: (1956 Field Season)

R. A. Marshall, Cdr, C&GS,

N. E. Taylor, LtCdr, C&GS,

M. B. Miller, Ensign, C&GS.

A. PROJECT

The work accomplished on sheet H-8171 (PAR 2154) was under project 13690 in accordance with instructions dated 24 May 1954, ref. 22-rct-S-2-PARKER, issued to C.O., PARKER; supplemental instructions dated 14 January 1955, ref. 22-SRO-S-2-GI, modified 27 February 1955, ref. 22/MEK S-2-GI; and supplemental instructions dated 27 December 1955, ref. 22/MEK S-2-GI. This work covered a three year period, 1954, 1955 and 1956. The work accomplished during the 1954 field season is described in a separate Descriptive Report dated 1954, prepared by Cdr. F. B. Quinn, C. O., Ship PARKER. *Ad. WK1960*

The major portion of this survey was accomplished during the 1955 field season. No records or information concerning this work is available on this vessel at this time, and it is assumed that this information is presently in the Norfolk Processing Office.

This report covers that portion of the survey accomplished during the 1956 field season, which consisted primarily of launch hydrography.

B. SURVEY LIMITS AND DATES

(H-8171)

The survey covered by sheet PAR-2154 encompassed an area bounded by Lat. 41° 35', Lat. 41° 23'; Long. 69° 52', Long. 70° 05'.

This survey junctions with contemporary surveys H-8172 on the West, H-8349 on the North, and H-8350 and sheet GI 2.5/156 (no registry number) on the East. *H-8450 (1957-58) South - H-8449 (1958) South West H-8409 (1956-57)* *(1954-56)* *PS Review*

H-6534 (Northwest) (1939)
H-6473 (Northwest-1939) Butt junction
The portion of this survey which was accomplished during 1956 was the area around Monomoy Island and two offshore shoal areas completed on sheet PAR-2154a, and the area around Great Point on Nantucket Island completed on sheet ~~PAR~~ 2154. *(H-8171)*

The progress of field work was unusually delayed due to a combination of bad weather, innumerable equipment failures, and great distance from base of operations requiring excessive to & from time.

C. VESSELS AND EQUIPMENT

Hydrography on this sheet during the 1956 field season was accomplished primarily with Launch CS-180, using EDO fathometers 204 and 213, and Shoran equipment sets 653 and 1093.

The Ship GILBERT accomplished hydrography on this sheet for ³ ~~two~~ days only during the 1956 field season, using 808 fathometer 159 and Shoran set No. 333. These ~~two~~ two days were FA day and GA day, GA day being bottom samples only. *FA day - location of Aids*

During this period the Ship GILBERT was based out of Woods Hole, Mass. Launch CS-180 was operated from the Ship GILBERT, both while the ship was at anchor on the working grounds and also while the ship was alongside at Woods Hole.

Operating the launch from the ship while anchored on the working grounds proved impractical, due to the necessity of refueling the launch nightly at gasoline pumps.

D. TIDE AND CURRENT STATIONS

(P4d Review & Norfolk Proc. Office addendum)

Tide information for the 1956 work was obtained from the Boston tide station, with a 0.8 and 0.5 range ratio and a 1/2 hour time differential, and from the Wychmere tide gage. For additional information and break points see TIDE NOTE attached to this report. ✓

No current stations were observed by the Hydrographic party during the 1956 field season. ✓

Two current stations were observed during the 1955 season in East Approach to Nantucket Sound; Great Round Shoal Channel. These two stations were observed from 26 May 1955 to 28 June 1955.

#1 41° 26.3' 69° 58.5' ✓ #2 42° 27.9' 69° 59.0' ✓ from Tides 4-7-60 JCH ✓

E. SMOOTH SHEET

Smooth Sheet is to be constructed and plotted by the Norfolk Processing Office. ✓

F. CONTROL STATIONS

Control Stations for this survey were Shoran stations CHAT and GAMB, located at the Chatham South Light House, Chatham, Mass., and at Pt. Gammon, Mass., respectively. These stations are as described in the Descriptive Report covering the 1954 field season's work on sheet PAR-2154 and 2357 by the Ship PARKER. ✓

The exact location of these stations are:

CHAT - Lat. 41° 40' 16.672"; Long. 69° 57' 01.571"
GAMB - Lat. 41° 36' 37.85"; Long. 70° 16' 01.89 "

The control for the aluminum test plate used for calibration of the Shoran is as described in the 1954 Descriptive Report. ✓

G. SHORELINE AND TOPOGRAPHY

(H-8171)

Shoreline on Boat Sheet PAR-2154 was taken from charts, but for the smooth sheet the shoreline will be available from 1954 Photogrammetric Project PH-116 by L. F. Woodcock, Chief of Party. ✓

P2 Review

It is noted that the shore line as shown on the boat sheet and chart does not conform to the actual shoreline which was delineated by the Hydrographic party. ✓

H. SOUNDINGS

All soundings were recorded in feet on an 808 type depth recorder, ser. 159SPX, and EDO depth finders ser. 204 and 213. ✓

No unusual methods, equipment or corrections were applied. The corrections applied are attached, as a separate part of this report. ✓

I. CONTROL OF HYDROGRAPHY

The two Shoran stations given in "F" of this report, CHAT and GAMM, were used exclusively for the control of the hydrographic positions. ✓

J. ADEQUACY OF THE SURVEY

It is considered that this survey is complete in all respects to 41° 23' Lat. on the South, and is adequate to supersede all prior surveys of this area for charting. *PG 27₁₆ of Review*

Adequate junctions exist with contemporary surveys and no holidays or excessive differences exist. Depth curves can be adequately drawn at the junctions. ✓

It is not known at this time whether the area covered by Project No. 13690 and south of Lat. 41°25' will be surveyed on sheet PAR-2154 or whether another sheet will be used. *plotted on S/S*

K. CROSSLINES

Crosslines total about 10% for this survey and crossings are adequate. ✓

L. & M. COMPARISON WITH PRIOR SURVEYS AND CHART

See chart comparison overlay

The area covered by the 1956 field work was primarily all shoal area which is continually shifting. The differences between the boat sheet and the chart indicate that extensive revision of this chart is necessary. ✓

N. DANGERS & SHOALS - Entire launch hydro area subject to continually shifting shoals. ✓

O. COAST PILOT

No new information was noted. Information in the Coast Pilot, Atlantic Coast, Section B, through 1 January 1954 is applicable, except for the comments in section "P", Aids to Navigation. ✓

P. AIDS TO NAVIGATION

Numerous aids to navigation are maintained by the Coast Guard in the area covered by this survey. ✓

Buoy locations for the buoys in Pollock Rip Channel, Handkerchief Shoal Channel, and Great Round Shoal Channel were established by the Hydrographic Party with Shoran control. These locations were forwarded to the Director, C&GS, and to the 1st Coast Guard District. ✓

Stonehorse Lightship was removed from station during August and replaced with a lighted red buoy with a radar reflector and a separate gong buoy. *(1956 L.L. SHOWS THIS AS BEING ON STATION) - Plotted on S.S.* ✓

When the party departed the working grounds, it was not known whether or not Stonehorse Lightship would be restored to station. ✓

Q. & R. LANDMARKS FOR CHARTS AND GEOGRAPHIC NAMES

Landmarks and geographic names were submitted by the photogrammetric party and no investigation was made by the hydrographic party. ✓

S. to Y. No remarks under these headings.

Z. Tabulation of Applicable Data

Statistics, tide note, fathometer frequency corrections, velocity correction abstract, and Shoran corrections, are included in this report. ✓

Respectfully submitted,

Marvin B. Miller

Marvin B. Miller,
Ensign, C&GS.

APPROVED AND FORWARDED:

Charles A. Schoene

Charles A. Schoene,
Commander, C&GS,
Commanding Ship GILBERT.

TIDE NOTE - SHEET H - 8171

See Tide Note in addendum ✓

Information for tide reducers for boat sheet PAR-2154 for the work accomplished in 1956 was furnished by the Washington Office. The tide zones were in general divided into three areas. The tides for the area west of a line between Monomoy Point and Great Point on Nantucket were based on the tide gage established at Wychmere Harbor. This portion of the boat sheet south to Latitude $41^{\circ} 23' 35''$ used the tide at Wychmere with no range of tide correction. For the portion south of Lat. $41^{\circ} 23' 35''$ a tide range of .8 of Wychmere ~~is to be used.~~ *W95*

For the area of the sheet east of this line between Monomoy Point and Great Point, tides based on Boston were used. The Boston tide had a range correction of 0.8 and a time difference of $+\frac{1}{2}$ hour for the portion north of Lat. $41^{\circ} 30' 27''$. For the area south of this latitude to Lat. $41^{\circ} 23'$ a range ratio of 0.5 and $+\frac{1}{2}$ hour on Boston were used.

In view of the small amount of work ³around Great Point, tide reducers based on 0.5 and $+\frac{1}{2}$ hour on Boston were used. *See NPO Addendum.*

It should be noted that tidal differences of 3 to 5 feet exist at the breakpoints as established by the Washington Office. It is expected that these differences will be resolved in the smooth plotting. *See NPO Add. & P4d Review*

Information pertaining to tide reducers used to process the records completed during the 1955 field season were not available on this vessel. It is assumed that this information accompanied the records when shipped to the Norfolk Processing Office. *See T4g Review*

✓

FATHOMETER FREQUENCY CORRECTIONS

The 808 fathometer used in this survey was calibrated for a velocity of sound of 820 fms/sec. There was no speed correction to be applied to soundings from this unit.

See following page - Corrected by bar checks

corrected by bar checks.
The EDO fathometers used in this survey were calibrated for a speed of 800 fms/sec., at a motor frequency of 60 cps. Whenever the frequency varies by 1/2 cps or more, a correction to the soundings must be entered in order to provide a true depth.

The following is a list of corrections used, in feet:

| <u>Frequency Variation</u> | <u>Depth Range</u> | <u>Correc- tion</u> |
|----------------------------|--------------------|-------------------------|
| + 0.5 cps | 0 - 13 | ± 0.0 |
| | 13 - 38 | 0.2 |
| | 38 - 63 | 0.4 |
| | 63 - 88 | 0.6 |
| + 1.0 cps | 0 - 6 | ± 0.0 |
| | 6 - 18 | 0.2 |
| | 18 - 30 | 0.4 |
| | 30 - 41.5 | 0.6 |
| | 41.5 - 53 | 0.8 |
| | 53 - 65 | 1.0 |
| | 65 - 77 | 1.2 |
| 77 - 89 | 1.4 | |
| + 1.5 cps | 0 - 4 | ± 0.0 |
| | 4 - 12 | 0.2 |
| | 12 - 20 | 0.4 |
| | 20 - 27.5 | 0.6 |
| | 27.5 - 35.5 | 0.8 |
| | 35.5 - 43.5 | 1.0 |
| | 43.5 - 52 | 1.2 |
| | 52 - 60 | 1.4 |
| | 60 - 68 | 1.6 |
| | 68 - 75.5 | 1.8 |
| 75.5 - 83.5 | 2.0 | |
| 83.5 - 91.5 | 2.2 | |
| 91.5 - 99.5 | 2.4 | |
| + 2.0 cps | 0 - 3 | ± 0.0 |
| | 3 - 9 | 0.2 |
| | 9 - 15 | 0.4 |
| | 15 - 21 | 0.6 |
| | 21 - 27 | 0.8 |
| | 27 - 33.5 | 1.0 |
| | 33.5 - 39.5 | 1.2 |
| | 39.5 - 45.5 | 1.4 |
| | 45.5 - 51.5 | 1.6 |
| | 51.5 - 57.5 | 1.8 |
| | 57.5 - 63.5 | 2.0 |
| | 63.5 - 70 | 2.2 |
| | 70 - 76 | 2.4 |
| 76 - 82 | 2.6 | |

VELOCITY CORRECTIONS

The velocity and instrument corrections were obtained by bar checks. Temperature and salinity observations, of doubtful value, were obtained on 18 April 1956 and were not used in computing the corrections. The following, are the corrections to be used. *These corrections were not entered into the sounding record books, in accordance with verbal instructions of the Norfolk Processing Office. Corrections are in feet.

SHEET 2154 1 May 1956
4 July 1956
2 May 1956
Fath. 808, ser. 159
Ship Gilbert

A Scale

| | |
|---------|-------|
| 0 - 20 | 0.0 |
| 20 - 25 | - 0.2 |
| 25 - 30 | - 0.4 |
| 30 - 34 | - 0.6 |
| 34 - 38 | - 0.8 |
| 38 - 42 | - 1.0 |
| 42 - 45 | - 1.2 |
| 45 - 48 | - 1.4 |
| 48 - 50 | - 1.6 |

B Scale

| | |
|---------|-------|
| 40 - 47 | - 0.4 |
| 47 - 50 | - 0.6 |

Launch #180

3
~~18~~ July - 31 July
Fath EDO ~~215~~ → 213

| | |
|--------|-----|
| 0 - 70 | 0.0 |
|--------|-----|

Pencil corrections
by -
Norfolk District office -

Launch 180
3 August - 16 August
Fathometer EDO 204

| | |
|-------------|-------|
| 0 - 14 | ± 0.0 |
| 14 - 19 | + 0.2 |
| 19.1 - 22 | + 0.4 |
| 22.1 - 25.5 | + 0.6 |
| 25.6 - 29 | + 0.8 |
| 29.1 - 33 | + 1.0 |
| 33.1 - 37 | + 1.2 |
| 37.1 - 40 | + 1.4 |
| 40.1 - 43 | + 1.6 |
| 43.1 - 46 | + 1.8 |
| 46.1 - 48 | + 2.0 |
| 48.1 - 49.5 | + 2.2 |
| 49.6 - 52 | + 2.4 |

Launch 186
23 August - 4 September
Fathometer EDO 213

| | |
|-------------|-------|
| 0 - 2.5 | 0.0 |
| 2.6 - 14 | - 0.2 |
| 14.1 - 21 | 0.0 |
| 21.1 - 24 | + 0.2 |
| 24.1 - 27 | + 0.4 |
| 27.1 - 29.5 | + 0.6 |
| 29.6 - 33 | + 0.8 |
| 33.1 - 36 | + 1.0 |
| 36.1 - 39 | + 1.2 |
| 39.1 - 41.5 | + 1.4 |
| 41.6 - 44.5 | + 1.6 |
| 44.6 - 47 | + 1.8 |
| 47.1 - 50 | + 2.0 |
| 50.1 - 53 | + 2.2 |
| 53.1 - 57 | + 2.4 |
| 57.1 - 61 | + 2.6 |
| 61.1 - 67 | + 2.8 |
| 67.1 - 70 | + 3.0 |

*
The N.P.O. offered
to enter these
corrections in order
to give Field party
more time to
investigate tide
discrepancies -
Little was accom-
plished along
this line, however
H.L.P.

53-58 +2.6
59-65 +2.8
66-70 +3.0

SHORAN CORRECTIONS

Corrections to the Shoran readings were obtained from a comparison of the zero checks taken daily during the survey with the zero check settings when the Shoran set was calibrated by visual fixes. These differences were either added or subtracted from the calibration correction as required.

| <u>DATE</u> | <u>DAY</u> | | <u>C H A T</u> | <u>G A M M</u> |
|---|-----------------|------|------------------|----------------|
| <u>Final Corrections - Sheet 2154:</u> | | | | |
| 1956 | | | | |
| May 1 | (Ship GILBERT) | --HA | -0.002 | -0.002 |
| 2 | | FA | +0.007 | +0.002 |
| July 7 | | GA | 0.000 | -0.001 |
| 13 | (LAUNCH CS-180) | a | -0.044 | -0.011 |
| 17 | | b | -0.005 | +0.010 |
| 20 | | c | +0.007 | +0.028 |
| 25 | | d | 1130 to 1200 Hrs | +0.010 |
| | | | 1200 " 1230 " | +0.008 |
| | | | 1230 " 1300 " | +0.006 |
| | | | 1300 " 1330 " | +0.004 |
| | | | 1330 " 1400 " | +0.002 |
| | | | 1400 " 1430 " | 0.000 |
| | | | 1430 " 1500 " | -0.002 |
| | | | 1500 " 1530 " | -0.004 |
| | | | 1530 " 1600 " | -0.006 |
| 26 | | e | | -0.017 |
| Aug. 29 | | f | +0.024 | -0.003 |
| 30 | | g | +0.019 | -0.002 |
| 31 | | h | +0.017 | -0.001 |
| Sep. 4 | | j | +0.021 | -0.002 |
| <u>Final Corrections - Sheet 2154a:</u> | | | | |
| July 3 | | l | -0.022 | -0.001 |
| 4 | | m | -0.030 | -0.005 |
| 11 | | n | -0.038 | -0.003 |
| 12 | | p | -0.047 | -0.004 |
| 19 | | q | -0.002 | +0.019 |
| 26 | | r | -0.015 | +0.029 |
| 27 | | s | -0.022 | +0.024 |
| 30 | | t | +0.009 | -0.006 |
| 31 | | u | +0.017 | -0.008 |
| Aug. 3 | | v | +0.025 | -0.006 |
| 9 | | w | +0.025 | -0.012 |
| 15 | | x | +0.031 | -0.011 |
| 16 | | y | +0.028 | -0.010 |
| 23 | | z | +0.032 | -0.011 |
| 27 | | aa | +0.031 | -0.005 |
| 29 | | ba | +0.025 | -0.006 |
| Sep. 4 | | ca | +0.021 | -0.002 |

The Shoran corrections for the 1955 field season were not available on this vessel. It is assumed that they accompanied the record volumes when delivered to the processing office.

NORFOLK PROCESSING OFFICE
STATISTICS
H-8171

| <u>DAY</u> | <u>VOL. NO.</u> | <u>NO. POS.</u> | <u>H.L.</u> | <u>STAT. MI.</u> | <u>DATE</u> | <u>VESSEL</u> |
|-----------------|-----------------|-----------------|-------------|------------------|-------------|---------------|
| 1954 A (red) | 1 | 62 | - | 25.1 | 8/20/54 | PARKER |
| B " | 1 | 63 | - | 23.6 | 8/23/54 | |
| C " | 1 | 37 | - | 13.9 | 8/26/54 | |
| D " | 2 | 95 | - | 36.4 | 8/27/54 | |
| E " | 2 | 103 | - | 41.4 | 8/30/54 | |
| F " | 2&3 | 112 | - | 38.8 | 9/30/54 | |
| G " | 3 | 105 | - | 35.0 | 10/ 6/54 | PARKER |
| A (blue) | 4 | 58 | - | 21.9 | 5/10/55 | GILBERT |
| B " | 4 | 107 | - | 47.5 | 5/11/55 | |
| C " | 5&6 | 171 | - | 70.8 | 5/12/55 | |
| D " | 6 | 118 | - | 48.4 | 5/13/55 | |
| E " | 6&7 | 39 | - | 18.0 | 5/17/55 | |
| F " | 7 | 121 | - | 51.9 | 5/18/55 | |
| G " | 7 | 12 | - | 5.8 | 6/ 1/55 | |
| H " | 8 | 91 | - | 39.1 | 6/ 2/55 | |
| J " | 8 | 24 | - | 10.0 | 6/ 7/55 | |
| K " | 8 | 8 | - | 2.6 | 6/15/55 | |
| L " | 8,9&10 | 234 | - | 86.0 | 6/16/55 | |
| M " | 10&11 | 127 | - | 53.8 | 6/17/55 | |
| N " | 11 | 103 | - | 36.6 | 6/21/55 | |
| P " | 11&12 | 209 | - | 87.2 | 6/22/55 | |
| Q " | 13 | 174 | - | 75.4 | 6/23/55 | |
| R " | 14 | 111 | - | 46.6 | 6/24/55 | |
| S " | 14 | 35 | - | 13.8 | 6/28/55 | |
| T " | 14&15 | 161 | - | 68.4 | 6/29/55 | |
| U " | 15&16 | 198 | - | 84.0 | 6/30/55 | |
| V " | 16&17 | 57 | - | 23.9 | 7/ 1/55 | |
| W " | 17&18 | 189 | - | 77.4 | 7/ 7/55 | |
| X " | 18&19 | 135 | - | 62.1 | 7/ 8/55 | |
| Y " | 19&20 | 200 | - | 84.4 | 7/20/55 | |
| Z " | 20&21 | 89 | - | 32.6 | 7/21/55 | |
| AA " | 21 | 93 | - | 35.7 | 8/ 2/55 | |
| BA " | 21&22 | 131 | - | 49.2 | 8/17/55 | |
| CA " | 22 | 152 | - | 54.3 | 8/30/55 | |
| DA " | 22&23 | 174 | - | 85.4 | 9/ 1/55 | |
| EA " | 23 | 14 | - | 0.0 | 9/13/55 | GILBERT |
| 1956 FA " | 24&25 | 129 | - | 56.0 | 5/ 2/56 | GILBERT |
| GA " | 25 | 45 | - | 0.0 | 7/ 4/56 | |
| HA " | 24 | 22 | - | 0.0 | 5/ 1/56 | GILBERT |

CONTINUED-

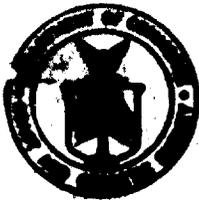
H-8171
STATISTICS
(Continuation)

| <u>DAY</u> | <u>VOL. NO.</u> | <u>NO. POS.</u> | <u>H.L.</u> | <u>STAT. MI.</u> | <u>DATE</u> | <u>VESSEL</u> |
|------------------|-----------------|-----------------|-------------|------------------|-------------|---------------|
| a (red) | 26 | 9 | - | 3.0 | 8/ 3/55 | LAUNCH 175 |
| b " | 26 | 6 | - | 2.1 | 8/ 4/55 | |
| c " | 26 | 108 | - | 37.7 | 8/25/55 | |
| d " | 26 | 42 | - | 12.6 | 8/26/55 | |
| e " | 27 | 14 | - | 4.7 | 8/29/55 | |
| f " | 27 | 21 | - | 7.8 | 9/ 8/55 | |
| g " | 27 | 81 | - | 31.7 | 9/ 9/55 | |
| h " | 27&28 | 135 | - | 43.5 | 9/13/55 | |
| j " | 28&29 | 133 | - | 60.8 | 9/14/55 | |
| k " | 29 | 98 | - | 42.8 | 9/15/55 | LAUNCH 175 |
| | | | | | | |
| a (blue) | 30 | 28 | - | 15.5 | 7/13/56 | LAUNCH 180 |
| b " | 30 | 14 | - | 6.1 | 7/17/56 | |
| c " | 30 | 100 | - | 42.6 | 7/20/56 | |
| d " | 30&31 | 68 | - | 29.3 | 7/25/56 | |
| e " | 31 | 71 | - | 28.7 | 7/26/56 | |
| f " | 31 | 4 | - | 1.7 | 8/29/56 | |
| g " | 31 | 49 | 31 | 5.3 | 8/30/56 | |
| h " | 31 | 15 | 15 | 0.0 | 8/31/56 | |
| j " | 31 | 4 | 4 | 0.0 | 9/ 4/56 | |
| (k day not used) | | | | | | |
| l " | 32 | 41 | - | 25.0 | 7/ 3/56 | |
| m " | 32 | 53 | - | 26.2 | 7/ 4/56 | |
| n " | 32 & 33 | 39 | - | 18.4 | 7/11/56 | |
| p " | 33 | 68 | - | 40.7 | 7/12/56 | |
| q " | 33 | 78 | - | 30.7 | 7/19/56 | |
| r " | 34 | 39 | - | 22.8 | 7/26/56 | |
| s " | 34 | 69 | - | 33.4 | 7/27/56 | |
| t " | 34 | 10 | - | 6.3 | 7/30/56 | |
| u " | 34 & 35 | 53 | - | 21.5 | 7/31/56 | |
| v " | 35 | 68 | - | 34.7 | 8/ 3/56 | |
| w " | 35 | 50 | - | 22.4 | 8/ 9/56 | |
| x " | 35&36 | 64 | - | 30.5 | 8/15/56 | |
| y " | 36 | 84 | - | 10.1 | 8/16/56 | |
| z " | 36 | 45 | - | 8.4 | 8/23/56 | |
| aa " | 36 | 32 | 31 | 0.0 | 8/27/56 | |
| ba " | 36&37 | 70 | - | 29.6 | 8/29/56 | |
| ca " | 37 | 4 | - | 1.0 | 9/ 4/56 | LAUNCH 180 |

GRAND TOTALS:

6083 Positions

2429.8 Stat. Mi. Sdg. Lines



150 YEARS OF SERVICE
1807 - 1957

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

IN REPLY ADDRESS THE DIVISION
COAST AND GEODETIC SURVEY
AND NOT THE OFFICE OF THE LETTER

AND REFER TO NO.
36-45-267

13 February 1958

To: Norfolk District Office
Coast and Geodetic Survey
102 West Olney Road
Norfolk 10, Virginia

Subject: Tide Zones, Project OS-369

Listed below are tide zones referred to Boston that should be used along the outer coast for the above project. This zoning supersedes that which was previously furnished you.

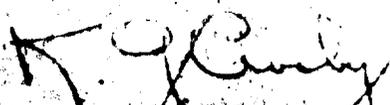
Lat. 41° 42' to Lat. 41° 39'
Time Difference = $+\frac{1}{2}$ Hr.
Ratio of High Water Heights = 0.7

Lat. 41° 39' to Lat. 41° 32'
Time Difference = $+\frac{1}{2}$ Hr.
Ratio of High Water Heights = 0.6

Lat. 41° 32' to Lat. 41° 23'
Time Difference = $+\frac{1}{2}$ Hr.
Ratio of High Water Heights = 0.4

Lat. 41° 23' to Lat. 41° 19'
Time Difference = 0 Hr.
Ratio of High Water Heights = 0.2

Enclosed are the hourly heights referred to mean low water at Boston.


R. G. Crosby, Chief
Tides and Currents Division

Enclosures

NORFOLK PROCESSING OFFICE
LIST OF
FLOATING AIDS TO NAVIGATION

| <u>BUOY</u> | <u>LATITUDE</u> | <u>LONGITUDE</u> | <u>DEPTH</u> | <u>DATE</u> | <u>POS. NO.</u> |
|---|-----------------------|-----------------------|--------------|----------------|-----------------------------------|
| POLLOCK RIP CHANNEL Lighted Buoy 6 ✓ | 41-33.08 | 69-57.55 | 67 | 9/23/56 | 7z(blue) |
| Lighted Bell Buoy 5 ✓ | 41-33.13 | 69-56.79 | 37 | " | 8z |
| Lighted Gong Buoy 4 ✓ | 41-33.62 | 69-55.92 | 38 | " | 9z |
| Lighted Buoy 3 ✓ | 41-33.50 | 69-55.70 | 34 | " | 10z |
| Lighted Whistle Buoy 1 ✓ | 41-33.77 | 69-54.60 | 33 | " | 11z |
| Lighted Bell Buoy 2 ✓ | 41-34.07 | 69-54.27 | 38 | " | 12z |
| Lighted Bell Buoy 10 ✓ | 41-31.85 | 70-00.74 | 70 | " | 2z |
| Lighted Bell Buoy 9 ✓ | 41-32.13 | 69-59.61 | 56 | " | 3z |
| 8 SH Gong ✓ | 41-32.80 | 69-59.20 | 65 | " | 4z |
| Lighted Bell 8 SH ✓ | 41-32.80 | 69-59.03 | 63 | " | 5z |
| Lighted Bell Buoy 7 ✓ | 41-32.85 | 69-58.27 | 41 | " | 6z |
| GREAT ROUND SHOAL Channel Buoy 9 ✓ | 41-23.81 | 69-54.90 | 31 | 5/1/56 | 23HA(Blu) |
| Lighted Whistle Buoy GRS ✓ | 41-24.31 | 69-54.89 | 79 | " | 24HA |
| Channel Buoy 8 ✓ | 41-24.31 | 69-54.62 | 104 | " | 25HA |
| POINT RIP Shoal Buoy 11 ✓ | 41-25.10 | 69-58.18 | 25 | " | 26HA |
| Ltd. Bell Buoy 11A ✓ | 41-25.91 | 69-58.87 | 47 | " | 27HA |
| Buoy 13 ✓ | 41-25.21 | 69-59.84 | 30 | " | 28HA |
| Handkerchief Shoal Buoy 12 ✓ | 41-30.15 | 70-03.15 | 53 | 9/23/56 | 45z(blue) |
| Hodges Rock Buoy 2A ✓ | 41-35.32 | 69-55.10 | 20 | " | 15z |
| Stone Horse Shoal Buoy 11 ✓ | 41-30.65 | 70-00.20 | 37 | 5/1/56 | 4HA |
| Stone Horse Lightship ✓ | 41-32.73 | 69-59.15 | 79 | " | 7HA |
| Handkerchief Ltd. Whis. ✓ Buoy H | 41-28.81 | 70-04.45 | 40 | " | 2HA |
| Hand'chief Shoal Buoy 14 ✓ | 41-29.11 | 70-05.10 | 47 | 8/27/56 | 2aa(blue) |
| " " " " 2 ✓ | 41-33.82 ³ | 70-03.65 ⁶ | 21 ✓ | * 8/26/54 | * 88c(red) |
| Nantucket Sd. Ltd. Whistle Buoy | 41-34.71 ✓ | 69-52.32 ✓ | 52 ✓ | 9/13/55 ✓ | 6EA(blue) ✓ |
| <i>Pollock Rip Ent. Ltd. Whistle Buoy (1955 L.L. 462)</i> | | | | <i>8/25/55</i> | <i>83c (red) 13-14c (red)</i> |

NORFOLK PROCESSING OFFICE
ADDENDUM
To Accompany

HYDROGRAPHIC SURVEY H-8171 (Field No. Par-2154)

GENERAL

This is an un-usually large survey complicated by the fact that the area covered is made up of almost continuous sand-waves, and also because the work was accomplished during three separate field seasons.

Ship PARKER started the survey during the 1954 field season and it was completed by ship GILBERT during the 1955 and 1956 seasons with the assistance of launches #175 and # 180. Descriptive reports were received to cover the the 1954 and 1956 seasons, while a velocity correction report only was submitted for the 1955 season.

TIDES

In the "Tide Note" of the 1956 descriptive report the field party noted discrepancies of 3 to 5 feet at the junctions of tide zones as originally established by the Washington Office. As a result of this note this Office requested a review of the tide zone diagram and re-entered the tides in all volumes in accordance with the results of this review. (See copy of Tide Division letter dated 13 Feb. 1958). Excellent tide junctions were obtained after the re-entry of corrections. See
4d
Re-
view

See Vol 19, pg. 42 - pos 55-56 1.2' Tide jump
pg. 51 - pos 76-77 1.8' Tide jump
pg. 61 pos 98-99 2.0' Tide jump

It was discovered later that in-correct application of the ratio of high water heights by the field party during the 1956 season created the apparent 3 to 5 foot discrepancies at junctions. ✓

All tide corrections East of a line between Monomoy Pt. and Great Pt. were referenced on Boston in compliance with the letter dated 13 Feb. 1958. The area West of this line and Southward to a line extending Westward from Great Pt. were referenced on the Wychmere gage with-out corrections. (The area South of this was referenced on Wychmere with a 0 time correction and a ratio of HW heights of 0.8) ✓

The tide curves are being forwarded with the survey. All time corrections were applied directly to the plotted curves. Ratio corrections were applied with range conversion templates and the reducers were entered in the volumes with-out being tabulated. The use of this method resulted in a large saving in processing time. ✓

SOUNDINGS

Soundings appeared to check very well at crossings, however, it was difficult to obtain comparisons due to the prevalence of ^{SP3} sand-waves. Time between positions was some-times erratic, particularly on the 1954 seasons work. This condition was believed ^{Review} to have been caused by conflicting currents and frequent, heavy tide rips.

All fathograms for the 1954 season and X,Y,Z & DA days (blue) of the 1955 season, were check scanned and the soundings reduced with templates. The remaining soundings on the survey were reduced, in the conventional manner with only spot checks on the accuracy of the field scanning.

DEPTH CURVES

The area is extremely irregular and contains sand-waves throughout. A glance at the smooth sheet would appear to indicate a joining of shoal areas which are shown with separate curves. However, this is not the case, since these ridges have deep channels between the ^Mas is indicated by the curves on the smooth sheet. The lack of space prevented the plotting of many of the deeper soundings.

CHART COMPARISONS

Differences between the smooth sheet and chart are too numerous to tabulate, so in order to show these changes clearly the smooth plotter has prepared an over-layer sheet showing critical soundings and depth curves.

DISCREPANCIES

Soundings plot inside the HWL near the tip of Monomoy Point. Also, soundings on the main scheme lines running East and West ^{see} are in disagreement with along-shore lines. This condition is ^{17.4f} probably the result of erosion and bottom changes caused by ^{Review} storms and strong currents. *resolved in verification.*

Norfolk, Va.
17 Oct. 1958

Respectfully submitted,

Hugh L. Proffitt
Hugh L. Proffitt
Cartographer.

EHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

Chart Division: R. H. Carstens

9 February 1959

Plane of reference approved in
37 volumes of sounding records for

HYDROGRAPHIC SHEET 8171

Locality Nantucket Sound, Mass.

Chief of Party: F. B. Quinn & R. A. Marshall in 1954-1956

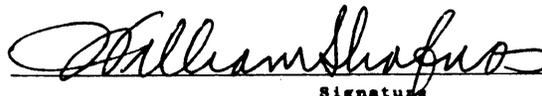
Plane of reference is mean low water, reading

- 1.6 ft. on tide staff ~~at~~ of 1954 at Wychmere Harbor
- 2.9 ft. ~~below B.M.~~ on tide staff of 1955 " " "
- 3.2 ft. on tide staff of 1956 " " "
- 7.0 ft. below B.M. 1 (1954)

~~Height of mean high water above plane of reference is as follows:~~

Height of mean high water above plane of reference is as follows:

- 3.7 ft. for the area using Wychmere Harbor direct
- 3.0 ft. for the area using 0.8 ratio of the high water heights of Wychmere Harbor
- 3.8 ft. for the area using 0.4 ratio of the high water heights at Boston
- 5.7 ft. for the area using 0.6 ratio of the high water heights at Boston



Signature

Chief, Tides Branch

✓

GEOGRAPHIC NAMES

Survey No.H-8171

| Name on Survey | Source | | | | | | | | | |
|--|--------|---|---------|---|---|---|---|---|-----|----|
| | A | B | C | D | E | F | G | H | K | |
| <u>Massachusetts</u> | | | (title) | | | | | | BGN | 1 |
| <u>Monomoy Island</u> | | | | | | | | | " | 2 |
| <u>Nantucket Sound</u> | | | | | | | | | " | 3 |
| <u>Great Point</u> | | | | | | | | | " | 4 |
| Plus any or all of the names shown on the chart section at back of this report, to be applied as desired after inking. | | | | | | | | | | 5 |
| | | | | | | | | | | 6 |
| | | | | | | | | | | 7 |
| | | | | | | | | | | 8 |
| | | | | | | | | | | 9 |
| <u>Tide Station, off sheet:</u> | | | | | | | | | | 10 |
| <u>Boston</u> | | | | | | | | | BGN | 11 |
| | | | | | | | | | | 12 |
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Names approved 12-3-58

L. Heck

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. .8171...

Records accompanying survey: Smooth sheets .1....;
 1-boat sheets 2-parts sounding vols. .37...; wire drag vols.;
 Descriptive Reports .1....; graphic recorder envelopes .38...;
 special reports, etc. 1. Cahier-Miscellaneous Field Data.....
 .1-Report on Corrections to Soundings, see Descriptive report.
 H-8172.

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

| | | |
|---|------------|--------------|
| <i>number of positions on Ad. Wk. (1960)</i> | 361 | JEG |
| Number of positions on sheet | 4851 | + 1593 |
| Number of positions checked | 220 | + 70 approx. |
| Number of positions revised | 20 | + 22 < |
| <i>Positions plotted on overlay (Ad. Wk. 1960)</i> | 361 | |
| Number of soundings revised (refers to depth only) | 725 | + 50 approx. |
| <i>Intermediate sdgs. added</i> | 615 | |
| Number of soundings erroneously spaced | 50 | — |
| Number of signals erroneously plotted or transferred | 0 | — |
| Topographic details | Time 2 hrs | 4 approx |
| Junctions <i>* see also statistics sheet 1960 Wk</i> | Time 100 | 24 " |
| Verification of soundings from graphic record | Time 150 | 16 " |
| <i>(Plotting & linking Ad. Wk., Depth curves, resolving discrep.)</i> | Time 270 | 40 " |
| Special adjustments | | |

Partially verified by J.E. Gearhart *184 6.3-60
 Verification by F.P. SAULSBURY Total time 965 Date 4-26-63

* Reviewed by *J.W. Ziskind* Time 273 Date 7/7/64

* The majority of these revisions were made to more adequately depict bottom configuration 65 revisions were the result of a paper speed correction & 10 resulted from a "b" phase, corr.

* up to pos 33 M, 1955
 ** nearly all soundings on F day 1955 were revised arbitrarily - see verifier's report

MISC FIELD DATA:
 545
 8171
 1954-56
 55W 5016-18
 US COMM C&GS DG
 photos 54W 1318-19

8171

Form 504

U. S. COAST AND GEODETIC SURVEY
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. Par-2154 Office No. H-8171

LOCALITY

State MASSACHUSETTS

General locality NANTUCKET SOUND

Locality VICINITY OF MONOMOY ISLAND

194 56

CHIEF OF PARTY

R.A. MARSHALL

LIBRARY & ARCHIVES

OCT 24 1958

DATE

8171

Notes to Accompany

DESCRIPTIVE REPORT

HYDROGRAPHIC SURVEY - #8171 FIELD No. - Add. WK

NANTUCKET SOUND - MONOMOY POINT WEST

1960 FIELD SEASON

SCALE - 1:20,000

U.S.C. & G.S. Ship GILBERT,
Lt. Kenneth A. MacDonald, Comdg.

SURVEYED BY: Doyle D. Harper, Ensign, C&GS

A. PROJECT

Project No. CS-369, Nantucket Sound, Massachusetts, Supplemental Instructions 222/MEK, S-2-GI, dated 8 July 1960. ✓

B. SURVEY LIMITS AND DATES

The area surveyed is between the western shore of Monomoy Point and Rodgers Shoal, and from Latitude $41^{\circ}33'00''$ to Latitude $41^{\circ}34'30''$. The shore control and Tide Staff were established on 16, 17 and 18 July 1960, and hydrography was accomplished on 25, 26 and 28 July 1960. ✓

C. VESSELS AND EQUIPMENT

LAUNCH CS-1176 was used for all hydrography, operating out of Harwich Port, Mass. Type 808 fathometer No. 159-SPX was used for all sounding. ✓

D. TIDE STATION

A Tide Staff was used, and read at half-hour intervals. It was located near the south end of Powder Hole on Monomoy Point, and outside the sand spit forming Powder Hole. The staff was not placed inside Powder Hole because the entrance has become so constricted that there is an obvious delay in the tide. *Not plotted on Overlay, No position available.* ✓

E. SMOOTH SHEET

This survey was not smooth-plotted, in accordance with instructions. ✓

F. CONTROL STATIONS

The only previous control recovered was MONOMOY POINT LIGHTHOUSE, 1875 and MONOMOY POINT LIFE SAVING STATION CUPOLA, 1902. Three additional signals, FISH, WILD and POLE, were located by 3-point theodolite fixes and were only temporarily marked. One additional signal, FLAG, was located by 3-point sextant fixes. *Position computations with Tans-Gilbert Bar Check* ✓

G. SHORELINE AND TOPOGRAPHY

Shoreline was from advance manuscript T-11208. The shoreline in the vicinity of Powder Hole was revised and is shown in red ink on the Cronaflex copy of Survey H-8171, which was used as a boat sheet. Sextant fixes were used to locate this shoreline and are recorded in the sounding volumes. ✓

H. SOUNDINGS

All soundings are recorded in feet using Type 808 Fathometer ✓
No. 159-SPX.

I. CONTROL OF HYDROGRAPHY

/1

All hydrography was controled by 3-point sextant fixes. ✓

J. ADEQUACY OF SURVEY

The survey is considered adequate for the purpose intended. ✓

K. CROSS LINES

Cross lines are about 6% of the total and are in good agree-
ment in all areas. X

L. COMPARISON WITH PRIOR SURVEYS

A junction was made with Survey H-6473 on the North, with good
agreement. Junction ^{of H-6473} with Survey H-8171 was in good agreement on the West,
but the junction on the South shows some additional shoaling in Latitude
41°33'00", Longitude 70°01'30", with depths of 5 to 6 feet in previous
depths of 9 to 12 feet. *because of this, the add'l wk was plotted on an overlay
& inserted in this report, zpf.*

M. COMPARISON WITH CHART

Comparison with Chart No. 250 shows general disagreement. Rod-
gers Shoal least depths are several feet deeper, and most other areas some-
what shoaler.

APPLICABLE DATA

All applicable data to be forwarded under separate cover to the
Washington Office, simultaneously with this report. ✓

Respectfully submitted,

Doyle D. Harper
Doyle D. Harper,
Ensign, C&GS.

APPROVED & FORWARDED:

Kenneth A. MacDonald
Kenneth A. MacDonald,
Lieutenant, C&GS,
Com'd'g Ship GILBERT.

41°35'

70° 02'

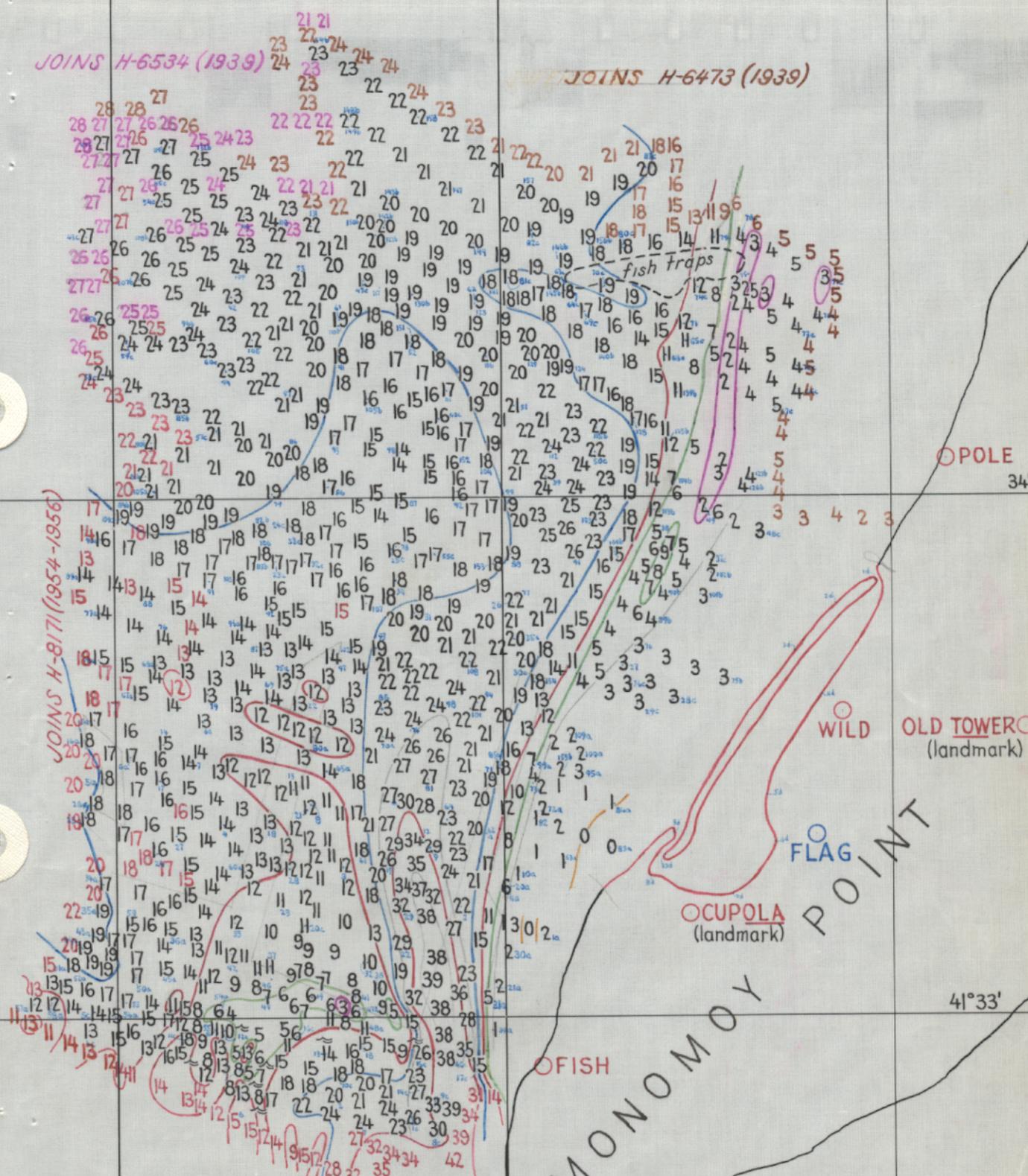
01'

70° 00'

41°35'

JOINS H-6534 (1939)

SUPERJOINS H-6473 (1939)



34'

34'

33'

41°33'

70° 02'

01'

70° 00'

H-8171 Add'l. Wk.
 July-1960 - Scale 1:20,000
 Chief of Party K.A. MacDonald
 Soundings in feet at M.L.W.

S T A T I S T I C S

| <u>Volume No.</u> | <u>Day Letter</u> | <u>Date</u> | <u>Number of Positions</u> | <u>Nautical Miles of Sounding</u> |
|-------------------|-------------------|-------------|------------------------------------|-----------------------------------|
| 1 | a (blue) | 7/25/60 | 109 | 18.1 |
| 1 | b " | 7/26/60 | 159 | 14.1 |
| 1 & 2 | c " | 7/28/60 | 83 | 13.5 |
| | | | — | — |
| | | | TOTALS - 351 | 45.7 |
| | | | pos. locating shoreline changes 10 | |
| | | | 361 | |

TOTAL AREA OF SURVEY: 1.6 Square Nautical Miles

FATHOMETER CORRECTIONS

Two bar checks were taken and are recorded in Volumes 1 and 2. The two checks were meaned, resulting in the following reducers.

| <u>DEPTH</u> | <u>REDUCER</u> |
|--------------|----------------|
| 0 - 15 feet | 0.0 |
| 15 - 25 " | - 0.2 |
| 25 - 30 " | - 0.4 |
| 30 - 40 " | - 0.6 |

✓

OFFICE OF CARTOGRAPHY

REVIEW SECTION -- NAUTICAL CHART DIVISION

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8171

FIELD NO. PAR-2154

Massachusetts, Nantucket Sound, Vicinity of Monomy Island
to Nantucket Island

SURVEYED: Ad. Wk July 1960
August-October 1954
September 1956

SCALE: 1:20,000

PROJECT NO. CS-369

SOUNDINGS: 808 Depth Recorder
EDO Depth Recorder

CONTROL: Shoran

Chief of Party-----F. B. Quinn
R. A. Marshall
K. A. MacDonald
Surveyed by-----F. B. Quinn
R. A. Marshall
N. E. Taylor
M. B. Miller
D. D. Harper
Protracted by-----A. G. Atwill
Soundings Plotted by-----A. G. Atwill
Verified and Inked by-----F. Saulsbury
J. E. Gearhart
Reviewed by-----I. M. Zeskind
Inspected by-----R. H. Carstens

Date: 7/27/64

1. Description of the Area

This is a survey of that area of Nantucket Sound which lies between the south end of Monomoy Island and the north end of Nantucket Island. The bottom is very irregular with shoals, sand ridges, deeps and natural channels contributing to the bottom irregularity. Some sand ridges extend as much as 1 1/2 to 2 miles in length.

2. Control and Shoreline

The source of the control is given in the Descriptive Report.

The shoreline originates with unreviewed photogrammetric surveys T-11217(1955) and T-11208 (1952-54). The shoreline at Powder Hole was revised at the time of the additional work in 1960. The revised shoreline is shown in red.

3. Hydrography

Considering the irregularity of the bottom, depths at crossings are in good agreement. The usual depth curves are adequately delineated. The least depths on shoals were adequately determined.

4. Condition of Survey

- a. The sounding records and Descriptive Report are complete and comprehensive. However many soundings on the boat sheet were illegible and poorly inked.
- b. The smooth plotting was accurately done.
- c. The smooth plotter was required to add an excessive number of peaks and deeps in the sounding records.
- d. Due to the improper designation of tide zones for the 1956 season's work, discrepancies of 3 to 5 ft between soundings at crossings were noted. These discrepancies were eliminated by the processing office recomputing the tide reducers for the 1956 season's work in accordance with information contained in the letter from the Washington Office dated 13 February 1958. (See Addendum by Norfolk Processing Office.)

- e. In order to bring alongshore junctional depths of the present survey into agreement with those on H-8349 on the north, arbitrary corrections of +.02 to +.04 mi. were applied to shoran positions of the present survey.
- f. At the south end of Monomoy Island arbitrary corrections were applied to shoran positions on S day in order to bring the hydrography of the present survey into agreement with the shoreline.
- g. In order to bring the junctional, adjacent, and crosslines soundings of the present survey into agreement, arbitrary corrections of -1.0 ft. to -1.5 ft. were applied to soundings for F day, 1955. The sounding records revealed only one bar check submitted with the survey for the ships work of the 1955 season. No abstract of fathometer corrections or the Descriptive Report for the 1955 season was received in the Washington Office.

5. Junctions

Adequate junctions were effected with H-8172 (1954-56) on the west, with H-6534 (1939) on the northwest, with H-8349 (1956) on the northeast, with H-8350 (1955) and H-8409 (1956-57) on the east, and with H-8450 (1957-58) and H-8449 (1958) on the south. A butt junction was made on the north in the vicinity of Monomoy Point between the 1960 season's additional work and H-6473 (1939). This was necessary because of the change in bottom configuration here since 1939. The additional work of 1960 was plotted on tracing cloth and inserted in the descriptive report.

6. Comparison with Prior Surveys

| | |
|-----------------------------|------------------------------|
| A. H-223 (1847-8), 1:40,000 | H-2051 (1890), 1:20,000 |
| H-387 (1853), 1:30,000 | H-2101b (1891), 1:20,000 |
| H-455a (1854), 1:40,000 | H-2121 (1892), 1:40,000 |
| H-527 (1855-56), 1:30,000 | H-2168 (1893), 1:10,000 |
| H-569 (1856), 1:40,000 | H-2224 (1895-1905), 1:20,000 |
| H-570 (1856), 1:40,000 | H-2225 (1895), 1:20,000 |

H-8171 - 4

| | |
|-------------------------------|----------------------------------|
| H-961 a & b (1868), 1:40,000 | H-2426 (1899), 1:20,000 |
| H-1149 (1872), 1:20,000 | H-2531 (1901), 1:40,000 |
| H-1195 a & b (1873), 1:20,000 | H-2539 (1901-06), 1:20,000 |
| H-1243 (1874), 1:20,000 | H-2597 (1902), 1:20,000 |
| H-1284 (1875), 1:10,000 | H-2603 (1902-05), 1:10,000 |
| H-1285 (1875), 1:40,000 | H-2603 a (1912), 1:40,000 |
| H-1573 (1883), 1:20,000 | H-3031 (1909), 1:40,000 |
| H-1727 (1886), 1:10,000 | H-3031 a & b (1912-14), 1:20,000 |
| H-2039 (1890), 1:10,000 | |
| H-2043 (1890), 1:20,000 | |

These prior surveys together cover the area of the present survey. The surveys made between 1847 and 1868 were of a reconnaissance nature. The surveys made after 1868 more closely develop the bottom configuration. A comparison between the prior and present surveys reveals many changes in the bottom configuration and the shoreline. These changes are attributed to the action of the current and storms. The bottom which consists of many sand ridges and shoals is in a state of constant flux with the resultant changes in depths. The sand ridges have generally shifted in direction and location. Because of this shifting of the sand ridges, depth changes of 2 to 24 ft. are noted, as for example, in lat. $41^{\circ}24.17'$, long. $70^{\circ}03.05'$, where a prior depth of 30 ft. falls in present depths of 54 ft. Little Round Shoal has moved southward as much as 125 meters. The portion of Twelve Foot Shoal which falls on the present survey in the vicinity of lat. $41^{\circ}31.0'$, long. $69^{\circ}53.5'$ has deepened from 8 to 16 ft. and now has a least depth of 17 ft. Bearse Shoal has moved southward as much as 700 meters. Handkerchief Shoal has extended to the south and south westward. Differences of 2-22 ft. between the prior and present survey depths are found here. Great Round Shoal continues to trend in a southeastward direction. It has, however, extended its southeastern limits about 2 miles beyond its prior limits. No change in the trend of the sand ridges on this shoal are noted. The southeast portion of Pollock Rip extends beyond its prior limits. Considerable shifting of the sand ridges here and on the Broken Part of Pollock Rip

has occurred. The present depths on these 2 features are generally 2-9 ft. shoaler than the depths on the prior surveys. Changes in the shoreline are noted both at the south end of Monomoy Island and the north end of Nantucket Island. The shoreline at the south end of Monomoy Island has accreted as much as 450 meters in a southwesterly direction. The shoreline on the west side of this Island in the vicinity of lat. $41^{\circ}33.05'$, long. $70^{\circ}00.88'$ has eroded about 200 meters. The shoreline at the north end of Nantucket Island has eroded about 150 meters. The shoreline on the east side of Great Point in the vicinity of lat. $41^{\circ}23.0'$, long. $70^{\circ}02.07'$, has eroded about 100 meters. The shoreline on the west side of Great Point has accreted and formed a spit which encloses a lagoon.

In summation it may be stated that due to the shifting of the sand ridges falling within the area of the present survey many of the shoaler prior depths fall in present depths which are 5-28 ft. greater. However, attention is specifically directed to the following discrepancies:

1. The 28-ft. sounding charted in lat. $41^{\circ}28.56'$, long. $70^{\circ}02.46'$, should actually be 38 ft. A 38-ft. sounding on H-2225 (1895) was erroneously charted as 28 ft. The 28-ft. sounding should be deleted from the chart. *off 265*
2. The 19-ft. sounding charted in lat. $41^{\circ}23.30'$, long. $69^{\circ}54.78'$ is from H-2101b (1891), where it was plotted out of position. In its correct position, it falls about 200 meters to the north-westward where comparable depths are found on the present survey. The 19 ft. should be deleted from the chart. *off 265*

Twelve soundings indicating possible shoal features have been carried forward from the prior surveys to the present survey. With the addition of these soundings the present survey is adequate to supersede the prior surveys within the common area.

| | | |
|----|-------------------------|--------------------------|
| B. | H-5141 (1931), 1:20,000 | H-6473 (1939), 1:10,000 |
| | H-5249 (1932), 1:40,000 | FE-5, 1942, 1:20,000 and |
| | H-6712 (1940), 1:20,000 | 1:80,000 |

These prior surveys which only cover portions of the present survey were controlled by either visual fixes on shore signals or survey buoys. Difficulty at times was experienced by the hydrographer in obtaining accurate fixes from the survey buoys due to the strong currents in the area covered by the present survey. Soundings in depths less than 10 fms. were obtained by the leadline. Soundings in greater depths were obtained by fathometer. A comparison between the prior and present surveys reveals changes in shoreline and bottom configuration which are attributed to causes similar to those mentioned in paragraph A above. Many sand ridges shown on the prior surveys are either disintegrating or shifting in location. However, the general trend of the sand ridges has not changed, i.e., southeastward. The shifting of sand ridges in Pollock Rip Channel has caused changes in depths of as much as 10 ft. The portion of Great Round Shoal which falls in the area of the present survey shows minor depth changes and slight shifting of the sand ridges. Considerable change in the bottom configuration has occurred in that portion of Handkerchief Shoal which extends from the southwest end of Monomoy Point to the western limits of the present survey. Here the sand ridges on the present survey are more numerous and extend further to the southeastward than formerly. The shoreline on the southeast side of Monomoy Island has accreted about 400 meters. The shoreline on the east side of this island in the vicinity of lat. $41^{\circ}35.0'$, long. $69^{\circ}59.0'$, has eroded about 150 meters.

As a result of the changes in shoreline and bottom configuration, differences in depths of as much as 10 ft. between the prior and present surveys are noted.

The 51-ft. sounding charted in lat. $41^{\circ}26.30'$, long. $70^{\circ}00.55'$, from H-5249 (1932) falls in present depths

of 58 ft. The charted sounding is considered to be 1 fm. too shoal and actually should be 57 ft. The 51 ft. should be deleted from the chart.

54 added 2-65

Two soundings have been carried forward from the prior to the present surveys. With the additions of these soundings the present survey is adequate to supersede the prior surveys within the common area.

7. Comparison with Chart 250 (Latest print date 4/23/62)

A. Hydrography

The charted hydrography originates principally with the previously discussed prior surveys which need no further consideration, supplemented by soundings from the boat sheets of the present survey and the Corps of Engineers' survey of 1955 (Bp 52968-70). Differences in depths of as much as 10 ft. between charted and present depths are noted. Attention is directed specifically to the following differences between the charted and present survey depths:

1. The 16-ft. sounding charted in lat. $41^{\circ}34.75'$, long. $69^{\circ}58.25'$, from the boat sheet of the present survey was revised to 24 ft. during verification of the present survey. OK HR off 2-65
2. The 5-ft. sounding charted in lat. $41^{\circ}31.30'$, long. $70^{\circ}03.9'$, from the boat sheet of the present survey is erroneous and should be deleted from the chart. A position number was mistaken for a sounding. The charted 5 ft. falls in 9 ft. on the present survey. OK HR off 2-65
3. The 12-ft. sounding charted in lat. $41^{\circ}31.95'$, long. $69^{\circ}59.20'$, from the boat sheet of the present survey is erroneous and should be deleted from the chart. A 12 ft. sounding was erroneously inked on the boat sheet. OK HR off 2-65

- OK 4. A 30-ft. sounding falling in lat. $41^{\circ}28.80'$, long. $70^{\circ}00.77'$ on the boat sheet of the present survey was erroneously charted as 20 ft. HR off 265
- OK 5. The 28-ft. sounding charted in lat. $41^{\circ}28.84'$, long. $69^{\circ}58.88'$, originates with the boat sheet of the present survey. The 28 was revised to 33 during verification of the present survey. HR off 265
- OK 6. A 41-ft. sounding shown on the boat sheet of the present survey in lat. $41^{\circ}27.93'$, long. $70^{\circ}01.70'$, was erroneously charted as 31 ft. The 41 was revised to 38 ft. during verification and review of the present survey. The charted sounding, therefore, should be revised to 38 ft. HR check SS 37 charted
7. A 22-ft. sounding shown on the present survey in lat. $41^{\circ}27.45'$, long. $69^{\circ}56.75'$ was erroneously charted as 12 ft. The 22 was revised to 21 during verification and review. The charted 12 should be revised to 21. HR off 265
- OK 8. The 17-ft., 15-ft. and 13-ft. soundings charted in lat. $41^{\circ}27.32'$, long. $69^{\circ}56.12'$, lat. $41^{\circ}27.35'$, long. $69^{\circ}55.65'$, and lat. $41^{\circ}27.37'$, long. $69^{\circ}55.35'$, respectively, originate with the boat sheet of the present survey where they were incorrectly plotted. The soundings actually fall on the sounding line between the 2 fixes immediately preceding those between which they were plotted. The soundings have been correctly plotted on the smooth sheet and should be deleted from the chart. HR off 265
- OK 9. The 10-ft. sounding charted in lat. $41^{\circ}27.41'$, long. $69^{\circ}54.80'$, from the boat sheet of the present should be deleted from the chart. An illegible 19 ft. on the boat sheet was mistaken for 10 ft. HR off 265
- OK 10. A 31 ft. sounding charted in lat. $41^{\circ}27.50'$, long. $70^{\circ}02.70'$, from the boat sheet of the present survey is erroneous. The 31 was revised HR off 265

to 41 during the smooth plot of the present survey, and should be so charted.

11. An illegible 21-ft. sounding located in lat. $41^{\circ}26.34'$, long. $69^{\circ}54.43'$, on the boat sheet of the present survey was erroneously charted as 12 ft. *OK*
12. The 28-ft. sounding charted in lat. $41^{\circ}25.62'$, long. $69^{\circ}57.96'$, from the boat sheet of the present survey is in error. A 38-ft. sounding was plotted as 28 ft. on the boat sheet. *HR of 265*
13. The 11 ft. charted in lat. $41^{\circ}33.32'$, long. $69^{\circ}55.68'$ from the boat sheet of the present survey was revised to 14 ft. during review. *OK HR of 265*
14. The 18-ft. sounding charted in lat. $41^{\circ}26.72'$, long. $69^{\circ}55.16'$, originates with the boat sheet of the present survey where it was plotted 1 fm. too shoal. The charted 18 was revised to 23 during verification and review of the present survey. *OK of 265*
15. The 22-ft. sounding charted in lat. $41^{\circ}26.10'$, long. $69^{\circ}55.52'$ is from the boat sheet of the present survey. A 32 ft. sounding was erroneously recorded as 22 ft. *OK HR check SS 25-26 dated*
16. The charted sunken wrecks whose locations are listed below should be retained on the chart until they can be investigated by wire drag. *OK*

| <u>Latitude</u> | <u>Longitude</u> |
|--------------------|--------------------------------------|
| $41^{\circ}32.95'$ | $69^{\circ}58.82'$ <i>AW 13 1931</i> |
| $41^{\circ}31.98'$ | $69^{\circ}59.88'$ <i>HR 1928</i> |
| $41^{\circ}23.97'$ | $69^{\circ}55.55'$ <i>HR 1888</i> |

17. The 11-ft. charted in lat. $41^{\circ}30.7'$, long. $70^{\circ}00.1'$ from the boat sheet of the present survey is actually the number of a nearby buoy and should be disregarded.

The present survey is adequate to supersede the charted hydrography within the common area.

B. Aids to Navigation

The present survey positions of the charted aids are in substantial agreement with the charted positions and adequately mark the features intended.

8. Compliance with Project Instructions

The survey adequately complies with the project instructions.

9. Additional Work Recommended

This is considered to be a good basic survey and no additional work is recommended.

Wallace A. Bruder
Acting Chief,
Marine Chart Division

Examined and Approved:

W. J. Miller
Associate Director,
Hydrography and Oceanography

H-8171

Information for Future Presurvey Reviews

The survey covers an area where changes in bottom configuration and shoreline may be expected. The shoreline on the south end of Monomoy Island may be expected to accrete and the north end of Nantucket Island may be expected to erode. The bottom which consists principally of sand ridges and shoals is in a state of constant flux. These features are constantly changing in location, direction and size with the resultant changes in depths.

The wrecks listed in paragraph 7A-16 should be investigated by wire drag.

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8171 Ad. Wk.

Records accompanying survey: Smooth sheets;
 boat sheets ..1...; sounding vols. ...3...; wire drag vols.;
 Descriptive Reports ..1...; graphic recorder envelopes ..2...;
 special reports, etc. 1-st manuscript, Blue Line T-11208.....

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

| | | |
|---|-------|-----------|
| Number of positions on sheet | | 381 |
| Number of positions checked | | |
| Number of positions revised | | |
| Number of soundings revised (refers to depth only) | | |
| Number of soundings erroneously spaced | | |
| Number of signals erroneously plotted or transferred | | |
| Topographic details | Time | |
| Junctions | Time | |
| Verification of soundings from graphic record | Time | 1 hr..... |
| Special adjustments | Time | |

Verification¹ by *§ Smooth Plot on overlay* *F. SAULSBURY* Total time *80 hrs* Date

* Reviewed by *A. J. [Signature]* Time *3* Date *7/27/64*

* also see statistic sheet for 1954-56 wk

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~

30 January 1961

Division of Charts: R.H. Carstens

Plane of reference approved in
3 volumes of sounding records for

HYDROGRAPHIC SHEET 8171 Ad. WK.

Locality Monomoy Point West, Massachusetts

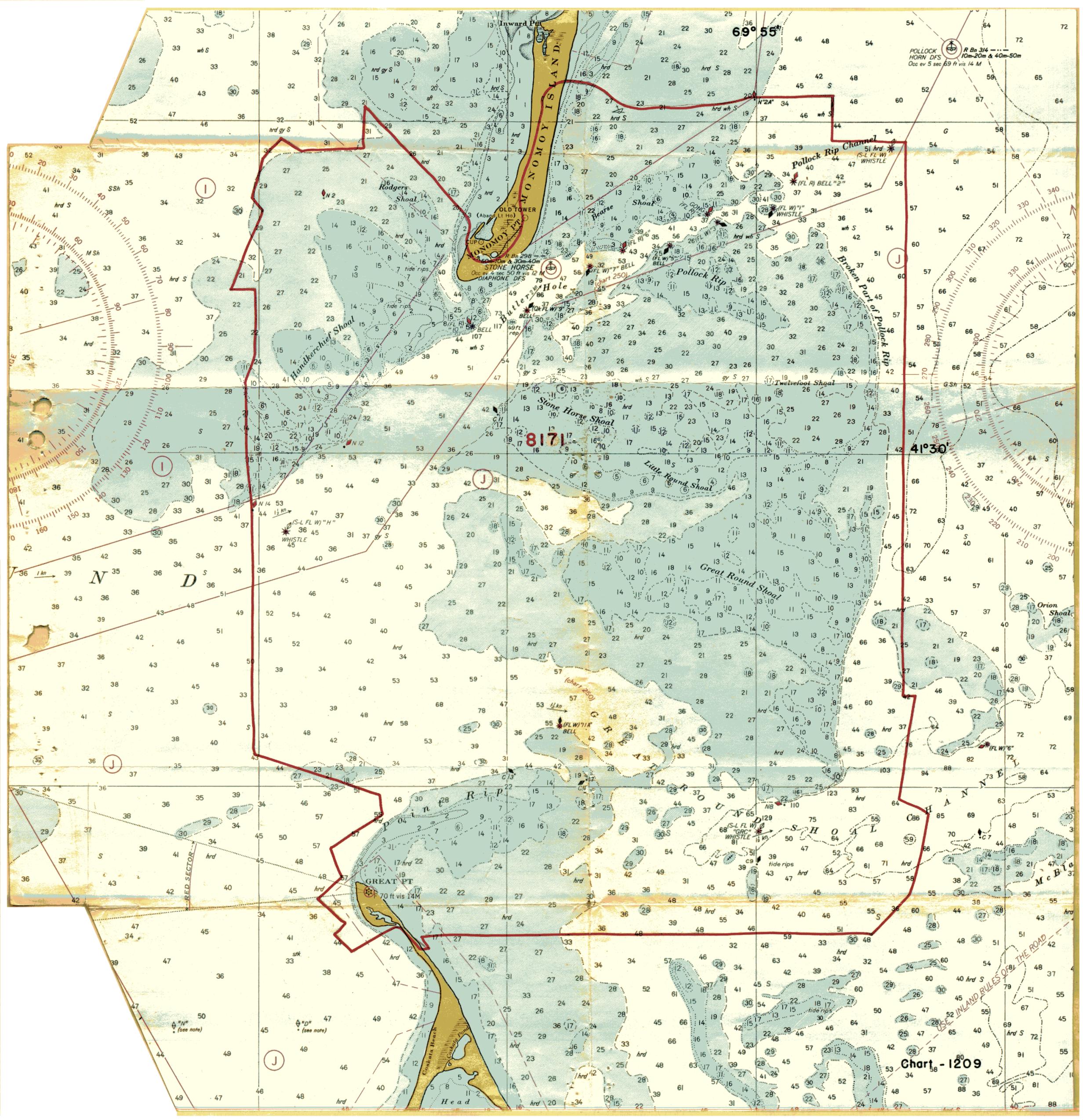
Chief of Party: K.A. Mac Donald (1960)
Plane of reference is mean low water reading
1.5 ft. on tide staff at Monomoy Point, Mass.
10.9 ft. below B. M. 13 (1939)

Height of mean high water above plane of reference is: 3.4 ft.

Condition of records satisfactory except as noted below:


Acting Chief, Tides and Currents Branch

~~Chief, Division of Tides and Currents.~~



POLLOCK HORN DFS
Occ ev 5 sec 69 ft vis 14 M
R Bn 3/4
10m-20m & 40m-50m

8171

41° 30'

N D

Chart - 1209

USE INLAND RULES OF THE ROAD

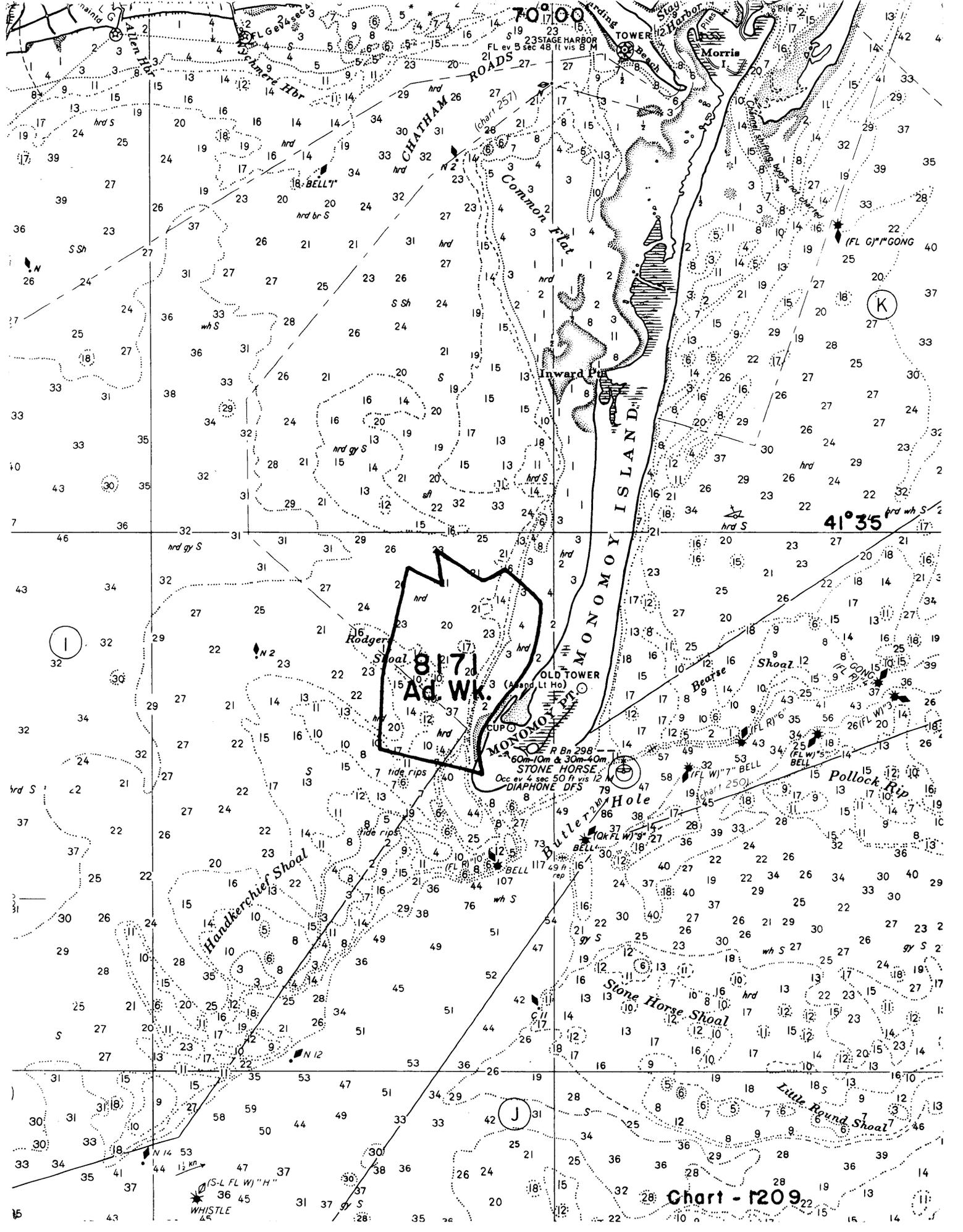


Chart - 1209

Ad. Wk. 8171

41°35'

I

J

K

WHISTLE

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8171
Surveyed 1964-5-6

Record of Application to Charts

| DATE | CHART | CARTOGRAPHER | REMARKS |
|-----------|---------------------------|------------------|---|
| Nov '58 | 1209 | Eaton | Before After Verification and Review <i>Partially</i> |
| 3-31-59 | 250 | R.E. ELKINS | Before After Verification and Review <i>Partly applied</i> |
| 5/11/59 | 1107 | J.H. EATON | <i>Partially Applied</i> Before After Verification and Review |
| 5/13/59 | 71 | J.H.E. | Before After Verification and Review |
| 12 Aug 59 | 1108 | <i>Wichols</i> | Before After Verification and Review <i>Partial</i> No 1107 #38 |
| 10-7-61 | ^{NEW CHT} 265 | R.K. de Landau | <i>Completely applied pencil 55</i> Before After Verification and Review <i>Partly</i> |
| 11-19-67 | 265 | J.W. Darley | Before After Verification and Review <i>Completely applied</i> |
| 12/11/67 | 1107 | <i>M.H. Wald</i> | Before After Verification and Review <i>Deleted</i> <i>hydro within area, consider fully applied</i> |
| 3/4/60 | 1000 | Svendson | No corr (Hydro prev. deleted in this area) |
| 10-14-68 | 1209 | <i>M.H. Wald</i> | Before After Verification and Review <i>Applied</i> <i>only Reviewer's report at this time</i> |
| 3-10-69 | 250 | B.W. Fernandez | Agreed corrections from Report only, after Verification & Review & Inspection |
| 6-25-70 | 1209 | B. Fernandez | Fwd until fully app'd to Chrt. 250 |
| Dec 70 | 250 | R.D. Sanocki | Fully applied after Verification, Review and Inspection. |
| Jul 71 | 1209 | R.D. Sanocki | Fully applied after Verification, Review, & Inspection thru Chrt. 250 dws #20 on dws #38 |
| 7-30-71 | 70 | K. GEAN | FULL AFTER VER, REL. & INSP THRU CHART 1209 DWG #38 |

M-2168-1

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.