

8170

Diag. Cht. No. 1210-3.

Form 504

U. S. COAST AND GEODETIC SURVEY  
DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. PAR-05154 Office No. H-8170

LOCALITY

State Massachusetts

General locality

Locality Woods Hole Harbor and Approaches

19 54

CHIEF OF PARTY

F.B. Quinn

LIBRARY & ARCHIVES

DATE Spetember 20, 1956

8170

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-8170

Field No. Par-05154

State ..... MASSACHUSETTS .....

General locality ..... ~~WOODS HOLE~~ .....

Locality ..... WOODS HOLE HARBOR AND APPROACHES .....

Scale 1:5,000 ..... Date of survey 24 May to 24 Sept. 1954 .....

Instructions dated ..... 19 March 1954 .....

Vessel ..... SHIP PARKER & LAUNCH # 168 .....

Chief of party ..... F.B. QUINN .....

Surveyed by ..... F.B. QUINN, J.C. TRIBLE & C.W. TUPPER .....

Soundings taken by ~~fathometer~~ <sup>XXXXXX</sup>, graphic recorder, hand lead, ~~wire~~ <sup>POLE</sup> .....

Fathograms scaled by ..... NORFOLK PROCESSING OFFICE .....

Fathograms checked by ..... " " " .....

Protracted by ..... A.G. ATWILL & W.W. FEAZEL .....

Soundings penciled by ..... A.G. ATWILL & W.W. FEAZEL .....

Soundings in ~~XXXXXX~~ feet at MLW ~~XXXXXX~~ *and ice free depths.*

REMARKS: ..... This survey was processed and smooth plotted by the Hydrographic Section of the Norfolk District. ....  
.....  
.....

*XW/Wt 10/17/91*

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SURVEY H - 8170  
(field No. PAR - 05154)

U. S. C & G. S. LAUNCH NO. 168      COMMANDER F. B. QUINN, CHIEF OF PARTY

SURVEYED BY: COMMANDER J. C. TRIBBLE, JR.      Scale 1:5,000

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A. PROJECT:

Instructions for Project GS-371, Woods Hole, Massachusetts were dated 19 March 1954. Letter reference, 22/MEK, S-2-PARKER. ✓

B. SURVEY LIMITS AND DATES:

Survey covers the exact limits of U. S. C & G. S. Chart 348. This chart includes Woods Hole Harbor and areas in the vicinity of the entrance passages leading to Woods Hole. Junction and overlap was made with prior surveys, H-6350(1:20,000, 1938-1942) and H-6742(1:20,000, 1942). The survey commenced 24 May 1954 and was completed 24 September 1954. ✓  
*and H-6349 (1938-42)*

Completions of this survey was delayed by a number of factors occurring throughout the field season. Some of the factors are enumerated as follows:

1. Several days were spent at the beginning of the season outfitting the launch and getting it into operating condition. ✓
2. Several days were spent experimenting with ballast, applying pressure on fathometer units, and insulation of the oscillator wells to obtain acceptable results for hydrography. ✓
3. Launch was inoperative for three days while waiting for new clutch. ✓
4. Excessive currents coupled with the poor maneuverability of the launch. ✓
5. A light sea in the open offshore limits caused echo returns to be unacceptable. Running in only one direction was done in some instances to obtain acceptable records. ✓
6. The engine placement was in an unsheltered location resulting in distributor trouble during damp weather. ✓
7. After hurricanes CAROL and EDNA, check lines had to be run over cross sections of the entire project. ✓

*Aug. 31, 1954      Sept 11, 1954*  
*Little or no change resulted from the hurricanes*

C. VESSELS AND EQUIPMENT:

A 25 foot, aluminum motor launch, No. 168, was furnished by the East Coast Field Party and fathometer soundings were obtained with an 808 type fathometer No. 116-S. The launch had a turning radius of approximately 10 meters at hydro speeds. Hydrography was accomplished entirely by launch No. 168 with the exception of the first four days of the season, 7 July through 10 July, when the ship PARKER was used. An 808 type fathometer No. 117-S was used aboard the PARKER.

The launch party operated from the ship, based at the Woods Hole Oceanographic Institution wharf or alongside the Fish and Wildlife ship ALBATROSS.

Pole soundings were utilized in comparison with fathometer depths in areas containing eel grass or other marine growth and where the depths were 2 feet or less.

D. TIDE AND CURRENT STATIONS:

Not attached at time of verification.

One standard automatic tide gage was used, supplemented by two portable automatic gages, installed at specified locations as given in the project instructions, to cover the entire survey area. For areas applicable to each gage, see attached chart 348. Tide reducers were obtained directly from the individual gages and used in their applicable areas, as shown on attached chart, without any time differences or range corrections. The factor for reducing all heights to MLW are tabulated in APPENDIX D.

E. SMOOTH SHEET:

<sup>was</sup>  
The smooth sheet ~~will~~ be plotted by the Norfolk Processing Office.

<sup>was</sup>  
Shoreline ~~will~~ be obtained from the Photogrammetric Project PH-116, Shoreline Manuscript T-11336. (1951-2-3-5)

F. CONTROL STATIONS:

All triangulation stations and permanently marked and recoverable topographic stations were plotted on the boat sheet from the given G. P'S included with original data from the Washington Office. This data is included in a separate envelope and transmitted with the survey records. All photographic points were taken from a blue line print of the Preliminary Manuscript T-11336, PH-116. Photo points were used for control when identification was positive.

G. SHORELINE AND TOPOGRAPHY:

The low water <sup>line</sup> was defined by soundings where possible. It was impossible in some areas to run close to shore due to foul areas. These areas are sketched on the boat sheet. The high water line was transferred to the boat sheet from a blue line print of the Preliminary Manuscript PH-116, Shoreline Manuscript T11336. (1951-2-3-5)

<sup>8/5</sup> Shoreline transferred to S/S.  
See addendum (56B) D.R. for T-11336.  
Verified against the Reviewed manuscript.  
See Verifiers report.

G. SHORELINE AND TOPOGRAPHY (CONTINUED):

There are a number of changes in the topographic features that should be noted as follows:

1. A new pier has been constructed in the north east part of Little Harbor, Lat.  $41^{\circ} 31.35$ , Long.  $70^{\circ} 39.92$ . This is included and described fully in sounding volume # 4. ✓
2. An addition has been made to the Coast Guard wharf in the north west part of Little Harbor, Lat.  $41^{\circ} 31.30$ , Long.  $70^{\circ} 40.08$ . This is included and described fully in sounding volume # 9. ✓
3. Changes at the Woods Hole Oceanographic Institution wharves, Lat.  $41^{\circ} 31.42$ , Long.  $70^{\circ} 40.32$ , were planned at the time of the survey. Changes are shown on the Y & D drawing No. 627468 (U.S. Navy) that is transmitted with the survey records. ✓
4. The Fish and Wildlife Service pier located at Lat.  $41^{\circ} 31.56$ , Long.  $70^{\circ} 40.85$  is completely destroyed and no evidence of piling or foundation is left. Also the wharves maintained by the Fish and Wildlife Service were destroyed during hurricanes CAROL and EDNA. There are plans anticipated for reconstruction, but these plans were not obtained. ✓
5. The pier extending from the rock bulkhead located at Lat.  $41^{\circ} 30.64$ , Long.  $70^{\circ} 42.18$  is missing, however there is a granite foundation approximately 4 feet square and awash at MLW at the tip of the old pier. ✓

Additions, deletions and pertinent changes were submitted during the field season for the new printing of Chart 348 in reply to Memorandum 22/MEK, S-1-PK, 16 July 1954. (Chart letters 681 & 935 of 1954) ✓

H. SOUNDINGS:

Depths were measured by fathometer, lead line, and pole. ✓

Standard procedure was used in obtaining bar checks in accordance with paragraph 557 of the Hydrographic Manual. Attached to this report as APPENDIX A is "Velocity Corrections" determined from bar checks. All bar checks for the season were meaned and reduced to an A range plot. The curves were drawn and results tabulated as shown. Full explanation of the methods used is given in a separate velocity correction report submitted with the sounding records. ~~attached~~ *attached to the descriptive Report.* ✓

I. CONTROL OF HYDROGRAPHY:

Horizontal control was executed through standard procedure of obtaining three point fixes on signals previously located by triangulation, topographic detail, or positively identified photo prints. ✓ (See TP 7 of Review)

I. CONTROL OF HYDROGRAPHY (CONTINUED):

That area of the survey SE and SW of Bull Island and including Inner Harbor could not be controlled as strongly as the rest of the survey. In this area a section of the shoreline was omitted from the blue line print and had to be sketched in from Chart 348. There was not enough topographic or photographic control to tie in other hydrographic signals. The greater part of the work in this area was spotted on the boat sheet.

Shoreline added to 5/5 from revised 1/5 of T-11336

J. ADEQUACY OF SURVEY:

The survey is adequate to supersede prior surveys. Junctions with adjoining surveys are satisfactory. Depth curves were drawn at 1 fathom intervals.

standard. See P 48 5 of Re-view

K. CROSSLINES:

Cross lines were run to the extent of about 8 - 10% of the regular system of sounding lines, excluding development, and agreement was satisfactory.

P 2 Review

L. COMPARISON WITH PRIOR SURVEYS:

The area of this survey has been previously covered on surveys H-6742 (1:20,000, 1942), H-6348(1:5,000, 1938), H-6349(1:10,000, 1938 to 1942), and H-6350(1:20,000, 1938 to 1942). The information from these surveys was shown on Chart 348, so comparison was made with the chart under the following item.

P 6 of Review

M. COMPARISON WITH CHART 348:

A comparison of the 1954 survey with the preliminary review of Chart 348 follows:

Item 1. A least depth of 17 feet was found in this location.

18 41° 30.58', Long. 70° 40.67'

Item 2. A least depth of 21 feet was found at this position.

The charted shoal could have been scoured off by the swift currents. P 41° 30.57' X 70° 40.31'

Item 3. The reef actually shows awash at MLW and is verified with no change of position.

11 least depth of 16 ft about 150 meters N.W of 21 ft. Questionable on H-1833 Lat. 41° 30.76', Long. 70° 40.10'

The reef was not found at that spot. 2 and 3 foot soundings were found in the immediate vicinity within 15 meters SE and NE from the charted position respectively.

4 Lat. 41° 30.71', Long. 70° 40.09'

A 7 foot sounding was found in the place of the sunken rock shown.

Lat. 41° 30.68', Long. 70° 40.05' (See P 5 Review) disregard +.

Item 4. Flashing buoy # 5 was located within 15 meters of the 3 fathom curve. The scope of the anchor chain would allow the buoy to swing over a 16 or 17 foot sounding. There is also a 15 foot sounding 30 meters SSW of buoy # 5.

P 41° 30.92', X 70° 40.44'

32'

M. COMPARISON WITH CHART 348 (CONTINUED):

- Item 5. *from H-1833 in  $\phi 41^{\circ} 30.97'$ ,  $\lambda 70^{\circ} 40.21'$*   
 The 17 foot sounding shown on the chart did not show upon this survey. ~~The shoalest sounding found in this location was 25 feet.~~ *17 ft sdg about 15 meters north west on p.s. Move charted depth to location of 17 ft on P.S.*
- Item 6. The controlling depth in the marked channel was found to be 12 feet. *(SSE Devils Foot Island)*

Item 7.	Lat.	Long.	Previous	H-8170	Remarks
a.	$41^{\circ} 31.12'$	$70^{\circ} 41.16'$	10	12 ✓	12' Retained
b.	$41^{\circ} 31.07'$	$70^{\circ} 41.301$	10 <i>cut E (8p 1869) 1910</i>	15 ✓	10' Retained
c.	$41^{\circ} 31.11'$	$70^{\circ} 41.315$	10 "	14 ✓	10' Retained
d.	$41^{\circ} 31.112$	$70^{\circ} 41.312$	12 ✓	12 ✓	12' Retained
e.	$41^{\circ} 31.176$	$70^{\circ} 41.25$	12 (H-1833)	28 27	12' disapproved
f.	$41^{\circ} 31.204$	$70^{\circ} 41.3029$	11 <i>source not found.</i>	10 ✓	chart 10!

Item 8. 22 feet depths were the shoalest recorded at this position.  *$\phi 41^{\circ} 31.11'$ ,  $\lambda 70^{\circ} 41.41'$  Delete 9 ft - Discredited (H-8170 + C or E 1939)*

Item 9. A 10 foot sounding was found only 20 meters ~~NNE~~ *NE* of the 11 foot sounding shown.  *$\phi 41^{\circ} 31.41'$ ,  $\lambda 70^{\circ} 41.77'$*   
*Area adequately developed on P.S. Disregard 11, chart 10.*

Item 10. The 17 foot sounding was verified with no change of position.  *$\phi 41^{\circ} 31.65'$ ,  $\lambda 70^{\circ} 41.84'$*

Item 11. A 16 foot sounding was obtained in this position.  *$\phi 41^{\circ} 31.61'$ ,  $\lambda 70^{\circ} 42.00'$*

Item 12. The sunken rock and the 3 foot wanked soundings were not found. *Deleted from chart - 6 ft sdg on p.s. 4 depths for charting purpose  $\phi 41^{\circ} 31.31'$ ,  $\lambda 70^{\circ} 42.21'$*   
*eastern  $\lambda 70^{\circ} 42.21'$*

The five foot soundings were verified and the six foot depths (most westerly sounding shown on charted area) was verified.

Item 13. The 5 foot sounding was not found. A 12 foot sounding was the shoalest depth found. The second 5 foot sounding was not found. *See TP5 Review!*  
*An 8 foot sounding was the shoalest depth obtained.*  
*5 ft sdg from H-1833 (1887) transferred to p.s. (611 sdg 50 meters N.W. on p.s.)*

Item 14. The shoal soundings were not verified.  *$\phi 41^{\circ} 31.34'$ ,  $\lambda 70^{\circ} 41.94'$*   
*2 ft (H-1833) and 3 ft (H-6348) carried forward to p.s.*

Item 15. A 6 foot sounding was found in Lat.  $41^{\circ} 31.76'$ , Long.  $70^{\circ} 41.344'$  along with 8 and 7 foot soundings E and S of this position. *Location of 8 ft sdg as originally plotted H-2311 (1897-1905) is correct, and is in agreement with present survey depths.*

Item 16. There was no 10 foot depth found in Lat.  $41^{\circ} 31.88'$ , Long.  $70^{\circ} 41.23'$ . 60 meters southwestward there are 8 and 6 foot soundings. *Original plotting in agreement with p.s. depths of 8 ft*

Item 17. This 1 foot sounding could possibly be the rock 60 meters <sup>65</sup> ~~SW~~ <sup>WSW</sup> from Lat.  $41^{\circ} 31.86'$ , Long.  $70^{\circ} 40.78'$  that bares 1 foot at MLW. *Discredited by 12-13 ft. depths on H-8170. Not found on H-6348.*

Item 18. The 2 foot sounding and rock awash were verified with no change of position. Three rocks found in the area, *27, 28, 29 ed.*  
*eastern and 28, 29, 30 of rock mentioned*

*$\phi 41^{\circ} 31.75'$ ,  $70^{\circ} 40.72'$*

REVISIONS TO SURVEY DATA

1. The location of the 5 ft. sdg. is considered

indefinite, because the sdg. falls on a line whose location

was approximate. The 5 ft. sdg. was not carried forward to

Item 21 (cont.) The location of the 5 ft. sdg. is considered indefinite, because the sdg. falls on a line whose location was approximate. The 5 ft. sdg. was not carried forward to the present survey.

Item 24 (cont.) The 11 ft. sdg. plotted on H-6348 in  $\phi 41^{\circ}31.02'$ ,  $\lambda 70^{\circ}41.44'$  is out of position and actually falls about 40 meters to the eastward where comparable depths are found on the present survey.

M. COMPARISON WITH CHART 348 (CONTINUED):

- Item 19. a. The 6 (and 8) foot soundings ~~was not~~ <sup>Present depths, 7-8' in this area adequate for charting</sup> were verified.  $\phi 41^{\circ} 31.12'$ ,  $\lambda 70^{\circ} 41.95'$
- b. The 5, 4 and 6 1/2 foot soundings were verified and 2 foot  $\phi 41^{\circ} 30.98'$  soundings plus a submerged rock at 2 foot depth were found  $\lambda 70^{\circ} 41.98'$  only 35 meters west of the above position.   
 49 NW
- c. The 5 foot sounding at Lat.  $41^{\circ} 30.87'$ , Long.  $70^{\circ} 42.17'$  was not found in this position. 56 foot soundings were found only 10 meters north and 20 meters south of this position.   
 10. and a 6 ft sdg was found 6

Item 20. The sunken rock was not found. Depths of 3 feet were found at the off shore end of the pier.   
 see USNHP Report

Item 21. The 5 foot sounding was verified with no change of position.   
 from H-1833 (88) not found but a 6 ft sdg was found on the A.S. 10 meters in shore in Lat.  $41^{\circ} 30.71'$ , Long.  $70^{\circ} 42.09'$

- Item 22. a. The 4 foot sounding was verified and found to be a submerged rock at 7 feet.  $\phi 41^{\circ} 31.52'$ ,  $\lambda 70^{\circ} 41.38'$    
 55hh
- b. The 3 foot sounding was found to be 4 feet but a 3 foot sounding and a rock awash was found only 25 meters S of the given position. The 1 foot sounding at Lat.  $41^{\circ} 31.33'$ , Long.  $70^{\circ} 41.32'$  was not found; however, a number of submerged rocks in the position were found at depths of 2 1/2 feet.   
 63hh  $\phi 41^{\circ} 31.42'$ ,  $\lambda 70^{\circ} 41.36'$  from unknown source

Item 23. The 2 foot sounding was found as a submerged rock with a depth of 3.0 feet. (3 ft sdg also on H-6348) 2 ft sdg. carried forward.   
 (70hh) in  $\phi 41^{\circ} 31.03'$ ,  $\lambda 70^{\circ} 41.39'$  from H-1833

- Item 24. a. The 5 foot sounding at Hadleys Rock was not found. An 8 foot depth was the shoalest found. (3 ft sdg. on H-6348) 5th sdg. carried forward to H-2170.   
 in  $\phi 41^{\circ} 31.03'$ ,  $\lambda 70^{\circ} 41.38'$  from H-1833
- b. The 12 foot sounding was verified by 11 foot soundings only 20 meters SW of the charted position. ( $\phi 41^{\circ} 31.00'$ ,  $\lambda 70^{\circ} 41.41'$ )   
 from H-6348 in  $\phi 41^{\circ} 31.00'$ ,  $\lambda 70^{\circ} 41.41'$  and 10 ft were found
- c. The 11 foot sounding was not found. A depth of 26 feet was the shoalest sounding obtained at this location on p. 5.   
 (See note on opposite page)   
 26 believed to be 2 ft. error on original survey do not use

Item 25. a. The rocky area was not found. Rocky area erroneously charted.   
 from H-1833 (H-1833) 1850 (1889-91)   
 b. The submerged rock, 110 meters SW of Lat.  $41^{\circ} 31.03'$ , Long.  $70^{\circ} 41.05'$  could not be located. The shoalest depth obtained was 12 feet.   
 returned to 2nd ed. chart

Item 26. The 6 foot sounding was verified with no change of position.   
 well situated distance lead to

Item 27. The boulders, as shown on Pine Island were verified as charted.   
 152

Item 28. The most northerly sunken rock was located and found in 2 feet of water. The other two submerged rocks were not found.   
  $\phi 41^{\circ} 31.07'$ ,  $\lambda 70^{\circ} 41.04'$    
 The 10 submerged rock was found in 1862 (1735)  $\phi 41^{\circ} 31.18'$    
 Item 29. General agreement was made with the charted soundings on Red Ledge.   
 charted  $\phi 41^{\circ} 31.65'$ ,  $\lambda 70^{\circ} 42.29'$    
 3 rocks found (pos 89m in 1 water, pos 88m awash, pos 94hh in 2') all fall north of charted position with additional rocks awash (40 & 49k) at far East of ledge.

M. COMPARISON WITH CHART 348 (CONTINUED):

- Item 30. The rocks awash were verified and this area further developed.   
*vicinity of  $\phi 41^{\circ}31'30''$   $\lambda 70^{\circ}40.53'$  (Grassy I)*   
 The 3 foot sounding was <sup>not</sup> verified as shown. 4' found (overlay #7 w/w day) ✓   
 The 2 uncharted rocks awash were verified and located. ✓   
*JMLW*

Item 31.	Lat.	Long.	Previous	H-8170
	41° 31.30 ✓	70° 40.66 ✓	6 ✓	5 ✓
	41° 31.27 ✓	70° 40.62 ✓	9 ✓	7 ✓
	41° 31.24	70° 40.72	6 ✓	6 ✓
	41° 31.30	70° 40.70 (H-1833)	9 retain	12 - 20 meters <sup>SSW</sup>
	41° 31.28	70° 40.68	11 ✓	10 - 15 m. N. <sup># SW - Retain (9) x413</sup>

*72-73 WW \* awash*

- Item 32. The 5 foot sounding was verified with no change of position. ✓   
 *$\phi 41^{\circ}31.43'$   $\lambda 70^{\circ}40.26'$  (Bp 33952, 1939 C of E)*   
~~as a 6-ft sounding on P.S.~~

- Item 33. The rocks were not found. The granite wall enclosing the Fish and Wildlife Service small boat basin is stepped out.   
 These rocks as shown could be the steps at the base of the granite wall, or a granite block that has fallen out of the wall.   
 The least depth obtained was 17 feet on the SW corner and 16 feet along the face of the wall.   
*See 17-6-77*

- Item 34. A rock <sup>covered 1 ft</sup> was located only 10 meters <sup>west</sup> of the object, <sup>undetermined</sup> 20m-21m   
~~There are 2 more rocks in the immediate vicinity of the object and a rock awash 33 to NN westward~~   
 *$\phi 41^{\circ}31.59'$   $\lambda 70^{\circ}40.22'$*

- Item 35. The 1 foot sounding was found, <sup>not</sup> as a 2 foot shoal, found 25 meters southward.   
~~1 ft RK carried forward from H-1833 to P.S.~~   
 The 5 foot sounding was not found in the charted position but was about 40 meters <sup>SW</sup> and another 5 foot sounding 40 meters <sup>SW</sup>   
 The 6 foot sounding was verified.   
 *$\phi 41^{\circ}30.83'$   $\lambda 70^{\circ}40.45'$   $\phi 41^{\circ}30.81'$   $\lambda 70^{\circ}40.39'$*    
*15 ft 50 50 disprived*

- Item 36. The charted 10 foot sounding was not found in the position charted but <sup>15 ft</sup> found about 15 meters NW of the position.   
~~10 ft sdg. brought forward to H-8170~~   
 *$\phi 41^{\circ}31.50'$   $\lambda 70^{\circ}40.57'$*

- Item 37. The 10 foot sounding could not be verified. The shoalest sounding found was 15 feet.   
~~by present survey~~   
*Delete from chart. Discard data.  $\phi 41^{\circ}30.86'$   $\lambda 70^{\circ}40.49'$   $\lambda 70^{\circ}40.49'$*

- Item 38. The 5 foot sounding was verified. 3 1/2 foot soundings were found only 15 meters NE and 25 meters SW of the position. ✓   
 *$\phi 41^{\circ}30.55'$   $\lambda 70^{\circ}40.74'$*    
 The 1/2 foot reef was not located. There is a rock awash only 45 meters <sup>plotted</sup> N of the charted reef, and a zero <sup>sdg.</sup> about 12 meters south   
 *$\phi 41^{\circ}30.53'$   $\lambda 70^{\circ}40.73'$  Present information adequate*

- Item 39. The 5 foot shoal on Coffin rock was not found. The shoalest depth at this position was 12 feet. <sup>but</sup> There is a 5 foot shoal 100 meters <sup>SW</sup> of the position. This shoal is evidently shifting SE as the coffin rock flashing buoy has been moved to the SE in deeper depths.   
 Drought forward from H-6348 6 ft Rock   
 *$\phi 40^{\circ}30.72'$   $\lambda 70^{\circ}39.77'$*

charted 6 ft shown on H-6348

M. COMPARISON WITH CHART 348 (CONTINUED):

Item 40. There is a submerged rock in 13 feet of water at this position. It was seen only once and attempts to get back over the position failed. 11 ft. from H-1833 carried forward.  
φ 41° 30.63'  
λ 70° 39.80'

Item 41. The 6<sup>1</sup> foot sounding <sup>was</sup> ~~could not be found~~. The shoalest depth located <sup>about 5 meters NE of this</sup> in this exact position was 2 feet. There is a 1 foot sounding only 30 meters ~~NE~~ of the given position and 2, 3, 4, and 5 feet sounding in the immediate vicinity northeastward.  
φ 41° 30.84'  
λ 70° 39.44'

Item 42. The sunken rock was found and verified as a rock submerged in 8 feet of water. There is a rock awash approximately 3530 meters north <sup>Nest</sup> of the submerged rock. Also clear to see  
φ 41° 30.92'  
λ 70° 39.52'

ADDITIONAL REVIEW:

see 2955

43. The 3 foot sounding charted in Lat. 41° 31.08', Long. 70° 39.92' could (detached) not be found. A least depth of 6 feet was obtained. 3 ft sdg on H-6348 (1938) and H-1833 (1987), 549. Vols. of H-8170 do not show fixes or time spent investigating shoal. 3 ft. sdg. carried forward to H-8170.

44. The 9, 16, and 11 foot soundings charted in Lat. 41° 30.86', Long. 70° 40.09 were investigated and the least depth found was 14 feet. 9 ft. sdg. from H-6348 in φ 41° 30.85' λ 70° 40.03' carried forward to p. 5.

45. The area circled in Lat. 41° 31.59', Long. 70° 40.37' was investigated. The dolphin was found to be a mooring used to secure a floating addition to the pier shown.

N. DANGERS AND SHOALS:

No new dangers or shoals were discovered. one dolphin mooring.

O. COAST PILOT INFORMATION:

Changes to Coast Pilot Information is contained in APPENDIX B. A separate copy is included for the Coast Pilot Section.

P. AIDS TO NAVIGATION:

No new fixed aids to navigation were located. (~~Buoy positions remained unchanged.~~ Review TP6B) The location of all buoys are included and described in sounding volume # 1. Coffin Rock Buoy FIG-1 pos 22 E.

The front and rear ranges for the approach to Great Harbor were destroyed in the hurricane on 31 August 1954. It was impossible to determine if these ranges would be replaced in their original positions. Subsequent aerial photos show same location.

The fixed bridge connecting VECKATIMEST ISLAND and NONAMESSET ISLAND was washed out during the hurricane on 31 August 1954. It is not known if the bridge will be rebuilt.

Q. LANDMARKS FOR CHARTS:

No new landmarks are recommended.

R. GEOGRAPHIC NAMES:

No new geographic names were discovered. ✓

S. SILTED AREAS:

There were no silted areas found. After hurricanes CAROL and EDNA, check lines were run over cross sections of the entire survey. In Little Harbor at the south face of the Coast Guard wharf it was found that one small area was scoured out. This area may be refilled eventually. Development was done to show the changes and to present a true picture of the harbor for charting. ✓

Respectfully submitted,

*C. W. Tupper*

C. W. Tupper  
Ensign, USC&GS

APPROVED AND FORWARDED

*F. B. Quinn*

F. B. Quinn  
Commander, USC&GS  
Chief of Party

ATTACHMENTS

- APPENDIX A - Velocity Corrections
- B - Floating Aids to Navigation
- C - Statistics
- D - Tide Note
- E - Coast Pilot Information
- F - Approval Sheet

FLOATING AIDS TO NAVIGATION  
H-8170

1955 LIGHT LIST

BUOY	LAT.	LONG.	APPROX. DEPTH	All dates of 6/6/54 are a date Assumed by Processing Office. <i>Not Confirmed</i>	
				POS. NO.	DATE
LITTLE HARBOR Coffin Rk. Ltd. Buoy 1	41-30.71 <sup>6</sup> ✓	70-39.19 <sup>6</sup>	18 <sup>6</sup>	22E 1J	6/6/54 ✓ 6/30/54
Coffin Rock Chan. Buoy 2	41-30.76 ✓	70-39.52 ✓	23 ✓	21E	6/6/54 ✓
Coffin Rock Chan. Ltd. Buoy 4	41-30.88 <sup>9</sup> ✓	70-39.80 ✓	18 <sup>9</sup>	23E 6xx	6/6/56 9/20/56
Coffin Rock Chan. Ltd. Buoy 6	41-31.02 ✓	70-39.93 ✓	10 ✓	25E 7xx	6/6/56 9/20/56
Coffin Rk. Buoy 3	41-31.01 ✓	70-39.97 ✓	12 ✓	26E	6/6/56
Coffin Rk. Buoy 5	41-31.14 ✓	70-40.00 ✓	18 <sup>7</sup>	24E	6/6/56
GREAT HARBOR Chan. Entr. Ltd. Bell Buoy 2	41-30.56 ✓	70-40.15 ✓	24 ✓	19E	6/6/56
Chan. Entr. Gong Buoy 1	41-30.56 ✓	70-40.24 <sup>9</sup>	23 ✓	18E	6/6/56
Chan. Buoy 4	41-30.65 <sup>7</sup> ✓	70-40.16 ✓	18 <sup>20</sup>	17E	6/6/56
<i>Lighted</i> Chan. Buoy 5	41-30.91 <sup>2</sup> ✓	70-40.34 ✓	20 <sup>8</sup>	16E	6/6/56
Chan. Buoy 6	41- <del>31.01</del> <sup>30.97</sup> ✓	70-40.18 <sup>4</sup>	9 <sup>12</sup>	27E	6/6/56
<i>Great Ledge Chan Buoy 2H</i> <del>Chan. Buoy 8</del>	41-31.25 ✓	70-40.35 ✓	17 <sup>0</sup>	28E <i>(propose name from Lt.)</i>	6/6/56
Chan. Buoy 9	41-31.38 ✓	70-40.53 ✓	42 ✓	15E	6/6/56
Chan. Buoy 10	41-31.46 ✓	70-40.53 ✓	25 <sup>18</sup>	14E	6/6/56
WOODS HOLE PASSAGE Grassy I. Ledge Buoy 1	41-31.23 ✓	70-40.55 ✓	14 ✓	12E	6/6/56
Grassy I. Ledge Buoy 2	41-31.32 <sup>27</sup> ✓	70-40.56 ✓	13 <sup>6</sup>	13E	6/6/56
Broadway Buoy 2	41-31.11 ✓	70-40.60 ✓	15 <sup>7</sup>	11E	6/6/56
Broadway Buoy 3	41-31.16 ✓	70-40.75 ✓	18 <sup>19</sup>	4E	6/6/56
Broadway Buoy 6	41-31.16 ✓	70-41.11 ✓	22 ✓	3E 58ww	6/6/56 9/9/56
Broadway Buoy 8	41-31.22 ✓	70-41.30 ✓	10 <sup>2</sup>	2E 59ww	6/6/56 9/9/56

## CONTINUATION

<u>BUOY</u>	<u>LAT.</u>	<u>LONG.</u>	<u>APPROX DEPTH</u>	<u>POS. NO.</u>	<u>DATE</u>
WOODS HOLE PASSAGE					
Broadway Buoy 10	41-31.23 ✓	70-41.49 ✓	20 <sup>19</sup>	1E 60ww 13r	6/6/56 <u>9/9/56</u> 7/16/56
Broadway Buoy 11	41-31.44 ✓	70-41.71 ✓	19 <sup>17</sup>	7E ✓	6/6/56
Broadway Ltd. Buoy 13	41-31.67 ✓	70-41.86 ✓	23 <sup>0</sup>	5E, 14C	6/6/56
Broadway Bell Buoy 13	41-31.65 ✓	70-41.84 <sup>6</sup>	20 <sup>3</sup>	6E ✓	6/6/56
HADLEY HARBOR					
Hadley Rk. Buoy	41-31.05 ✓	70-41.40 ✓	8 <sup>13</sup>	10E	6/6/56
Hadley Rk. Buoy 1	41-30.89 ✓	70-41.87 ✓	10 <sup>8</sup>	8E	6/6/56
Hadley Rk. Buoy 2	41-30.92 ✓	70-41.89 ✓	11 ✓	9E	6/6/56
NANTUCKET SOUND					
Nobska Point Ledge Buoy 22	41-31.09 ✓	70-38.98 ✓	26 ✓	20E 9lu	6/6/56 <u>7/22/56</u> ✓

NOTE: This list was compiled in the Norfolk Processing Office from the 1955 Light List.

The Field Party took the buoy names from the 1954 Light List and the numbers from the 1955 Light list.

## VINEYARD SOUND

Nobska Point Ltd. Buoy 18	41-30.30 ✓	70-38.65 ✓	-	62U	7/22/54 ✓
Nobska Point Bell	41-30.33 ✓	70-38.65 ✓	-	6lu	7/22/54 ✓

Field party used 1954 Light List which was issued in April 1954 & corrected to 1 January 1954. This 1954 Light List values agree with notes in Vols. The verifier had to descriptions in the Vols.

PROCESSING OFFICE  
LIST OF SIGNALS  
H-8170

TRIANGULATION STATIONS

BLACK BLACK BEACON, 1938-48  
 MES CHURCH OF MESSIAHM STEEPLE, 1938-48  
 FISH FISH COMMISSION CUPOLA, 1887-1948  
 VANE HOUSE, WEATHER VANE, 1938-48  
 NOB NOBSKA POINT LIGHTHOUSE, 1904-48  
 RED RED BEACON, 1938-48  
 WOO WOODS HOLE, OCEANOGRAPHIC INSTITUTE, DOME, 1932-48  
 TOW WOODS HOLE, YELLOW STONE TOWER, 1928-48

DM - DP  
for this in  
DR T-6621

TOPOGRAPHIC STATIONS

Reviewed Manuscript  
SOURCE T-11336

Ack	All	Arm	Ate	Bak	Ball	Bar	Bat	Bath	Bel	✓
Eig	Bil	Bot	*Box	Boya	Bric	Bun	Cat	C.G.	Chim	XXXX
Com	Con	Conkr	Cot	Cup	*Cut	Day	Der	Dic	Doc	
Dock	Dog	Dol	Drap	End	Fee	Fen	Fib	Fil	Flag	
F.R.	Gal	Gay	*Gray	Ham	Hap	High	Hog	Hot	How	
Jay*	Jed	Jet	Joy	Lad	Las	Let	Lob	Long	Lone	
Mal	Mar	**Mat	Mik	Mon	Mud	New	Obi	Off	Pat	
Peak	**Pec	Peg	Pen	Pil	Radio	Rat	Rim	Rip	Rock	
R.R.	Sad	Set	Sin	Sop	Stack	Stan	Tap	Tar	Ted	
Tel	Ten	T.G.P	Tip	Tom	Top	Wat, R	Wes	White	Yel	

PLANIMETRIC FEATURES

SOURCE T-11336

Lew Pump

HYDROGRAPHIC STATIONS

*Hydro stations agree with photo plot, revised to red.*

Ant	Vol. 6,	pg. 51,52	** Out	Vol. 16,	pg. 35
Bag	" 10,	pg. 67	Pol	" 1,	" 7
Bush	" 8,	" 48,56	*Pun	" 17,	pg. 24,25
Chat *	" 16,	" 35	Sap	" 17,	pg. 56,57
Fire	" 1,	" 7		" 18,	" 67,68
Flo	" 20,	" 66	Slim	" 11,	" 18,19,24,25
Fob	" 4,	" 2	Sou	" 17,	" 24,25
Fog	" 6,	" 51,52	Stic	" 13,	" 47
Gul	" 6,	" 56		" 17,	" 24,25
Hill	" 1,	" 5,6	*Tic	" 8,	" 32
Lam	" 18,	" 67,68		" 12,	" 30
	" 20,	" 24		" 17,	" 24,25, 72
Lip	" 8,	" 11	Wood	" 3,	" 29
Mid*	" 17,	" 24,25			
NilR	" 17,	" 56			
Nor*	" 17,	" 25			

R Revised positions  
 \* Uncertainty of position  
 \*\* Poorly determined, arbitrarily plotted

STATISTICS  
H-8170

<u>DAY LTR.</u>	<u>VOL.</u>	<u>NO. POS.</u>	<u>STAT. MI.</u>	<u>H.L. SDGS.</u>	<u>DATE</u>
SHIP PARKER (RED)					
A	1	49	7.4	0	7 June 1954
B	1	48	7.6	0	8 " "
C	1	28	4.3	0	9 " "
D	1	45	10.9	0	10 " "
E*	1	28	0.0	0	* 6 " "
* Assigned by Processing Office			Assumed by Processing Office		
LAUNCH 168 (RED)					
a	2	83	6.2	0	14 " "
b	2	85	9.2	0	15 " "
c	2&3	23	0.9	0	16 " "
d	3	96	7.1	0	22 " "
e	3	59	5.7	0	23 " "
f	4	44	4.0	0	24 " "
g	4	112	11.8	0	28 " "
h	5	105	11.5	0	29 " "
j	5	67	6.2	0	30 " "
k	6	113	10.5	0	1 July
l	6	21	0.6	0	2 " "
m	6&7	130	9.8	0	12 " "
n	7	58	4.0	0	13 " "
p	7&8	56	7.1	0	14 " "
q	8	65	10.3	0	15 " "
r	8&9	127	17.8	0	16 " "
s	9	47	6.9	0	19 " "
t	9&10	110	14.7	0	20 " "
u	10	108	14.4	0	22 " "
v	11	125	15.5	0	23 " "
w	11&12	33	2.8	0	26 " "
x	12	96	11.7	0	30 " "
y	13	129	16.1	0	2 Aug.
z	14	66	6.9	0	3 " "
aa	14	28	2.4	0	4 " "
bb	14&15	180	18.6	0	5 " "
cc	15&16	157	13.8	0	6 " "
dd	16	64	6.7	0	9 " "
ee	16&17	93	12.3	0	10 " "
ff	17	82	10.9	0	11 " "
gg	17	21	1.4	0	12 " "
hh	17&18	100	9.2	0	13 " "
jj	18&19	135	12.7	0	16 " "
kk	19	151	11.8	0	17 " "
ll	19&20	85	10.1	0	18 " "
mm	20	95	7.2	0	19 " "
nn	20&21	71	6.1	0	20 " "
pp	21&22	203	79.6	0	23 " "
qq	22	115	9.9	0	24 " "
rr	22	6	0.2	0	25 " "
ss	22&23	170	11.0	2	26 " "
tt	23&24	165	11.2	1	27 " "

continued

STATISTICS (con't.)

<u>DAY LTR.</u>	<u>VOL.</u>	<u>NO. POS.</u>	<u>STAT. MI.</u>	<u>H.L. SDGS.</u>	<u>DATE</u>
uu 8/30	24	170	13.4	0	30 Aug. 1954
vv 9/8	24&25	71	6.0	2	8 Sept. 1954
ww 9/9	25	79	5.5	6	9 " "
xx 9/20	25	57	5.5	0	20 " "
yy	25&26	153	12.2	10	21 " "
zz	26&27	158	19.5	11	24 " "
ba	27	100	0.0	98	8 Oct. "

GRAND TOTALS 4922 555.3 130

$$\begin{array}{r}
 4922 \\
 + 12 \\
 \hline
 4934 \\
 + 12 \\
 \hline
 5046
 \end{array}$$

$$\begin{array}{r}
 202 \\
 + 50 \\
 \hline
 252
 \end{array}$$

*See Processing Office List.*

<u>LIST OF SIGNALS</u>	<u>ORIGIN</u>	<u>LIST OF SIGNALS</u>	<u>ORIGIN</u>
ACK	VOLUME 1	FLO	VOLUME 20
ALL	*	FOB	" 4
ANT	VOLUME 6	FOG	" 6
ARM	" 1	F. R. FRONT RANGE LIGHT, 1938	
ATE	T-11336	GAL	VOLUME 10
BAG	VOLUME 10	GAY	T-11336
BAK	*	GRAY	*
BALL	VOLUME 17	HAM	VOLUME 17
BAR	T-11336	HAP	" 21
BAT	VOLUME 18	HIGH	" 5
BATH	T-11336	HILL	" 1
BEL	VOLUME 6	HOT	T-11336
BIG	*	HOW	VOLUME 5
BIL	VOLUME 10	JAY	" 17
BLACK	BLACK BEACON, 1938	JED	" 17
BOT	VOLUME 17	JET	*
BOX	" 8	JOY	VOLUME 20
BOY	" 11	LAD	*
BRIG	T-6622	LAS	VOLUME 6
BUN	T-11336	LET	" 17
BUSH	VOLUME 8	LEW	*
CAT	*	LIP	VOLUME 8
C. G.	T-11336	LOB	" 6
CHAT	VOLUME 16	LONE	T-11336
CHIM	T-11336	LONG	*
COM	VOLUME 1	MAL	T-11336
CON	T-5744	MAR	VOLUME 1
CONK	*	MAT	" 9
GOT	T-11336	MES	CHURCH OF MESSIAH STEEPLE, 1938
CUP	VOLUME 1	MID	VOLUME 17
CUT	" 9	MIK	" 17
DAY	" 9	MON	" 1
DER	" 17	MUD	T-11336
DIC	*	NEW	VOLUME 4
DOC	T-11336	NIL	T-5744
DOCK	VOLUME 2	NOB	NOBSKA POINT LIGHTHOUSE, 1904
DOG	" 12	NOR	VOLUME 17
DOL	T-11336	OBI	" 17
DRAP	T-6622	OFF	" 1
END	*	OUT	" 16
FEE	T-11336	PAT	T-11336
FEN	SEE BOAT SHEET	PEAK	T-6622
FIB	*	PEG	VOLUME 9
FIL	VOLUME 17	PEN	" 1
FIRE	" 1	PIL	" 12
FISH	FISH COMM. CUPOLA, 1887	FILE	" 2
FLAG	JUNIPER FLAG POLE, 1938	POL	" 1

\* SIGNALS SPOTTED ON BOAT SHEET BY USE OF MANUSCRIPT T-11336 IN CONNECTION WITH PHOTOGRAPHS SUPPLIED.

40 Stations were accepted from T-11336 Preliminary Manuscript and carried in Red on the boat sheet.

45 Stations were applied to Boat sheet in Blue

LIST OF SIGNALSORIGIN

PUMP	*
PUN	VOLUME 17
RADIO	RADIO TOWER, 1938
RAT	VOLUME 20
RED	RED BEACON, 1938
RIM	*
RIP	*
ROCK	*
R. R.	T-5744
SAD	T-11336 -
SET	"
SIN	VOLUME 14
SLIM	" 11
SOP	" 17
SOU	" 17
STACK	" 1
STIC	" 13

LIST OF SIGNALSORIGIN

TAP	VOLUME 17
TAR	SERIES OF CUTS " 17
TED	" 8
TEL	" 4
TEN	T-11336
T. G.	VOLUME 1
TIC	" 8 & 10
TIP	" 6
TOM	" 9
TOP	" 6 & 7
TCW	WOODS HOLE YELLOW STONE TOWER, 1938
VANE	HOUSE, WEATHER VANE, 1938
WAT	VOLUME 10
WES	T-11336
WHITE	VOLUME 1
WOOD	" 3
YEL	T-11336

*WOO: WOODS HOLE OCEANOGRAPHIC  
INSTITUTE DOME, 1932*

\* SIGNALS SPOTTED ON BOAT SHEET BY USE OF MANUSCRIPT T-11336 IN CONNECTION WITH PHOTOGRAPHS SUPPLIED.

APPENDIX A

VELOCITY CORRECTIONS

14 June to 4 August 1954  
and

GROUP I 26 August to 24 September 1954 808 RECORDER 116-S

Correction (ft)	<u>A - Range</u>		Correction (ft)	<u>B - Range</u>	
	From (ft)	To (ft)		From (ft)	To (ft)
0.0	0.0	3.5	(+) 1.8	35.0	53.0
(+)0.2	3.6	28.5	(+) 2.0	53.1	88.0
0.0	28.6	49.5	(+) 2.5	88.1	90.0
(+)0.2	49.6	55.0			

GROUP II 5 August to 24 August 1954 808 RECORDER 116-S

Correction (ft)	<u>A - Range</u>		Correction (ft)	<u>B - Range</u>	
	From (ft)	To (ft)		From (ft)	To (ft)
(+)0.4	1.5	2.5	(+) 1.8	35.0	41.5
(+)0.6	2.6	12.5	(+) 2.0	41.6	84.0
(+)0.4	12.6	19.0	(+) 2.5	84.1	90.0
(+)0.2	19.1	28.0			
0.0	28.1	38.5			
(+)0.2	38.6	55.0			

NOTE:- Velocity corrections for GROUP I and GROUP II apply to work performed by LAUNCH NO. 168.

## APPENDIX A

## VELOCITY CORRECTIONS (CONTINUED)

16 June 1954

SHIP PARKER

GROUP III

808 RECORDER 117-S

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Correction (ft)	<u>A - Range</u>		Correction (ft)	<u>B - Range</u>	
	From (ft)	To (ft)		From (ft)	To (ft)
(+)0.2	5.0	14.0	(-) 1.0	35.0	45.0
(+)0.4	14.0	24.0	(-) 0.8	45.1	55.0
(+)0.6	24.1	35.0	(-) 0.6	55.1	65.0
(+)0.8	35.1	45.0	(-) 0.5	65.1	79.0
(+)1.0	45.1	55.0	0.0	79.1	90.0

APPENDIX D

TIDAL NOTE FOR SURVEY H - 8170

Tidal data for reduction of soundings was obtained from two portable automatic tide gages and one Standard Automatic tide gage, the locations of which are as follows:

STANDARD AUTOMATIC GAGE, WOODS HOLE, MASS.	Lat. 41° 31.5 N ✓
	Long. 70° 40.4 W
PORTABLE AUTOMATIC GAGE, LITTLE HARBOR	Lat. 41° 31.2 N ✓
	Long. 70° 39.9 W
PORTABLE AUTOMATIC GAGE, UNCATENA ISLAND	Lat. 41° 30.9 N ✓
	Long. 70° 42.2 W

The mean low water datum on the tide staffs are as follows: (figures furnished by the Washington Office)

WOODS HOLE OCEANOGRAPHIC INSTITUTION	5.2 7
LITTLE HARBOR	2.4
UNCATENA ISLAND	1.3

No corrections were made to time or height in the preparation of reducers. The area covered by each tide gage is fully described in this report under item D. TIDE AND CURRENT STATIONS and is also defined on the attached Chart No. 348.

APPENDIX E  
COAST PILOT - ATLANTIC COAST  
SECTION B - CAPE COD TO SANDY HOOK  
FIFTH (1950) EDITION

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Page 169 - lines 21 - 23; read:

Nonamesset Island Shoals lighted buoy 5. Vessels desiring to proceed to the anchorage in Great Harbor continue on the range until past PARKER FLATS buoy 8, thence steer north-northwestward, passing eastward of the Grassy Island Ledge buoy 9 and about ...

Line 35; read:

Shoal buoy 11, and about 75 feet from Timmy Point Shoal lighted buoy 13.

Line 38; read:

End of the Fish and Wildlife wharf ahead until abeam with PARKER FLATS buoy 8. If...

Page 171 - line 3; read:

Frequently on the wharf.

Line 4; strike out.

APPENDIX F  
APPROVAL SHEET

All records for this survey have been examined by me and are approved.  
The boat sheet was inspected by me daily.

The fathometer did not give the desirable results, but the crossings and depth curves indicate satisfactory accuracy. No improvements could be made under existing circumstances.

The progress was greatly delayed due to a number of factors which are discussed under item B. SURVEY LIMITS AND DATES. Conclusions are that the shallow draft aluminum launch is not the type of hydrographic launch for use in the swift currents and rough water that were encountered on this project.

This survey is considered adequate for the purpose intended, *namely*  
*complete revision of Chart 348.*



F. B. Quinn  
Chief of Party

ADDENDUM  
To Accompany

HYDROGRAPHIC SURVEY H-8170 (Field No. Par-05154)

GENERAL

While this survey appears to be fairly complete and generally adequate, it was presented in such a manner that numerous hours of extra work were required to process the records and plot the smooth sheet. ✓

CONTROL

This survey, in its original form, had approximately <sup>45</sup>~~85~~ hydrographic stations located by extensive sextant triangulation. After several separate attempts to plot this control, it was determined that other methods would have to be used to obtain adequate station locations. Fortunately, most of the points chosen for hydrographic stations were natural objects that could be spotted on air-photos. ✓ The writer, working with a photogrammetrist in the Washington Office, was able to identify and locate enough of these natural objects to plot the remaining sextant locations with a reasonable degree of accuracy. [The station points, circled in green ink on the accompanying blackline impression of T-11336, were used except where blue circles appear on the smooth sheet.]

There are no known discrepancies in signal locations, and it is believed that minor jumps in course and time may be attributed to the use of a very shallow draft launch in an area of strong and conflicting currents. Excessive tide jumps were noted occasionally when changing from one gage to another, and it is believed that sounding agreement could be improved by a careful review of tide areas and corrections before the soundings are inked.

See  
P7  
Re-  
view

SOUNDINGS

The soundings checked fairly well considering the irregular character of the bottom in this area. All soundings were reduced with a template and this resulted in a complete re-scaling of the fathograms in the Processing Office.

Almost all types of faulty fathometer operation were encountered. This includes, lack of sufficient gain, excessive gain, burnt needles, etc. Because of questionable fathometer operation in this area of reefs and extensive marine growth fathogram interpretation was, in many instances, extremely doubtful. It is recommended that critical areas and doubtful indications be carefully checked during verification.

see P7 official Re-view

OVERLAYS

All hydrography, done after the hurricane of ~~31 Aug.~~ and 11 Sept. 1954, is being submitted on overlays numbers 7 and 8. A comparison between these soundings and the earlier hydrography shows little or no scouring occurred during these storms.

EDNA, applied to smooth by processing

Overlay no. 7 shows the smooth plot of soundings on detached positions 15 thru 100 ba day

Overlay no. 8 shows sounding between positions as follows: 1 thru 57 xx day; 1 thru 73 and 96 thru 163 yy day; 1 thru 169 zz day.

In order to avoid undue congestion on the smooth sheet, positions were smooth plotted on overlays as follows:

Overlay no. 1	-	Positions 100 thru 137	uu day	8 sept
" No. 2	-	" 69 "	118 cc day	6 Aug
" no. 3	-	" 1 "	57 ww day	9 Sept
" no. 4	-	" 19 "	30 tt day	
" no. 5	-	" 111 "	120 tt day	27 Aug
" no. 6	-	" 31 "	106 tt day	
		121 "	137 tt day	

after Canal after Canal

Use full stgs & positions transferred to smooth sheet

SOUNDINGS AROUND PIERS

Pier diagrams and soundings, in the vicinity of Woods Hole, are being submitted on an overlay as the descriptive report was not clear as to which piers were destroyed during the hurricanes of 1954. Recent air-photos should clarify this situation. *Shown as inserts on H 8170.*

CHART COMPARISONS

The following soundings were not mentioned in the body of the descriptive report and were found to <sup>be</sup> shoaler than those shown on chart 348.

	<u>CHART</u>	<u>SMOOTH SHEET</u>
Lat. 41-31.15 Long. 70-41.63	17'	15' & 16' slightly north ✓
Lat. 41-31.70 Long. 71-41.72	16'	13', 14' & 15' this area
Lat. 41-31.74 Long. 70-41.44	16'	14' (13' 50 meters SSE) ✓
Lat. 41-31.18 Long. 70-39.15	-	✓ 4' rock (pos. 33v) ✓
Lat. 41-30.45 Long. 70-40.63	-	11' (47 to 48 m) possible / stray came ✓
Lat. 41-30.58 Long. 70-40.06	-	13' (52 to 53b) ✓

In addition 5 tracing paper overlays, showing critical soundings and preliminary review items along with their position numbers, are being submitted for the convenience of the verifiers. ✓

Norfolk, Va.  
14 Sept. 1956

Respectfully submitted,

*Hugh L. Proffitt*  
Hugh L. Proffitt  
Cartographer.

W.O.

Washington Office

VELOCITY CORRECTION REPORT

H- 8170  
PAR- 05154

PROJECT CS - 371

WOODS HOLE, MASSACHUSETTS

SHIP PARKER and U. S. C & G. S. LAUNCH 168

F. B. QUINN, COMMANDING

24 MAY to 24 SEPTEMBER

1954 FIELD SEASON

## FATHOMETER CORRECTIONS

Ship PARKER and U. S. C & G. S. Launch No. 168

Hydrographic Sheet PAR - 05154: Reg. No. H - 8170

PROJECT CS - 371

WOODS HOLE, MASSACHUSETTS

F. B. QUINN, CHIEF OF PARTY

### DATES OF SURVEY:

24 May through 24 September 1954.

### APPARATUS:

808 type depth recorders Nos. 117-S and 116-S were used during the survey. No. 117-S was used aboard the Ship PARKER and No. 116-S was used entirely aboard Launch 168.

Ship PARKER: The ship was used only during the first four days of the season. 808 type depth recorder No. 117-S was used the entire four days with its transducers in oscillator wells located on the port side of the motor-generator room bilges. The check bar is a 3" x 1 1/4" brass T-beam, 16' long with a 3/16" x 10" x 6' plate set 17" off center on the T-beam support to place the plate directly beneath the transducer units. The 100' lead lines were calibrated in 10' intervals and were standard, ie - Sampson tiller rope with bronze center.

Launch 168: After the ship completed the first four days of hydrography the launch was used for the remainder of the season. An 808 type depth recorder No. 116-S was used entirely aboard launch 168. Transducer units were located just aft of the amidships line, flush with the hull, one on each side of the keel and each setting in individual oscillator wells. Both units were kept covered with water while in use. On 20 July after noting a slight degree of electrolytic action on the hull beneath the units, each well was cleaned thoroughly and filled with castor oil. Castor oil was used the remainder of the season. Considerable fathometer trouble was experienced during the beginning of the season. Some methods for correction were: insulating the top and sides of the wells with rubber, exerting pressure on top of the units, separating the power cables from the units to the fathometer, and placing considerable ballast in the forward anchor compartment and on the stern. Combination of these attempts resulted in better returns.

The check bar used was a 3/16" steel plate 8" x 6'. The frame being suspended by leadlines attached by harness snaps to 12" long, rigidly fixed rods set perpendicular to the plane of the check bar plate and having an eye in the upper end. This enabled the check bar plate to be suspended horizontally beneath the transducer units with more stability even in moderate currents. The bar lines used were standard, ie - Sampson tiller rope with bronze center, and were marked in 5' intervals to 90'.

## FIELD PROCEDURES:

All bar check lines on the ship and launch were compared with a standard tape three times during the season. The error in every case was negligible and lines were used as marked.

Fathometer speed checks were made at intervals during the field season by watch comparison. Speed checks on the foot scale were made and evaluated against a standard rate of paper travel of 8" in 4 minutes.

Bar checks were taken in suitable depths when the wind and current conditions permitted. These results are recorded in the sounding volumes and tabulated in this report.

Phase corrections for "A - B" ranges on launch 168, Fathometer No. 116-S, were determined by bar check comparative readings at 45'. An initial set of 1.0' was used during period 6 June through 24 June 1954, 0.0' being used for initial set during the remainder of the season. (+)1.0' was added to all bar checks during the period 6 June through 24 June so values could be meaned with those obtained when initial was 0.0'. To correct this, an index correction of (-)1.0' was applied in the sounding volumes during this period.

Phase corrections for "A - B" ranges on the ship, Fathometer No. 117-S, were determined by bar check comparative readings at 40'. An initial set of 4.0' was used on all ship work.

## OFFICE DETERMINATION OF VELOCITY CORRECTIONS:

Launch 168. All bar checks were tabulated, grouped into two groups and corrections for each group meaned. These corrections were reduced to an A range plot by algebraic deduction of the A - B range phase correction and plotted on attached curve. Velocity curves were extrapolated from 65 feet, the deepest bar check recorded, to 90 feet. Velocity corrections from 0.0 to 90 feet were obtained from the curves and tabulated as shown.

Ship PARKER. Only one bar check was taken on the ship. The corrections were reduced to an A range plot by algebraic deduction of the A - B range phase correction and plotted on the attached curve. The velocity curve was extrapolated from 60 feet to 90 feet. Velocity corrections from 0.0 to 90 feet were obtained from the curve and tabulated as shown.

In both cases phase corrections were obtained as stated and also tabulated. Index corrections are entered in the sounding volumes for any variation of the initial set.

Settlement and squat were not considered in corrections to soundings.

CONCLUSION:

All velocity tabulations, curves, and corrections are included in the back of this report.

Respectfully submitted,

*Clifford W. Tupper*

Clifford W. Tupper  
Ensign, USC&GS

APPROVED AND FORWARDED:

*F. B. Quinn*

F. B. Quinn  
Commander, USC&GS  
Chief of Party

See Field Procedure Tathometer Corr. this D.P.:

Illustration of Inv. Supper Inverse Bar check Correction methods.

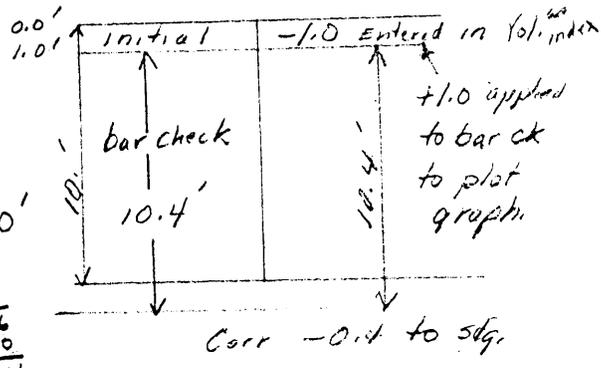
F. E. Gentry  
 Chief of Party  
 U.S. Geological Survey

a day June 14

Initial set = 1.0 ft  
 reading at true 10 ft depth = 10.4  
 diff 0.4 ft a - 0.4 Corr. @ 10'

method of computation.

	+1.0
b.c.	-0.4
graph	+0.6
index	-1.0
final	-0.4



Initial set at 1.0

- ① subtract bar check value from 1.0 setting (right)
- ② remainder is inverse correction value.
- ③ This value measured and plotted as base for Vol. Corr. Curve
- ④ Then a -1.0 ft index value was entered in Volume to compensate for the arbitrary application of the +1.0 in step ①.

example (initial set. -1.0') = +1.0 - bar check value - 0.4  
 remainder = +0.6 plotted, -1.0 index applied  
 = -0.4

USC&GS LAUNCH # 168

Date 1954	Day Letter	Qual ity	Corrections in Feet													
			A - Phase Depths							B - Phase Depths						
			5'	10'	15'	20'	25'	30'	35'	40'	45'	50'	55'	60'	65'	
6/14	a	G	+0.2	+0.4	+0.4	+0.2	+0.2	0.0	+0.1	0.0	+1.2	+1.9	+2.0	+2.0	+2.0	
6/14	a	P	+0.4	+0.6	+0.8	+0.8	+0.9	+1.0	+1.0	+1.1	+1.2	+2.0	+2.0	+2.0	+2.0	
6/15	b	F	+0.4	+0.4	+0.7	+0.8	+0.8	+0.9	+1.1	+1.1	+1.2	+1.9	+2.0	+2.0	+2.0	
6/22	d	G	0.0	+0.1	+0.1	+0.1	0.0	0.0	0.0	0.0	+0.3	+1.6	+2.0	+2.0	+2.0	
6/23	e	VG	0.0	0.0	+0.1	+0.1	+0.2	+0.2	+0.2	+0.4	+0.2	+2.0	+2.0	+2.0	+2.0	
6/24	f	VG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+2.0	+2.0	+2.0	+2.0	
6/28	g	P	0.0	+0.4	+0.5	+0.5	+0.6	+0.6	+0.4	0.0	+1.3	+1.9	+2.0	+2.0	+2.0	
6/28	g	F	+0.2	+0.1	+0.2	0.0	0.0	-0.4	0.0	-0.5	+1.0	+1.9	+2.0	+2.0	+2.0	
6/28	g	F	+0.2	+0.3	0.0	-0.1	-0.1	-0.4	0.0	-0.5	+1.3	+1.9	+2.0	+2.0	+2.0	
6/29	h	G	+0.2	+0.2	+0.2	0.0	0.0	+0.1	0.0	0.0	+0.1	+2.0	+2.0	+2.0	+2.0	
6/29	h	F	+0.4	+0.5	+0.2	+0.5	+0.5	0.0	0.0	0.0	+0.1	+2.0	+2.0	+2.0	+2.0	
6/29	h	F	+1.1	0.0	+0.1	+0.2	+0.2	+0.5	+0.8	+0.7	+1.0	+1.2	+1.9	+2.0	+2.0	
6/30	j	F	+1.1	0.0	+0.1	+0.2	+0.2	+0.5	+0.8	+0.7	+1.0	+1.2	+1.9	+2.0	+2.0	
7/1	k	P	+0.2	+0.5	+0.5	+0.8	+1.0	+1.0	+1.1	+0.8	+1.1	+1.2	+1.9	+2.0	+2.0	
7/2	l	P	+0.2	+0.4	+0.4	+0.4	+0.6	+0.8	+1.0	+0.8	+1.1	+1.2	+1.9	+2.0	+2.0	
7/12	m	F	+0.1	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	+1.8	+1.9	+2.0	+2.0	
7/12	m	F	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	+3.0	+3.0	+2.0	+2.0	
7/13	n	G	+0.1	+0.4	+0.3	+0.2	+0.3	+0.4	-0.1	-0.1	0.0	+3.0	+3.0	+2.0	+2.0	
7/14	p	VG	0.0	-0.1	0.0	0.0	0.0	0.0	+0.4	+0.6	+0.6	+1.6	+1.9	+2.0	+2.0	
7/14	p	F	0.0	+0.2	+0.4	+0.6	+0.6	+0.6	0.0	0.0	0.0	+1.6	+1.9	+2.0	+2.0	
7/15	q	P	0.0	+0.2	+0.4	+0.6	+0.6	+0.9	+1.2	+1.1	+1.6	+1.6	+1.9	+2.0	+2.0	
7/15	q	P	0.0	0.0	0.0	-0.2	+0.8	+0.9	+1.2	+1.1	+1.6	+1.6	+1.9	+2.0	+2.0	
7/16	r	G	0.0	0.0	0.0	0.0	-0.4	0.0	-0.1	-0.2	-0.3	0.0	+3.0	+2.0	+2.0	
7/19	s	P	0.0	+0.2	+0.6	+0.5	+0.4	+0.6	+0.4	+0.5	+0.5	+1.6	+1.9	+2.0	+2.0	
7/20	t	F	+0.3	+0.3	+0.2	0.0	0.0	-0.2	-0.2	-0.2	-0.1	+2.4	+2.8	+2.8	+2.8	
7/21	u	P	+0.8	+0.7	+0.7	+0.7	+0.7	+0.1	+0.7	+0.6	+0.6	+2.4	+2.8	+2.8	+2.8	
7/22	u	F	+0.1	0.0	0.0	-0.1	-0.2	-0.4	-0.6	-1.0	-1.0	+2.6	+2.8	+2.8	+2.8	
7/22	u	F	-0.2	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+2.6	+2.8	+2.8	+2.8	
7/23	v	F	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+2.6	+2.8	+2.8	+2.8	
7/23	v	F	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+2.6	+2.8	+2.8	+2.8	
7/26	w	G	+0.2	+0.5	+0.4	+0.3	+0.2	+0.2	+0.2	+0.2	+0.2	+1.5	+1.3	+1.0	+1.0	

BAR CHECKS FOOT SCALE SHEET PAR - 05154 CONTINUED ON SHEET 2 OF 2  
 \* VALUES SHOWN IN PARENTHESIS THUS ( ) ARE REJECTED VALUES

BAR CHECKS - - FOOT SCALE GROUP I

SHEET 2 OF 2

808 RECORDER 116-S

WOODS HOLE, MASS. 14 June - 4 August 1954

26 August - 24 September 1954

USC&GS LAUNCH # 168

Date 1954	Day Letter	Qual- ity	Corrections in Feet																	
			A - Phase Depths									B - Phase Depths								
			5'	10'	15'	20'	25'	30'	35'	40'	45'	50'	55'	60'	65'					
7/30	x	F	+0.5	+0.4	+0.3	+0.2	+0.2	0.0	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+1.8	+1.5			
8/2	y	G	+0.5	+0.3	+0.4	(+0.6)	+0.4	+0.4	+0.4	+0.4	+0.3	+0.2	+0.2	+0.2	+0.2	(+1.2)	(+1.1)			
8/3	z	G	+0.2	+0.4	+0.3	+0.4	+0.2	+0.2	+0.4	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+2.0	+2.0			
8/4	aa	VG	+0.4	+0.4	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+2.0	+2.0			
8/26	ss	VG	+0.4	+0.2	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	0.0	0.0	+2.3				
8/27	tt	G	+0.4	+0.3	+0.4	+0.3	+0.3	+0.2	+0.3	+0.2	+0.1	+0.1	+0.2	+0.2	+0.2	(+3.0)				
8/30	uu	P	(+0.6)	(+0.8)	(+0.8)	(+1.0)	(+1.2)	(+1.4)	(+1.4)	(+1.4)	(+1.4)	(+1.6)	(+1.5)	(+1.5)	(+1.5)	+2.5				
9/8	vv	P		+0.4	(+0.9)	(+1.1)	(+1.4)	(+1.3)	(+1.4)	(+1.3)	(+1.7)	(+1.7)	(+1.9)	(+1.9)	(+1.9)	+2.7				
9/9	ww	VG	(+0.8)	+0.4	0.0	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	0.0	0.0	+2.0	+2.0				
9/21	yy	VG	0.0	-0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+1.9	+1.9				
9/24	zz	VG	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-0.2	-0.2	-0.2	+1.4	+1.4				
SUMMATION			+5.0	+6.7	+5.2	+3.8	+3.0	+2.7	+1.8	+1.2	+1.7	+38.5	+16.9	+13.5	+13.9	+4.0				
NO. OF VALUES			31	34	32	30	28	25	24	21	19	20	9	7	7	2				
MEAN VALUE			+0.16	+0.20	+0.16	+0.13	+0.11	+0.11	+0.08	+0.06	+0.09	+1.92	+1.88	+1.93	+1.99	+2.00				
PHASE COMPARISONS							(A < B)				-1.83*									
A - PHASE PLOT			+0.16	+0.20	+0.16	+0.13	+0.11	+0.11	+0.08	+0.06	+0.09	+0.10	+0.15	+0.21	+0.22					

\* VALUES SHOWN IN PARENTHESIS THUS ( ) ARE REJECTED VALUES

\*\* FOR APPLICATION, SEE NOTE ON FOLLOWING PAGE AT END OF GROUP II, BAR CHECK TABULATION.

Compiled by CWT  
Checked by FBQ

BAR CHECKS - - FOOT SCALE GROUP II

808 RECORDER 116 - S  
5 August - 24 August 1954

WOODS HOLE, MASS.

USC&GS LAUNCH # 168

SHEET PAR - 05154

Corrections in Feet

Date 1954	Day Letter	Quali ty	A - Phase Depths										B - Phase Depths							
			5'	10'	15'	20'	25'	30'	35'	40'	45'	45'	50'	55'	60'	65'				
8/5	bb	VG	+0.8	+0.6	+0.5	+0.4	+0.3	+0.2	+0.2	+0.2	+0.2	+0.2	+0.1	+0.1	+0.1	+1.8				
8/5	bb	G	+0.6	+0.4	+0.2	+0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+0.1				
8/6	cc	VG	+0.7	+0.6	+0.5	+0.2	+0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+0.2				
8/9	dd	F	+0.7	+0.8	+0.6	+0.3	+0.3	+0.3	+0.3	+0.3	+0.4	0.0	0.0	0.0	0.0	0.0	+0.6			
8/10	ee	G	+0.6	+0.6	+0.4	+0.3	+0.3	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+0.2	+0.5				
8/13	hh	VG	+0.6	+0.4	+0.4	+0.3	+0.2	+0.2	0.0	0.0	+0.1	0.0	0.0	0.0	0.0	0.0	+1.5			
8/16	jj	VG	+0.6	+0.7	+0.5	+0.4	+0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+0.1				
8/17	kk	VG	+0.8	+0.6	+0.3	+0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+1.7			
8/18	ll	VG	+0.7	+0.6	+0.2	+0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+1.5			
8/19	mm	P	+0.4	+0.4	+0.2	+0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	+0.4			
8/20	nn	G	+0.8	+0.8	+0.6	+0.6	+0.6	+0.5	+0.3	+0.3	+0.5	+0.5	+0.4	+0.4	+0.4	+0.4	+1.5			
8/24	qq	P	(0.1)	(+0.6)	(+0.1)	(+0.3)	(+0.4)	(+0.4)	(+0.5)	(+0.5)	(+0.2)	(+0.2)	(+0.2)	(+0.2)	(+0.2)	(+1.2)				
SUMMATION			+7.3	+6.5	+4.4	+3.1	+1.5	+1.5	+0.7	+0.7	+1.2	+0.7	+1.3	+1.3	+1.3	+13.3				
NO. OF VALUES			11	11	11	11	10	10	10	9	8	8	8	8	8	8				
MEAN VALUE			+0.66	+0.59	+0.40	+0.28	+0.15	+0.15	+0.07	+0.13	+0.13	+0.09	+0.16	+0.16	+0.16	+1.66				
PHASE COMPARISONS												(A - B)	-1.50**	(Mean value for season from Group I and Group II)						
A - PHASE PLOT			+0.66	+0.59	+0.40	+0.28	+0.15	+0.15	+0.07	+0.13	+0.13	+0.09	+0.16	+0.16	+0.16	+0.17	+0.22	+0.28	+0.28	+0.29

\* VALUES SHOWN IN PARENTHESIS THUS ( ) ARE REJECTED VALUES \*\* MEAN VALUE FOR SEASON FROM GROUP I AND GROUP II OBTAINED AS FOLLOWS IN PHASE COMPARISONS

PHASE COMPARISONS

GROUP NO.	A - PHASE		B - PHASE	
	NO. OF VALUES	(45')	NO. OF VALUES	(45')
I	19	+1.7	20	+38.5
II	8	+1.3	8	+13.3
SUMMATION	27	+3.0	28	+51.8
MEANS		+0.11		+1.89
DIFFERENCE (A - B)		+1.78		

Compiled by CWT  
Checked by FBQ

BAR CHECKS - - FOOT SCALE GROUP III

808 RECORDER 117 - S  
10 June 1954

USC&GSS PARKER

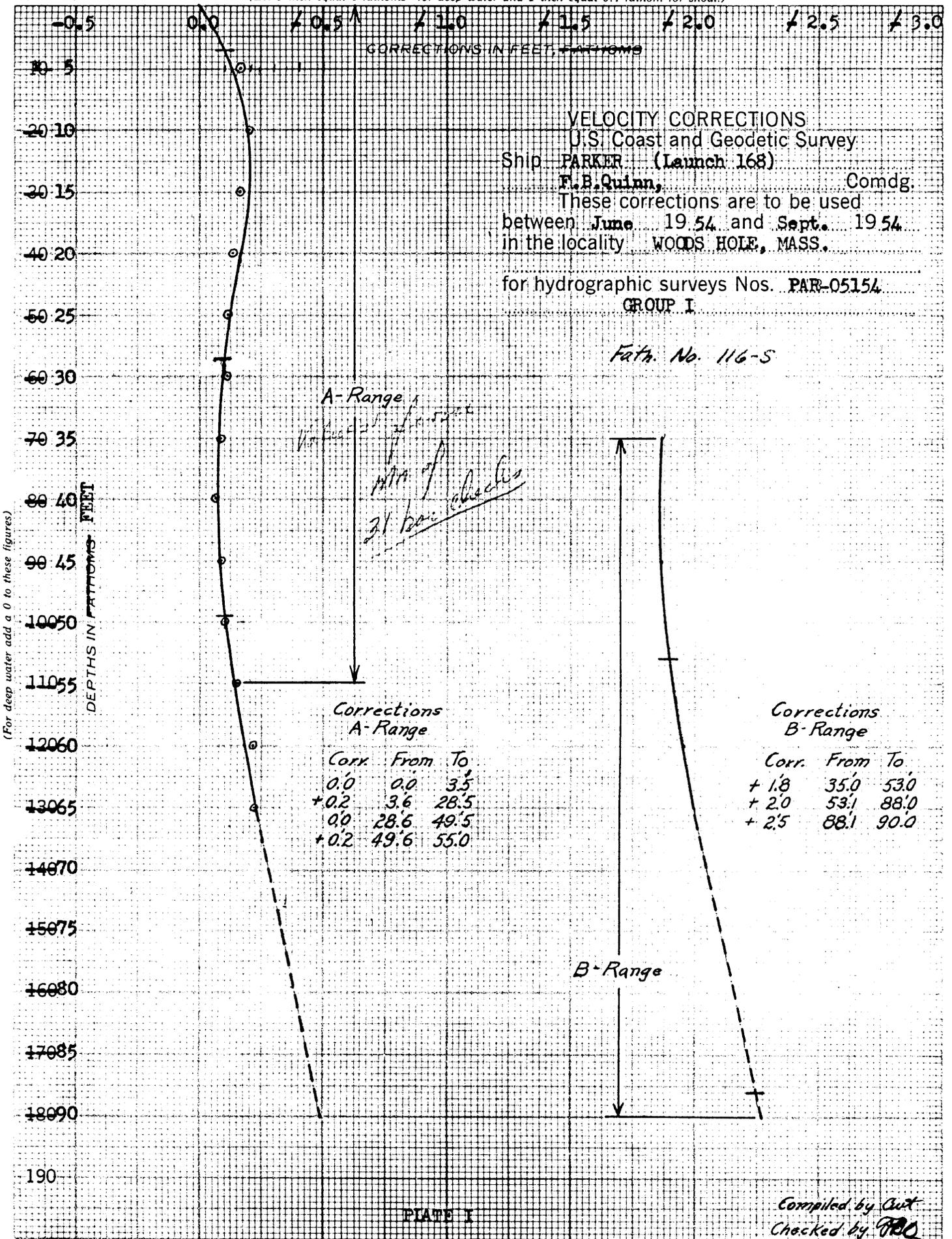
SHEET PAR - 05154 WOODS HOLE, MASS.

Date 1954	Day letter	Quality	Corrections in Feet															
			A - Phase Depths					B - Phase Depths										
			10'	20'	30'	40'	50'	60'	40'	50'	60'							
6/10	D	G	(+0.8)R*	+0.5	+0.6	+0.8	(+1.0)R											
A - PHASE PLOT					A - B)	+1.8												
				+0.5	+0.6	+0.8						+0.8	+1.0					

\* Value rejected on the basis of comparison with BAR CHECKS taken on Project CS-369.

All other values agree closely with those on Project CS-369.





(For deep water add a 0 to these figures)

DEPTHS IN FATHOMS FEET

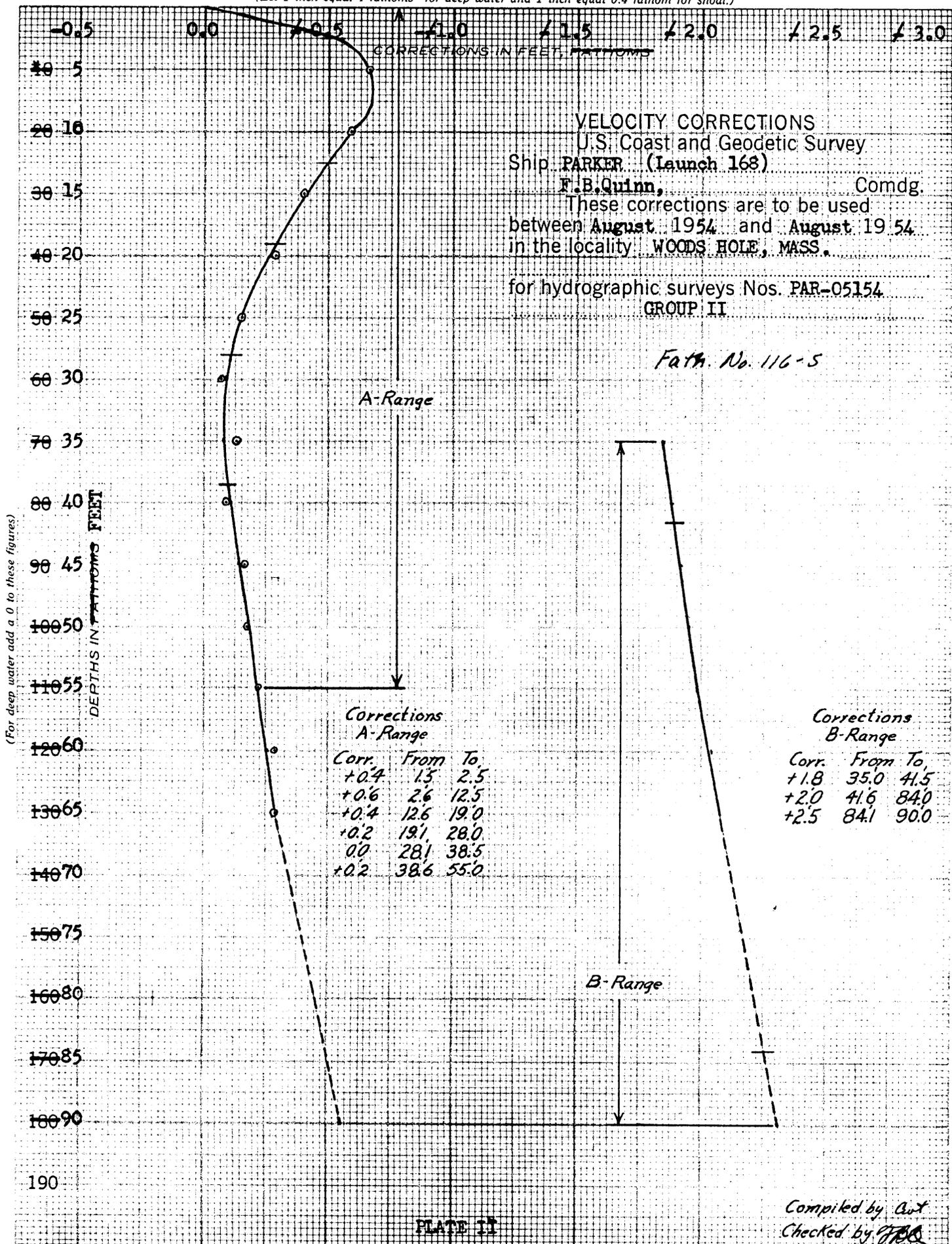


PLATE II

Compiled by *AWT*  
 Checked by *FRB*

CORRECTIONS IN FEET-FATHOMS

VELOCITY CORRECTIONS

U.S. Coast and Geodetic Survey

Ship: PARKER

F.B. Quinn,

Comdg.

*Fath No 117-5*

These corrections are to be used  
between June 1954 and 19  
in the locality WOODS HOLE, MASS.

for hydrographic surveys Nos. PAR-05154

GROUP III

(For deep water add a 0 to these figures)

DEPTHS IN FATHOMS

B-Range

A-Range

Corrections B-Range			
150	Corr.	From	To
	- 1.0	35.0	45.0
	- 0.8	45.1	55.0
160	- 0.6	55.1	65.0
	- 0.5	65.1	79.0
170	0.0	79.1	90.0

Corrections A-Range			
150	Corr.	From	To
	+ 0.2	5.0	14.0
	+ 0.4	14.1	24.0
	+ 0.6	24.1	35.0
	+ 0.8	35.1	45.0
	+ 1.0	45.1	55.0

Compiled by *AW*  
Checked by *FBQ*

PLATE III

GEOGRAPHIC NAMES

Survey No. 8170

No. 1

Name on Survey	Source									
	A	B	C	D	E	F	G	H	K	
	On Chart No.	On previous survey No.	On U. S. quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List		
Massachusetts	(title)								BGN	1
Woods Hole	(title: name applies to passage between mainland and Elizabeth Islands, in its entirety)								BGN	2
										3
Vineyard Sound									BGN	4
Nobska Point										5
(Nobska Point Ledge)										6
(Coffin Rock)										7
Little Harbor										8
Juniper Point									BGN	9
(Parker Flats)									"	10
Woods Hole	(town)								"	11
Eel Pond										12
Great Harbor										13
(Broadway)										14
(Grassy Island Ledge)										15
(Fine Island)										16
Penzance Point									BGN	17
Buzzards Bay									"	18
Timmy Point										19
(Timmy Point Shoal)										20
Uncatena Island										21
Hadley Harbor										22
(Hadley Rock)										23
Bull Island									BGN	24
Inner Harbor										25
Veckatimest Island									BGN	26
West Gutter										27

GEOGRAPHIC NAMES

Survey No. H-8170

No. 2

Name on Survey

	A	B	C	D	E	F	G	H	K					
	On Chart No.	On previous survey No.	On U. S. quadrangle Maps	From local information	On local Maps	P. O. Guide or Map	Rand McNally Atlas	U. S. Light List						
Middle Gate										1				
East Gutter										2				
Monsod Bay									BGN	3				
Nonamesset Island									"	4				
Mink Point									"	5				
Sheep Pen Harbor										6				
Great Ledge				Names approved 10-5-56. See chart 348 for best placement of names. Names listed in ( ) BGN will have to be applied after inking.						7				
Goats Neck														8
Northwest Gutter														9
Devil's Foot I.										10				
Ram I.				5 more names (7-11 including) approved 10-15-59						11				
														12
										13				
										14				
										15				
										16				
										17				
										18				
										19				
										20				
										21				
										22				
										23				
										24				
										25				
										26				
										27				

DIVISION OF CHARTS

REVIEW SECTION --NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8170

FIELD NO. PAR-05154

Massachusetts, Woods Hole Harbor and Approaches

SURVEYED: May - Sept. 1954

SCALE: 1:5,000

PROJECT NO. CS-371

SOUNDINGS: 808 Depth Recorder  
Leadline  
Sounding Pole

CONTROL: Sextant fixes  
on shore signals

Chief of Party ----- F. B. Quinn  
Surveyed by ----- F. B. Quinn, J. C. Tribble and C.W.Tupper  
Protracted by ----- A. G. Atwill and W. W. Feazel  
Soundings plotted by ----- A. G. Atwill and W. W. Feazel  
Verified and inked by ----- E. E. Thomas  
Reviewed by ----- I. M. Zeskind  
Inspected by ----- R. H. Carstens

DATE: 10/13/59

1. Shoreline and Control

The shoreline originates with the unreviewed air-photographic survey T-11336 of 1948-55. *Reviewed shoreline compared with the present survey 8/5/63 GET. T-11336 is superseded by Chart Drawing No. 348. See Addendum D.2. T-11336 and chart 348 history.*  
The source of the control originates with air-photographic survey T-11336, triangulations of 1887, 1904, 1932, and 1938, supplemented by hydrographic signals located by sextant fixes using the aforementioned triangulation and topographic stations.

2. Sounding Line Crossings

The sounding line crossings are in adequate agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves were adequately delineated, except close inshore where the foul character of the bottom sometimes prevented development to the low-water line.

The bottom is very irregular. Submarine features such as deeps, shoals, reefs, ledges, boulders and troughs contribute to the bottom irregularity.

4. Junction with Contemporary Surveys

The present survey is a re-survey of the major portion of the area covered by H-6348 (1948) and makes an adequate junction with H-6742 (1942) on the north, with H-6349 (1938-42) on the east and with H-6350 (1938-42) on the southeast. Additional soundings from the records of H-6742 have been plotted in the junctional area. At the junction limits of the present survey on the west, northeast, and south where there are no recent surveys, the charted depths are in adequate agreement with the present survey depths.

5. Comparison with Prior Surveys

A. H-160 (1845), 1-20,000	H-1833 (1887), 1-5,000
H-595 (1857), 1-20,000	H-2317 (1897-05), 1-10,000
H-1832 (1887), 1-20,000	H-2851 (1906), 1-20,000

These early surveys together cover the area of the present survey. A comparison between the prior and present surveys reveals changes in bottom configuration and shoreline. These changes are attributed to natural and man-made causes, such as the action of the current on the bottom, the construction and rebuilding of piers, the construction of groins, the dredging of channels, and the reclaiming of land. Changes in depths generally vary from 2-5 ft. Attention is specifically directed to the following discrepancies in hydrographic information between the prior and present surveys:

1. The sunken rock charted in lat.  $41^{\circ}31.01'$ , long.  $70^{\circ}41.12'$ , originates with an indefinite note in a sounding volume of H-1833 (1887). The feature is believed to actually fall amongst the group of rocks shown on the present survey about 100 meters to the southeastward. The charted sunken rock should, therefore, be deleted from the chart.
2. The 9-ft. sounding charted in lat.  $41^{\circ}31.14'$ , long.  $70^{\circ}41.45'$  from H-160 (1845), should be deleted from the chart. The 9-ft. sounding is discredited by depths of 23-35 ft. on both the present survey and the Corps of Engineers' survey of 1939 (Bp 33443). A change of 5 degrees in one of the angles of the fix which located the 9-ft. sounding would cause the sounding to fall on Hadley Rock which lies about 0.1 mile to the south southeastward.
3. The 5-ft. sounding charted in lat.  $41^{\circ}31.44'$ , long.  $70^{\circ}41.93'$ , from H-160 (1845), where it was plotted out of position, actually falls about 110 meters south southwestward. In its revised position the 5-ft. sounding falls in depths of 5-ft. on H-1833(1887-89)

and 9-10 ft. on the present survey. The 5-ft. sounding has been brought forward to the present survey in its revised position. The sounding in its erroneous position should be deleted from the chart.

4. The 12-ft. sounding charted in lat.  $41^{\circ}31.16'$ , long.  $70^{\circ}41.25'$ , from 1833 (1887) is discredited by present depths of 19-24 ft. The 12-ft. sounding should be deleted from the chart.

A number of rocks, critical soundings and bottom characteristics have been carried forward from the prior surveys to the present survey. With these additions, the present survey is considered adequate to supersede the prior surveys.

B. H-6348 (1938), 1-5,000

Except for the area east of long.  $70^{\circ}38.8'$ , the present survey falls within the area of the prior survey. A comparison between the prior and present surveys reveals in general only minor differences in depths of 2-3 ft. Specific attention is directed to the following discrepancies in hydrographic information between the prior and present surveys:

1. The rock awash charted in lat.  $41^{\circ}30.83'$ , long.  $70^{\circ}42.36'$ , from H-6348 (1938), falls on the present survey about 25 meters in front of a pier in depths of 6-7 ft. A re-examination of the air-photographs of contemporary air-photographic survey T-11336 (1948-55) which clearly revealed the dredged area in the vicinity of the charted feature, and the 10 minutes spent by the field party searching for the rock awash, failed to reveal its existence. The rock awash is believed not to exist and should be deleted from the chart.
2. Five rocks awash at MLW in the vicinity of lat.  $41^{\circ}31.61'$ , long.  $70^{\circ}40.62'$ , have been carried forward to the present survey from H-6348 (1938), where they were located by sextant fixes. Only one rock awash from this source has been charted. The foul character of the bottom would be better portrayed if additional rocks awash were charted here.
3. A pier in ruins and outer piling shown on H-6348 (1938) in lat.  $40^{\circ}31.65'$ , long.  $70^{\circ}40.72'$ , were not determined on the present survey or shown on air-photographic survey T-11336 (1948-55). A re-examination of air-photographs covering the above-mentioned area of

*New topo shows pier*

T-11336, indicates the probable existence of the pier ruins. The piling, however, was not discernible on these photographs. Because the existence of these features has not been disproved, they have been carried forward to the present survey and should be charted.

4. The sunken rock charted in lat.  $41^{\circ}30.68'$ , long.  $70^{\circ}40.05'$ , falling on the present survey in depths of 7-13 ft. originates with H-6348 (1938) where its location was determined off a sounding line. This sunken rock is considered to be the same as the 7-ft. sounding on the present survey which falls about 5 meters to the eastward of the location of the charted rock. The rock symbol should be deleted from the chart.
5. The sunken rock charted in lat.  $41^{\circ}31.31'$ , long.  $70^{\circ}42.21'$ , from H-6348 (1938), should be deleted from the chart. The feature is believed to be the 6-ft. sounding on the present survey which falls about 5 meters southeastward of its location on H-6348. The 6-ft. is considered to be adequate for charting purposes.
6. The 10-ft. sounding charted in lat.  $41^{\circ}30.66'$ , long.  $70^{\circ}40.49'$ , from H-6348 (1938) is considered discredited by present depths of 15 ft. The sounding is probably 1-fm. in error and should actually be 16 ft. The charted 10-ft. sounding should be deleted from the chart.

A number of critical depths, rocks and bottom characteristics have been carried forward from the prior to the present survey. With the addition of these soundings, the present survey is adequate to supersede the prior survey within the common area.

#### C. Wire Drag Surveys

H-3391 WD (1912-13-14), 1-20,000

There are no conflicts between the effective wire-drag depths and the present survey depths. Several critical depths have been carried forward from H-3391 WD to the present survey.

#### 6. Comparison with Chart 348 (Latest print date 5/25/59)

##### A. Hydrography

The charted hydrography originates principally with the present survey prior to verification and review, with the

prior surveys previously discussed and with supplementary hydrographic information from the Corps of Engineers' surveys of 1910 (Bp 13697) and 1942 (Bp 36157). A comparison between the charted information and the present survey reveals many differences in depths and rock detail, the causes for which are stated in paragraph 7 below. The differences between the charted and present survey depths vary from 1-10 ft. Because of the great number of these depth and rock detail differences, it was deemed advisable to submit an overlay to the compilation unit on which these differences with short explanatory notes are shown. Attention, however, is especially directed to the following:

1. The 2-ft. sounding charted in lat.  $41^{\circ}31.03'$ , long.  $70^{\circ}39.78'$ , prior to 1903 from a source not readily ascertainable, should be retained on the chart. The charted sounding which falls about 20 meters southwest of the 3-ft. sounding charted from H-6348 (1938), was not disproved.
2. The 10-ft. soundings charted in lat.  $41^{\circ}31.11'$ , long.  $70^{\circ}41.31'$  and lat.  $41^{\circ}31.11'$ , long.  $70^{\circ}41.35'$ , respectively, from the Corps of Engineers' survey of 1910 (Bp13697), fall on the present survey in depths of 14-15 ft. and about 25 meters southeast and southwest of a 13-ft. sounding. The charted depths are not considered disproved and should be retained on the chart.
3. The 12-ft. sounding charted in lat.  $41^{\circ}31.13'$ , long.  $70^{\circ}41.32'$ , from the Corps of Engineers' survey of 1910 (Bp. 13697), falls on the present survey in depths of 15-16 ft. about 25 meters north northeastward of a 13-ft sounding. The 12-ft. sounding should be retained on the chart.
4. The dolphin charted in the Fish and Wildlife Boat Basin in lat.  $40^{\circ}31.47'$ , long.  $70^{\circ}40.52'$ , originates with the Corps of Engineers' survey of 1955 (Bp. 56383), which was accomplished subsequent to the present survey.
5. The 11-ft. sounding charted in lat.  $41^{\circ}31.08'$ , long.  $70^{\circ}41.33'$ , from a source not readily ascertainable, falls in present depths of 14-16 ft. The sounding is not considered disproved and should be retained on the chart.
6. The rock awash charted in lat.  $41^{\circ}30.33'$ , long.  $70^{\circ}41.52'$ , from air-photograph 48 J-918, falls in present depths of 3 ft. A re-examination of the air-photograph failed to reveal the existence of the rock. The feature should be deleted from the chart.

7. The rock awash charted on lat.  $41^{\circ}30.77'$ , long.  $70^{\circ}42.37'$ , originates with the boat sheet of the present survey where it was erroneously located. The charted rock awash is the same one which is located on the present survey 30 meters to the south southeastward. The erroneous charted rock awash should be deleted from the chart.
8. The 2 sunken rocks charted in lat.  $41^{\circ}31.28'$ , long.  $70^{\circ}42.13'$ , from air-photographs 55W2247-8, should be deleted from the chart. Depths of 1 ft. found here on the present survey should be charted instead of the sunken rocks.
9. The rock awash ED charted in lat.  $41^{\circ}30.93'$ , long.  $70^{\circ}41.06'$  from the unverified smooth sheet is actually the same rock awash which is located on the present survey about 30 meters south southeastward. The rock awash ED has been erased from the smooth sheet and should, therefore, be deleted from the chart.
10. \* The existence of the 2 sunken rocks charted at the end of the boat basin in the vicinity of lat.  $41^{\circ}31.47'$ , long.  $70^{\circ}40.55'$ , from the U. S. Corps of Engineers' survey of 1942 (Bp 36157) was not disproved by the present survey. The rocks should, therefore, be retained on the chart.  
\* *Rocks awash transferred to H-8170.*

Except as noted above, the present survey is adequate to supersede the charted hydrography within the common area.

#### B. Aids to Navigation

The charted positions of aids adequately mark the features intended. Four buoys were found to be off their official stations by 50 to 100 meters at the time of the survey but are assumed to have been subsequently replaced in their official positions. Numerous changes have been made in the positions and numbering of other charted buoys and new beacons have been established subsequent to the present survey. These are reported in various Notices to Mariners and will not be individually mentioned in this review.

#### 7. Condition of Survey

- a. The Descriptive Report was complete and comprehensive.
- b. The sounding records were complete, except that notes were seldom made in the sounding records giving the proximity or elevation of rocks, or the proximity of piers, piles, etc.

- c. The accuracy of the smooth plotting was affected as follows:

A great deal of extra time was required by both the smooth plotter in the Norfolk Processing Office and by the verifier because of the uncertainty of position of a number of topographic and hydrographic signals, because of weak sextant fixes and because of apparent misidentification of signals such as the correct chimney on houses or the correct rock in a group of rocks.

The weakness in positions of signals can be ascribed to the large scale of the survey, 1/5000, and the fact that the topographic survey by photogrammetry was from photographs that had to be enlarged from 2 to 4 times, which would tend to loss of sharpness of detail and some doubt as to identification of natural objects to be used for signals. The hydrographic party attempted to get better positions by sextant fixes in a number of cases but were using other topo signals located by the photogrammetric plot, which may also have been weakly identified, so that error in control has not been entirely eliminated. The positions of 5 signals were revised during verification. The positions of 13 other signals appear to be doubtful and weakly fixed.

In order to tie the sounding lines down as strongly as possible the lines with the strongest fixes were verified first and used to help interpret and fix the more weakly controlled lines. This type of operation necessarily involves more study of the volumes and fathograms than is normal in verification of the average survey.

Also adding to the complexity of the verification was the plethora of boulders and the close development of the entire area. The lines were so close that some trace of the boulders and rocks would show up on two or three lines, and it was necessary to study the fathograms closely to determine if there was one boulder or more in many instances. The traces on the fathograms of many of these boulders would have been considered 'strays' in a different type of area.

Also adding to the difficulties was the fact that three tide zones were used in applying tide reducers to the hydrography, while only one tide station was used by photogrammetry in considering if a rock was bare or not. One such rock shown as a bare islet on T-11336 was shown by the hydrography to be baring two feet at M.L.W. (pos. 58kk). There are other instances also. It was also necessary to revise the tide reducers of about 250 soundings

because jumps of as much as 2 ft. in depths occurred when the sounding lines passed from one tide zone into another tide zone.

A foul area outlined on T-11336 was covered by hydrography southwest of the former Pine Island. There are several rocks awash in the area but also some deep water. The rocks have been shown on H-8170, as well as the soundings and depth curves, but without outlining the 'foul area'.

8. Compliance with Project Instructions

The survey adequately complies with the Project Instructions, except as noted in paragraph 7 above.

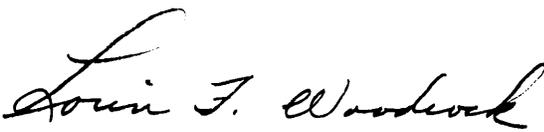
9. Additional Field Work Recommended

As mentioned in paragraph 7 above, because of the uncertainty of position of a number of topographic and hydrographic signals, because of weak sextant fixes, and because of the apparent misidentification of signals, many of the sounding lines, rocks and critical depths are probably out of position. For these reasons, the survey is not considered basic, although it is considered adequate for charting purposes. Should surveys of adjacent waters be resumed in this area, junctions should be made with the present survey and the portion of H-6348 (1938) on the south not covered by the present survey should be resurveyed.

Examined and Approved:

  
Chief, Nautical Chart Branch

  
Chief, Division of Charts

  
Chief, Hydrography Branch

  
Chief, Division of Coastal Surveys

⊛ 26 envelopes

1 envelope had scanning template which is retained in Verification files.

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8170....

Records accompanying survey:

Boat sheets .1...; sounding vols. .27...; wire drag vols. ....; bomb vols. ....; graphic recorder rolls ⊛ 26-Envelopes

special reports, etc. 1-Smooth sheet, 1-Descriptive report, 9-Overlays (-Post Hurricane Survey, 1-Pier Diagrams, 5-Chart comparisons, & 2-Overlay tracings), 1-Envelope of Overlays 1 to 7, 1-Y&D Drawing No. 627468, 1-Print of Hydro. in Basin, 1-Blackline impression T-11336, and 1-Velocity correction report.

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

Number of positions on sheet

4922 \*\*\*

Number of positions checked

534 (11%)

Number of positions revised

164 (3%)

Number of soundings revised (refers to depth only)

1050 Total (52,004) 16% \*

Number of soundings erroneously spaced

44

Number of signals erroneously plotted or transferred

5 revised \*\*

Topographic details

Time 150 hrs.

Junctions H-6349, H-6742, H-6350, INVESTIGATION from Prior surveys H-160, H-1833 Verification of soundings from graphic record

Time 95 hrs.

Time 48 hrs.

Time 80 hrs.

Verification by *Ernest E. Jones* Total time 1047 hrs Date 3/13/59

Reviewed by *W. Jeske* Time 43 hrs Date 10-13/59

\* of which 5% is tides (245 soundings) Speed (80 soundings)

*W. Jeske* 8 hrs. 2-18-60

\*\* 9 positions doubtful.

if hydrographic locations - information provided by hydrographer insufficient for rigid positioning.

\*\*\* 23% (1122 pos) have angle of fix less than 20°  
3% (159 pos) have ≥ angles of fix less than 20°  
10% (492 pos) have ≥ angles of fix less than 30°

M-2232-1

27 hrs/Vol

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Surveys~~

15 Oct. 1956

Division of Charts: R. H. Carstens

Plane of reference approved in  
27 volumes of sounding records for

HYDROGRAPHIC SHEET 8170

Locality Woods Hole, Mass.

Chief of Party: F. B. Quinn in 1954  
Plane of reference is mean low water, reading  
1.3 ft. on tide staff at Uncatena Island  
6.7 ft. below B. M. 1 (1931)  
5.3 ft. on tide staff at Woods Hole  
10.5 ft. below B. M. 5 (1913)  
2.4 ft. on tide staff at Little Harbor  
8.5 ft. below B. M. 1 (1931)

Height of mean high water above plane of reference is:

/ Uncatena Island: 3.6  
< Woods Hole: 1.8  
> Little Harbor: 1.3

Condition of records satisfactory except as noted below:

NOTE: Tide reducers for the positions listed below have  
been revised in red and verified:

<u>Vol.</u>	<u>Positions</u>
7	97m - 109m revised & verified E7

*William Shafus*

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

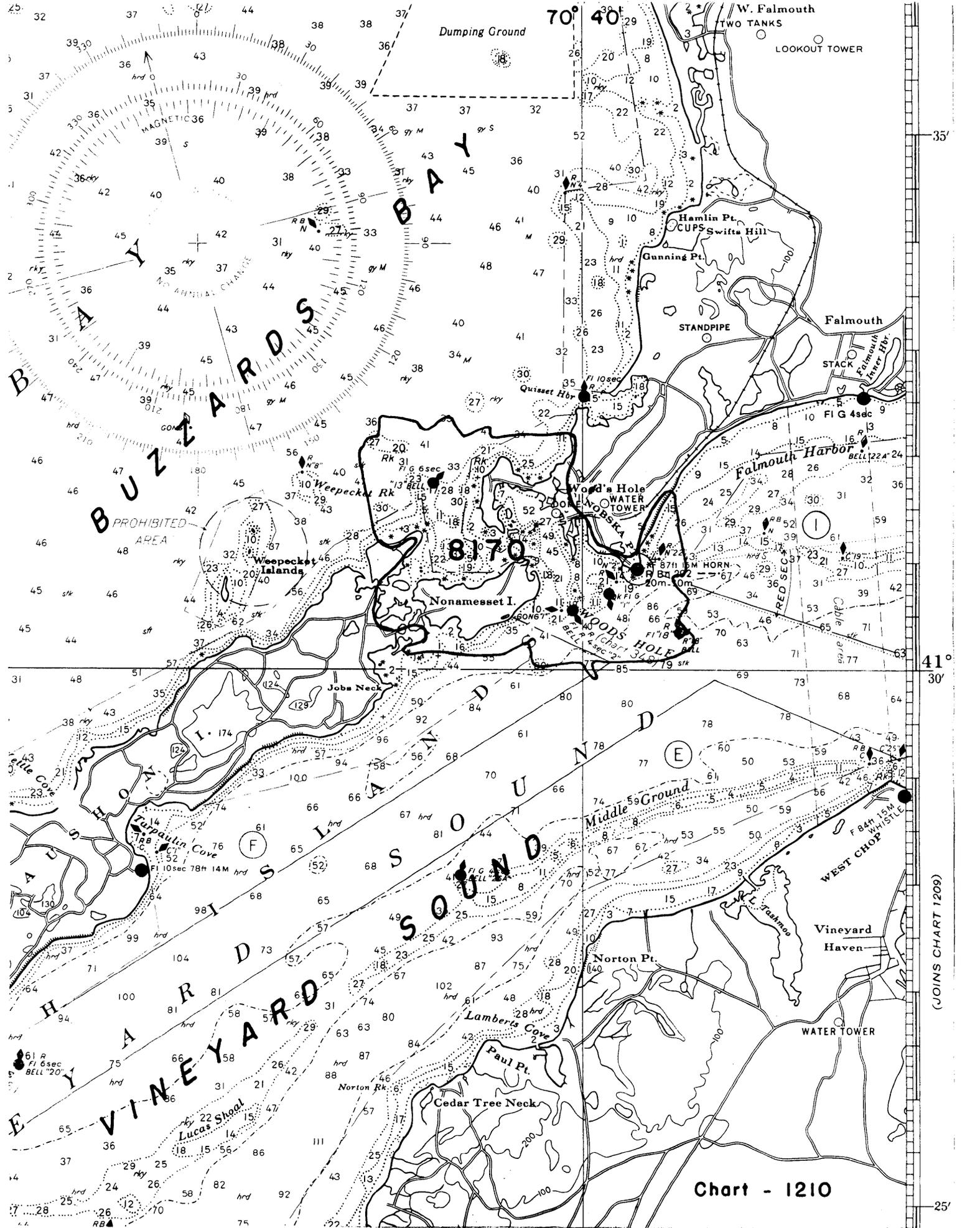


Chart - 1210

(JOINS CHART 1209)

# NAUTICAL CHARTS BRANCH

SURVEY NO. H-8170

## Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
1/16/57	1209	J. M. Gunn	Before <del>After</del> Verification and Review Examined. Not applied at this time.
2/6/57	348 Reconst.	X. K. Benson	Before <del>After</del> Verification and Review. Full application, but subject to correction after Review.
7/18/57	Old 348	C.R.W. - J.P.W.	Before <del>After</del> Verification and Review Partially - thru 348 Reconst
4-30-60	348	R.E. EIKINS	<del>Before</del> After Verification and Review Completely applied
5-6-60	249	R.E. EIKINS	<del>Before</del> After Verification and Review Completely applied. off thru chrt 348.
5-9-60	1210	R.E. EIKINS	<del>Before</del> After Verification and Review Completely applied off thru chrt 249.
11-16-61	1210 Reconst.	M. Rogers	<del>Before</del> After Verification and Review Fully applied thru chart 249
1-31-62	NEW CHART 260	R.K. DeSauder	Before After Verification and Review thru chrt 348
10-14-68	1209	W.H. Mad	<del>Before</del> After Verification and Review Fully app. thru 1210 + 260
4-28-70	348	Irene Beeler	<del>Before</del> After Verification and Review Reappd - To fill holidays in H8902 (smaller scale than chart 261)
8-8-70	348	Irene Beeler	Reappd - Added s.d.g.s in areas 91° 28', 70° 42' ± + 91° 25', 70° 37' ±
12-15-78	348	Eric Frey	Added soundings <sup>curves</sup> along western limit of chart and along southern limit of chart. in area of extension after V & R

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.