

8172

Diag. Cht. No. 1209-3.

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. PAR-2354 Office No. H-8172

LOCALITY

State Massachusetts

General locality Nantucket Sound

Locality Vicinity of Monomoy Island

19/54-56

CHIEF OF PARTY

F. B. Quinn and R. A. Marshall

LIBRARY & ARCHIVES

DATE September 12, 1958

B-1870-1 (1)

8172

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-8172

Field No. Par-2354

State MASSACHUSETTS

General locality NANTUCKET SOUND

Locality VICINITY OF MONOMOY ISLAND

Scale 1:20,000 Date of survey 20 Aug. 1954 to 17 Oct. 1956

Instructions dated 24 May 1954

Vessel PARKER & GILBERT

Chief of party F.B. QUINN & R.A. MARSHALL

Surveyed by E.W. Richards, O.L. Doster, N.E. Taylor

Soundings taken by ~~XXXXXX~~ graphic recorder, hand lead, ~~XXX~~

Fathograms scaled by Ship Personnel & Norfolk District Office

Fathograms checked by " " " " "

Protracted by A.K. SCHUGELD

Soundings penciled by A.K. SCHUGELD

Soundings in ~~XXXXXX~~ feet at MLW ~~XXXXXX~~ True Depths

REMARKS:
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.....
.....
.....
.....
.....

No reports available for
1955-56 seasons

DESCRIPTIVE REPORT 18

TO ACCOMPANY 12

HYDROGRAPHIC SURVEY H - 8172

(Field No. PAR - ~~2154~~ and PAR - 2354) 17

Ship PARKER

F. B. Quinn, Commanding

Scale 1:20,000

A. PROJECT:

CS-369, vicinity of Nantucket Sound, Massachusetts, 22-rct, 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-271 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.

All 1954 sdgs. were North ✓ D.J.K.
P.O. 8 WY chimera - entered.
Use tides

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 balled for. ✓

E. SMOOTH SHEET:

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

Shoreline will be obtained from the Photogrammetric Project PH-116, done at Monomoy Island in June 1954. T-11217

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, 1953, (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. (T-11217 (1955))

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 GAMM, 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. *Add. WK. in 1955 and 1956.*

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 Butter 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.

*See
P 5
REVIEW*

M. COMPARISON WITH CHART:

Same remarks as under "L".

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.

*See
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Review*

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 "E".~~

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.

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	23.6	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

*These phase corr. are combined with above velocity corrections
H.L.P.*

SHORAN CORRECTIONS

PROJECT CS-369

SHIP PARKER AUGUST - OCTOBER 1954

SHEETS PAR - 2154 and 2354

Date 1954	Sheet PAR-	Day Letter	STATION CHAT					
			Comparisons with Visual			Daily Corrections		
			No. of Comparisons	Summation of Comparisons	Mean Corrections	* Zero Sets	Zero Checks	Total Corrections
8/13	2354	A	(1)R	(-)(0.001)R	(-)(0.001)R			(+)0.013
8/16	2354	B					(+)0.002	
8/17	2354	C	3	(+)0.045	(+)0.018	99.826	(-)0.001	
8/18	2354	D					(+)0.001	
8/20	2354 2154	E A					(+)0.002	
8/23	2354 2154	F B					(+)0.001	
8/24	2354	G	4	(+)0.031	(+)0.008	99.824	0.000	
8/25	2354	H					0.000	
8/26	2354 2154	J C					0.000	
8/27	2354 2154	K D					0.000	
8/30	2354 2154	L E					0.000	
9/24	2354	M	3	(+)0.050	(+)0.017	99.824	(+)0.002	
9/30	2354 2154	N F					(+)0.001	
10/4	2354	P					(-)0.001	
10/6	2354 2154	Q G					(-)0.002	(+)0.013
SUMMATION				(+)0.126	(+)0.013	299.474	(+)0.005	
NO. OF VALUES			10			3	14	
MEAN						99.825	0.000	

Use (+)0.013 Entire Season

* "Zero Checks" read at times of Visual Comparisons were meaned, and this value was used as the "Zero Set" in all "Zero Checks". Then all "Zero Check Corrections" were meaned 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

SHORAN CORRECTIONS

PROJECT CS-369

SHIP PARKER AUGUST - OCTOBER 1954

SHEETS PAR - 2154 and 2354

Date 1954	Sheet PAR-	Day Letter	STATION GAMM					
			Comparisons with Visual			Daily Corrections		
			No. of Comparisons	Summation of Comparisons	Mean Correction	* Zero Sets	Zero Checks	Total Corrections
8/13	2354	A	1	(-)0.019	(-)0.019			
8/16	2354	B					0.000	(-)0.016
8/17	2354	C	3	(-)0.050	(-)0.017	99.825	(-)0.002	
8/18	2354	D					(+)0.001	
8/20	2354 2154	E A					(+)0.001	
8/23	2354 2154	F B					(-)0.001	
8/24	2354	G	5	(-)0.052	(-)0.010	99.823	0.000	
8/25	2354	H					(-)0.001	
8/26	2354 2154	J C					0.000	
8/27	2354 2154	K D					(-)0.001	
8/30	2354 2154	L E					(-)0.001	
9/24	2354	M	3	(-)0.067	(-)0.022	99.822	0.000	
9/30	2354 2154	N F					0.000	
10/4	2354	P					(+)0.001	
10/6	2354 2154	Q G					(-)0.002	(-)0.016
SUMMATION				(-)0.188	(-)0.016	299,470	(-)0.005	
NO. OF VALUES			12			3	14	
MEAN						99.823	(-)0.000	

Use (-)0.016 Entire Season

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

Compiled by: CWT
Checked by: FBQ

FLOATING AIDS TO NAVIGATION
H-8172

<u>BUOY</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>	<u>DEPTH</u>	<u>POS. NO.</u>	<u>DATE</u>
Bishop And Clerks Ltd. Bell Buoy 1	41-34.7 ⁶ 5	70-14.5 ²⁸ 0	18	1Q	10/ 6/54 ✓
Pollock Rip Chan. Handkerchief Shoal Buoy 14	41-29.1 ¹² 1	70-05.0 ⁰⁸ 1	48	36A	5/10/55
Pollock Rip Chan. Handkerchief Ltd. Whis. Buoy H	41-28.78	70-04.48	38	37A	5/10/55 ✓
Pollock Rip Chan. Handkerchief Shoal Buoy 12	41-30.14	70-03.28	54	38A	5/10/55 ✓
Main Chan. Tucker- Nuck Shoal Buoy 7A	41-24.7 ⁶⁹ 2	70-12.8 ⁹⁵ 3	54	148EA	8/ 5/55 ←
North Side Handker- chief Shoal Buoy 2	41-33.82	70-03.69	21	2TA	9/14/55 ✓
Main Chan. Halfmoon Shoal Ltd. Bell Buoy 12	41-27.10	70-14.20	45	27TA	9/14/55 ✓
Main Chan. Tucker- nuck Shoal Ltd. Buoy 7	41-24.09	70-10.7 ⁶⁹ 0	22	18XA	7/ 3/56 ✓

STATISTICS FOR SHORAN CONTROLLED HYDROGRAPHIC SURVEY

PROJECT CS-369

Field No. PAR-2354

FATHOMETER 117-S

DATE	DAY LETTER	VOL. NO.	STAT. MI. SDGS.	DIST. TO & FROM (NAUT).	TOTAL DAYS RUN (NAUT).	NO. POS.	AREA SQ. STAT. MI.	
8/13*	A	1	0.0	65.3	71.1	5		
		*(Shoran calibration only)						
8/16	B	1	29.2	50.6	76.9	70		
8/17	C	1&2	49.4	41.1	93.8	118		
8/18	D	2	20.3	40.5	59.3	43		
8/20	E	3	20.3	42.1	62.0	47		
8/23	F	3	19.4	40.2	58.0	49		
8/24	G	3	13.6	55.6	75.2	45		
8/25	H	4	53.6	40.2	89.1	137		
8/26	J	4	22.4	40.3	59.9	56		
8/27	K	4&5	22.8	40.2	62.1	59		
8/30	L	5	20.3	41.2	60.2	47		
9/24	M	5	33.5	41.1	92.4	81		
9/30	N	5	9.3	20.5	29.9	21		
10/4	P	5	10.8	27.7	37.4	26		
10/6	Q	6	20.7	4.0	22.0	54		
Totals		6 ✓	345.6 ✓	590.6	949.3	858 ✓	26.5	
Combined Totals								
PAR-2154		9	559.8	650.6	1215.4	1435	45.2	
PAR-2354								

2354

STATISTICS
H-8172

1955 SEASON

<u>VOL. NO.</u>	<u>DAY</u>	<u>DATE</u>	<u>NO. POS.</u>	<u>STA. MI.</u>	<u>SDGS.</u>
7	A	5/10/55	38	5.0	
7	B	5/11/55	27	8.6	
7	C	5/13/55	24	9.5	
7&8	D	5/17/55	144	54.4	
8	E	5/20/55	31	14.0	
9	F	5/26/55	20	9.9	
9	G	5/31/55	8	3.8	
9	H	6/ 1/55	27	9.1	
9	J	6/ 2/55	24	7.6	
9	K	6/ 7/55	16	9.1	
9	L	6/17/55	18	9.1	
9&10	M	6/24/55	24	10.8	
10	N	6/28/55	17	7.7	
10	P	7/ 1/55	35	12.5	
10	Q	7/ 6/55	27	9.0	
10	R	7/8 /55	29	13.0	
10&11	S	7/11/55	36	15.0	
11	T	7/12/55	130	61.2	
11&12	U	7/19/55	16	6.8	
12	V	7/21/55	104	47.0	
12&13	W	7/22/55	152	71.5	
13&14	X	7/23/55	123	54.7	
14,15&16	Y	7/27/55	216	96.8	
16&17	Z	7/28/55	245	86.0	
17&18	AA	7/29/55	149	68.5	
18	BA	8/ 2/55	74	31.2	
19	CA	8/ 3/55	40	19.2	
19	DA	8/ 4/55	106	42.3	
19&20	EA	8/ 5/55	148	64.1	
20,21&22	FA	8/ 9/55	209	90.4	
22&23	GA	8/10/55	214	100.5	
23&24	HA	8/11/55	208	56.2	
24&25	JA	8/16/55	116	47.6	
25&26	KA	8/17/55	121	45.4	
26&27	LA	8/18/55	149	68.3	
27	MA	8/19/55	37	13.8	
27&28	NA	8/23/55	173	29.3	
28&29	PA	8/25/55	122	50.1	
29	QA	8/26/55	28	13.7	
29	RA	9/ 2/55	96	37.1	
29	SA	9/13/55	6	0.0	
29&30	TA	9/14/55	39	0.0	
30	UA	9/16/55	52	16.6	
31	VA	5/30/56	6	0.0	<u>1956 SEASON</u>
31	WA	5/31/56	51	0.0	
31	XA	7/ 3/56	27	23.4	
32	a	10/16/56	4	0.0	<u>LAUNCH 180</u>
TOTALS			3706	1449.8	1955&1956 SEASONS

NORFOLK PROCESSING OFFICE
ADDENDUM
To Accompany

HYDROGRAPHIC SURVEY H-8172 (Field No. Pk-2354)

GENERAL

Field work was started on this survey by SHIP PARKER during the 1954 field season and was continued by SHIP GILBERT during the 1955 and 1956 seasons. A complete descriptive report was received to cover the 1954 season's work but no reports were forwarded for the 1955 or 1956 seasons, other than a fathometer velocity report which was transcribed from field notes by this Office.

CONTROL

The entire survey was shoran controlled on stations CHAT and GAMB. With the exception of the 1956 season all shoran corrections were entered by the field party. Those for 1956 were entered by this Office according to notes in the sounding volumes.

Vessel speed between positions was some-times erratic and this condition is believed to be caused by strong and conflicting currents.

TIDES

Tides for the entire survey were taken from the WYCHMERE gage. A ratio of 0.8 of the HW heights was used for the area south of a line extending Westward from the tip of Great Point. Corrections for the 1956 season were entered by this Office.

SOUNDINGS

All fathograms for the 1954 season were check scanned and the soundings reduced with templates by personnel of this Office. The remaining fathograms were check scanned in critical areas and the soundings reduced in the conventional manner.

Agreement of soundings at crossings was good except for L thru Q days of the 1954 season. The discrepancies are particularly noticeable on P and Q days wheresoundings average 2 feet deeper than surrounding hydrography. *The conflict mentioned in the above paragraph has been eliminated, see Officers Report, paragraph No. 26. D.J.K.*

Respectfully submitted,

Hugh L. Proffitt

Hugh L. Proffitt
Cartographer

Norfolk, Va.
9 Sept. 1958

Misc. Field comp.
with H-8171

CORRECTIONS TO SOUNDINGS

H-8171 H-8172
SHEETS PAR - 2154 and PAR - 2354

ENTRANCE TO NANTUCKET SOUND

U. S. C & G. S. SHIP PARKER

F. B. QUINN, COMMANDING

1. VELOCITY CORRECTION CURVES
2. CORRECTION TABULATIONS
3. INDEX CORRECTIONS
4. INDEX CORRECTIONS WERE TAKEN DIRECTLY FROM FATHOGRAMS
5. TIDE CORRECTIONS ARE NOT INCLUDED HEREIN

PROJECT CS - 369

1954 FIELD SEASON

FATHOMETER CORRECTIONS

SHIP PARKER

1954 FIELD SEASON

HYDROGRAPHIC SHEETS

PAR - 2154 Reg. No. H - 8171; PAR - 2354 Reg. No. H - 8172

PROJECT CS - 369

NANTUCKET SOUND, MASSACHUSETTS

F. B. QUINN, CHIEF OF PARTY

DATES OF SURVEY:

13 July through 13 October 1954. ✓

APPARATUS:

808 type depth recorder No. 117-S was used the entire season, 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, i. e. - Sampson tiller rope with bronze center. ✓

FIELD PROCEDURES:

Bar check lines were compared with a standard tape three times during the season. The error in each case was negligible and lines were used as marked. ✓

Fathometer speed checks on the foot scale were made and compared with the standard rate of paper travel of 8 inches in 4 minutes. Speed count checks on the fathom scale were made and compared with the standard count of 123 revolutions per 66 seconds. No appreciable errors were found. All comparisons are recorded in the sounding volumes. ✓

Attempt was made to take bar checks under favorable wind and sea conditions. ✓

Range (phase) corrections for "B-A" and "C-B" were determined by bar check comparative readings at depths of 40' and 80' respectively. ✓

The initial setting was held at 4 feet at all times. Index corrections are entered in the sounding volumes for any variation of the initial from the 4.0 ft. setting. ✓

OFFICE DETERMINATION OF VELOCITY CORRECTIONS:

All bar checks were tabulated, erroneous values rejected, valid values meaned, mean values reduced to an A-range plot by algebraic deduction of the range corrections, and the correction curve plotted from the results. Those sections of the correction curve applicable to the various ranges were shifted in the plus or minus direction the amount of their respective range (phase) correction, and the values scaled off for tabulation. The velocity curve was extrapolated from 80 ft. (the deepest bar check recorded), to 150 ft.

Settlement and squat were not considered, the value being negligible.

CONCLUSIONS:

All velocity correction tabulations, curves, and conclusions are included in the following report.

Respectfully submitted,



Clifford W. Tupper
Ensign, USC&GS

APPROVED AND FORWARDED:



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

BAR CHECKS - - FOOT SCALE ✓

USC&GSS PARKER

SHEETS PAR - 2154 and PAR - 2354

808 DEPTH RECORDER 117 - S

Date 1954	Sheet PAR-	Day let ter	Qual ity	Corrections in Feet										
				A - Range				B - Range					C - Range	
				10'	20'	30'	40'	40'	50'	60'	70'	80'	80'	
8/16	2354	B	F	+0.2	+0.5	+0.5	+0.6	-0.2						
8/18	2354	D	F-G	+0.1	+0.1	(+0.2)R	(+0.4)R	-0.1	0.0					
8/20	2354	E	F-G	+0.1	+0.4	+0.6	+0.8	0.0	+0.4	+0.6				
8/23	2354	F	Best	+0.4	+0.4	+0.8	+0.9	+0.1	+0.5	+0.8	+1.0			
8/25	2354	H	G	+0.2	+0.5	+0.9	+1.0	-0.2	0.0	0.0	+0.1	+0.6	0.0	
8/26	2354	J	G	+0.2	+0.6	+0.8	+1.0	-0.2	0.0					
8/27	2354	K	F	0.0	+0.2	+0.5	+0.8	-0.2	0.0					
SUMMATION				+1.2	+2.7	+4.1	+5.1	-0.8	+0.9	+1.4	+1.1	+0.6	0.0	
NO. OF VALUES				7	7	6	6	7	6	3	2	1	1	
MEANS				+0.17	+0.39	+0.68	+0.85	-0.11	+0.15	+0.47	+0.55	+0.60	0.00	
						A - B	+0.96			B - C	+0.60			
										A - C	+1.56			
A - PHASE PLOT				+0.17	+0.39	+0.68	+0.85	+0.85	+1.11	+1.43	+1.51	+1.56	+1.56	

Compiled by: FBQ
Checked by: CWT

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

CORRECTIONS IN FEET FATHOMS

VELOCITY CORRECTIONS
U.S. Coast and Geodetic Survey

Ship PARKER Comdg. FB Quinn

These corrections are to be used
between 16 Aug. 1954 and 6 Oct. 1954
in the locality Nantucket Sound, Mass.

for hydrographic surveys Nos. PAR-2154
and PAR-2354

Corrections

A-Range

Corr.	From	To
+0.2	5.0	15.6
+0.4	15.7	23.5
+0.6	23.6	31.6
+0.8	31.7	40.0
+1.0	40.1	48.3
+1.2	48.4	55.0

Corrections

B-Range

Corr.	From	To
-0.2	35.0	38.5
0.0	38.6	46.3
+0.2	46.4	54.5
+0.4	54.6	66.5
+0.5	66.6	90.0

Corrections

C & D - Ranges

No Corrections Entire Range

(For deep water add a 0 to these figures)

FEET
DEPTHS IN FATHOMS

A-Range

B-Range

D & C-Range

Compiled by FBQ
by Out

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

CORRECTIONS IN ^{Feet}FATHOMS

Controlled by the Washington
June 23 1959, ver. 0.1r

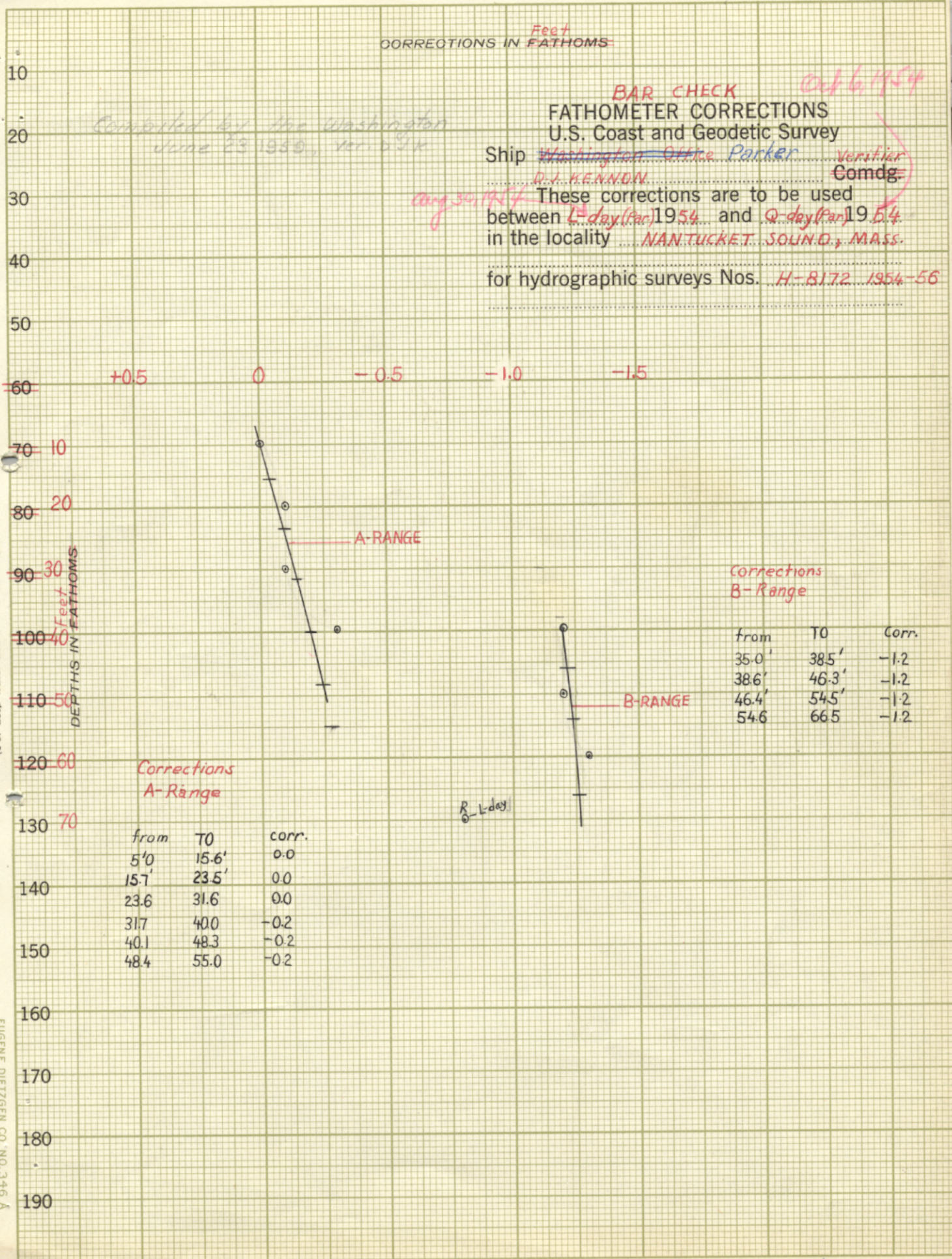
BAR CHECK *Oct 6, 1954*
FATHOMETER CORRECTIONS
U.S. Coast and Geodetic Survey

Ship Washington Office Parker Vershler
D. I. KENNON Comdg.

Aug 30, 1954 These corrections are to be used
between L-day (Par) 1954 and Q-day (Par) 1954
in the locality NANTUCKET SOUND, MASS.

for hydrographic surveys Nos. H-8172 1954-56

(For deep water add a 0 to these figures)



Corrections
A-Range

from	To	corr.
5'0	15.6'	0.0
15.7	23.5'	0.0
23.6	31.6	0.0
31.7	40.0	-0.2
40.1	48.3	-0.2
48.4	55.0	-0.2

Corrections
B-Range

from	To	Corr.
35.0'	38.5'	-1.2
38.6'	46.3'	-1.2
46.4'	54.5'	-1.2
54.6'	66.5'	-1.2

R-L day

Graph No. 2

EUGENE DIETZGEN CO. NO. 346 A

SUMMARY OF VELOCITY CORRECTIONS

(H-8172)

SHEETS PAR - 2154 and PAR - 2354

NANTUCKET SOUND, MASSACHUSETTS

PROJECT CS - 369

13 JULY 1954 - 13 OCTOBER 1954

<u>A - Range</u>			<u>B - Range</u>		
<u>Correction</u> <u>(ft)</u>	<u>From</u> <u>(ft)</u>	<u>To</u> <u>(ft)</u>	<u>Correction</u> <u>(ft)</u>	<u>From</u> <u>(ft)</u>	<u>To</u> <u>(ft)</u> ✓
(+) 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	23.6	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	(+) 0.6	66.6	90.0
(+) 1.2	48.4	55.0			

No corrections on "C" and "D" ranges.

*This tabulation failed to include bar check correction values recorded in the volumes for L-Q days. a new graph was constructed and correction values, independent of the values tabulated on this page, were extracted and applied to all sounding for days L-Q. D.J.K. Verfier. (See Graph No. 2)
See Also P 7a Review.*

VELOCITY CORRECTION REPORT

SHIP GILBERT

NANTUCKET SOUND AREA - 1955 SEASON

SURVEYS Par-2154 & 2354

SPECIAL REPORT

FATHOMETER CORRECTIONS

~~EX~~- Par-2154 & 2354

NANTUCKET SOUND - 1955 SEASON

EQUIPMENT

All Ship Gilbert soundings were taken with an 808 fathometer No. 161 SPX, using the new transducers which were installed in the hull during the 1955 over-haul period. In most all cases a very distinct fathogram was obtained.

808 Fathometer No. 162SPX was used thru-out the period on launch 172 and on 3 Aug. in launch 175. On all other sounding days, fathometer No. 126S was used on launch 175. Difficulty was experienced in obtaining a good trace in both launches. The transducer units were tried in different locations in the bilge until satisfactory results were obtained. The launch transducer units were re-wired on 8 August 1955. Launch 172 has a plywood hull and better results were obtained the longer it was in the water.

The length of all fathometer arms were checked at the beginning of the field season and found to be within allowable limits. The reed were calibrated by the Wash. Office during the winter of 1954-55. Each day a speed count was taken prior to starting hydro.

FIELD WORK

All soundings were recorded on the foot scale. Lead line and bar check lines were checked at the beginning and ending of the field season. The correction obtained for bar check lines was negligible.

The leadline corrections for Ship Gilbert were recorded at the end of the season in Vol. 22, sheet Par-2154, and applied to the simultaneous soundings used for comparisons on the "C" & "D" scale, fath. no. 161SPX

Bar checks were used to determine velocity corrections for both the ship and the launches except for the C & D scale comparison mentioned above.

Five temperature and salinity observations were taken at the time of the ship bar checks in order to note any definite change in sounding velocity during the season. The salinity remained practically constant and the temperature showed a gradual increase and decrease. No definite trend could be correlated between temperature change, salinity or draft during the field season. A five foot initial setting was selected in order to give a small correction thru-out the range of depths sounded.

In view of the fore-going discussion, the Ship bar checks were meant for the season. Initial ~~xx~~ errors were entered in the sounding volumes when the initial drifted off the desired setting.

Launch 175 was used on sheet Par-2154A exclusively. The period of the survey was relatively short and frequent bar checks were taken. All comparisons were consistent except for 9 Sept. bar check. The sea conditions were not ideal and the results were not off enough to warrant rejection nor did its weight effect the mean excessively.

All bar checks were meaned. The initial was purposely at a value of zero to give a small correction to the area surveyed.

VELOCITY CORRECTION

PROJECT 1369

SHIP GILBERT

Sheets: PAR-2154 & PAR-2354
 10 May 1955 - 16 September 1955
 Fathometer 161-SPX

Depth Range (A-Scale) (Feet)	Correction (Feet)
0.0 - 33.0 ✓	-0.2 ✓
33.5 - 40.0 ✓	-0.4 ✓
40.5 - 55.0 ✓	-0.6 ✓

Depth Range (C-Scale) (Feet)	Correction (Feet)
70.0 - 73.0 ✓	+1.0 ✓
73.5 - 89.0 ✓	+1.5 ✓
89.5 - 93.0 ✓	+1.0 ✓
93.5 - 111.0 ✓	+1.5 ✓
111.5 - 125.0 ✓	+2.0 ✓

Depth Range (B-Scale) (Feet)	Correction (Feet)
35.0 - 40.0 ✓	+0.6 ✓
40.5 - 45.0 ✓	+0.4 ✓
45.5 - 50.0 ✓	+0.2 ✓
50.5 - 73.0 ✓	0.0 ✓
73.5 - 83.0 ✓	-0.5 ✓
83.5 - 90.0 ✓	-1.0 ✓

Depth Range (D-Scale) (Feet)	Correction (Feet)
105.0 - 120.0 ✓	+4.5 ✓

Comp EWR
 ✓ d OLD
 ✓ EWR

GEOGRAPHIC NAMES

Survey No. H-8172

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
<u>Massachusetts</u>			(for title)							HGN	1
<u>Nantucket Sound</u>			"	"						"	2
<u>Monomoy Island</u>			"	"						"	3
<u>Great Point</u>										"	4
<u>Tuckernuck Shoal</u>											5
<u>Halfmoon Shoal</u>											6
<u>Bishop and Clerks</u>										BGN	7
<u>Handkerchief Shoal</u>											8
											9
											10
For best placement of names, see chart 1209.											11
Tide station off sheet:											12
<u>Harwich Pt</u>											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25
											26
											27

Names approved 9-19-58

L. Heck

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8172...

Records accompanying survey:

Boat sheets ...1.; sounding vols. .32...; wire drag vols.; bomb vols.; graphic recorder rolls .31-~~En~~velopes special reports, etc. 1-Descriptive report, 1-Smooth sheet, and 1-Boat sheet overlay.
 1-Cahier - Miscellaneous Field Data, see H-8171.

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

Number of positions on sheet	4563
Number of positions checked	259
Number of positions revised	NONE
Number of soundings revised (refers to depth only)	102
Number of soundings erroneously spaced	807
Number of signals erroneously plotted or transferred	NONE
Topographic details	Time 1 hr.
Junctions	Time 30 hrs
Verification of soundings from graphic record	Time

Verification by D.J. Kennon Total time 7.15 hrs Date 11-19-59

Reviewed by [Signature] Time 124 Date 4-11-60

1994 soundings were revised on L-day thru Q-day as a result of the graph (No. 2) constructed by the verifier to utilize the bar check values for these days. D.J.K.

1-212

DIVISION OF CHARTS

REVIEW SECTION -- NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8172

FIELD NO. PA-2354

Massachusetts, Nantucket Sound, Vicinity of Monomoy I.

SURVEYED: August 1954-October 1956

SCALE 1:20,000

PROJECT NO. CS-369

SOUNDINGS: 808 Fathometer, handlead

CONTROL: Shoran

Chief of Party ----- F. B. Quinn, R. A. Marshall
Surveyed by ----- E. W. Richards, O. L. Doster
and N. E. Taylor
Protracted by ----- A. K. Schugeld
Soundings plotted by ----- A. K. Schugeld
Verified and inked by ----- O. J. Kennon
Reviewed by ----- I. M. Zeskind 11 April 1960
Inspected by ----- R. H. Carstens

1. Shoreline and Control

This is an offshore survey which lies north of Nantucket Island and west of Monomoy Island. The northern portion of Nantucket Island shown on the present survey originates with unreviewed air photographic survey T-11217 (1955).

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

2. Sounding Line Crossings

The sounding line crossings are in good agreement.

3. Depth Curves and Bottom Configuration

The usual depth curves supplemented by the 24 and 36 foot curves were adequately delineated. The bottom is fairly irregular. This irregularity is characterized by submarine features such as shoals, mounds, sand ridges and deeps.

4. Junctions with Contemporary Surveys

A butt junction was made with H-6534 (1934) on the north. An adequate junction was effected with H-6533 (1939-42) on the northwest. The junction with H-8171 (1954-56) on the east and H-8449 (1958) on the southeast will be considered in the reviews of those surveys. The project surveys on the south and west have not yet been received in the Washington Office.

5. Comparison with Prior Surveys

A. H-181 (1846), 1:20,000	H-2225 (1895), 1:20,000
H-455a (1854), 1:40,000	H-2530 (1901), 1:20,000
H-527 (1855-56), 1:30,000	H-2531 (1901), 1:20,000
H-1243 (1874), 1:20,000	H-2539 (1901), 1:20,000
H-1878 (1888), 1:20,000	H-2598 (1902), 1:20,000
H-1880 (1894-5), 1:20,000	H-2698 (1902), 1:40,000
H-1947 (1889), 1:20,000	H-3031 (1909), 1:20,000
H-1948 (1889), 1:20,000	H-5141 (1931), 1:20,000
H-2193 (1894), 1:40,000	H-5249 (1932), 1:40,000

The present survey falls within the area covered by the prior surveys. A comparison between the prior and present surveys reveals many changes in bottom configuration of the shoals falling within the limits of the present survey with resultant changes in depths. Half-moon Shoal has shifted as much as 150 meters northeastward. Handkerchief Shoal has extended its southwestern limits as much as 1/2 mile, and to a lesser extent, has extended its northwestern and southeastern limits. In the areas other than the shoals, only minor differences of 1-4 foot in depths are noted. The differences in depths between the prior and present surveys are attributed to the action of the current on the bottom and to the different methods of sounding - leadline on the prior surveys and fathometer on the present survey.

- (1) The 15[✓] foot sounding charted in lat. 41°32.4', long 70°11.5', falls in present depths of 21-22 feet and should be deleted from the chart. The sounding originates with Chart Letter 86,1909, which gives an uncertain location for the position of a tug drawing 15 feet of water at the time it struck an obstruction. The charted sounding is considered discredited by present depths. The tug probably struck bottom in the vicinity of the 19 foot shoal about 550 meters to the southeastward.

Several soundings 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.

6. Comparison with Chart 250 (Latest print date 8/24/59)
Chart 1209 (Latest print date 5/18/59)

A. Hydrography

The charted hydrography originates principally with the prior surveys previously discussed which need no further consideration, with the boat and smooth sheets of the present survey prior to verification and review, and with the U. S. Corps of Engineers' surveys of 1939 (Bps 33601 and 33609). In general, only minor differences of 1-3 ft. are noted between the charted and present survey depths. Attention, however, is directed to the following charted soundings:

- (1) The 18 foot sounding charted in lat. $41^{\circ}32.25'$, long. $70^{\circ}11.17'$ is probably from survey H-3031 (1909) where it is correctly shown as 19 feet. The present development showing depths of 27-28 feet does not conclusively disprove the 19 and it has been carried forward to the present survey.
- (2) The 31 foot sounding charted in lat. $41^{\circ}26.33'$, long. $70^{\circ}14.39'$, from a source not readily ascertainable, falls in present depths of 34-37 feet. The 31 foot sounding is not considered disproved by the present survey and should be retained on the chart. } *added to chart 265 from 1209 LAM*
- (3) The 22 foot sounding charted in lat. $41^{\circ}31.92'$, long. $70^{\circ}13.0'$, is discredited by the present development and is considered non-existent. No source could be ascertained for the charted sounding.

B. Aids to Navigation

The present survey positions of the aids to navigation are in substantial agreement with the charted positions and adequately mark the features intended, except that Bell buoy "12" charted in lat. $41^{\circ}27.26'$, long. $70^{\circ}14.10'$, was located about 240 meters south-southwestward on the present survey. In its charted position it better marks the feature intended.

7. Condition of Survey

- a. The sounding records are complete and comprehensive, except that it was necessary to revise the soundings on the smooth sheet and in the sounding volumes for L through Q days (red). This was necessary because failure to use recorded bar checks for these days in determining the fathometer corrections resulted in inaccuracies in depths.
- b. The smooth plotting was accurately done.
- c. No Descriptive Report was submitted by the Ship GILBERT for the 1955 and 1956 season's work.

8. Compliance with Project Instructions

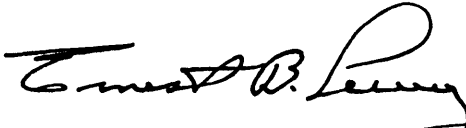
The survey adequately complies with the Project Instructions.

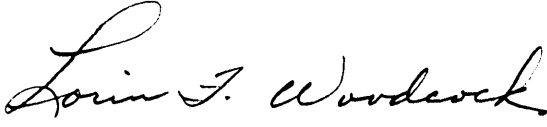
9. Additional Field Work Recommended

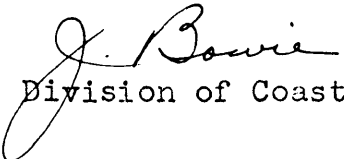
This survey is considered basic and no additional field work is recommended.

Examined and Approved:


Chief, Nautical Chart Branch


Chief, Division of Charts


Chief, Hydrography Branch


Chief, Division of Coastal Surveys

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

Chart Division: R. H. Carstens:

9 October 1958

Plane of reference approved in
32 volumes of sounding records for

HYDROGRAPHIC SHEET 8172

Locality Nantucket Sound Entrance, Mass.

Chief of Party: F. B. Quinn)
R. A. Marshall) 1954-56

Plane of reference is mean low water, reading

1.6 ft. on tide staff ~~xx~~ (1954) at Wynchmere Harbor

2.9 ft. ~~xx~~^{on} tide staff (1955) " "

3.2 ft. on tide staff (1956) " "

7.0 ft. below B.M. 1 (1954)

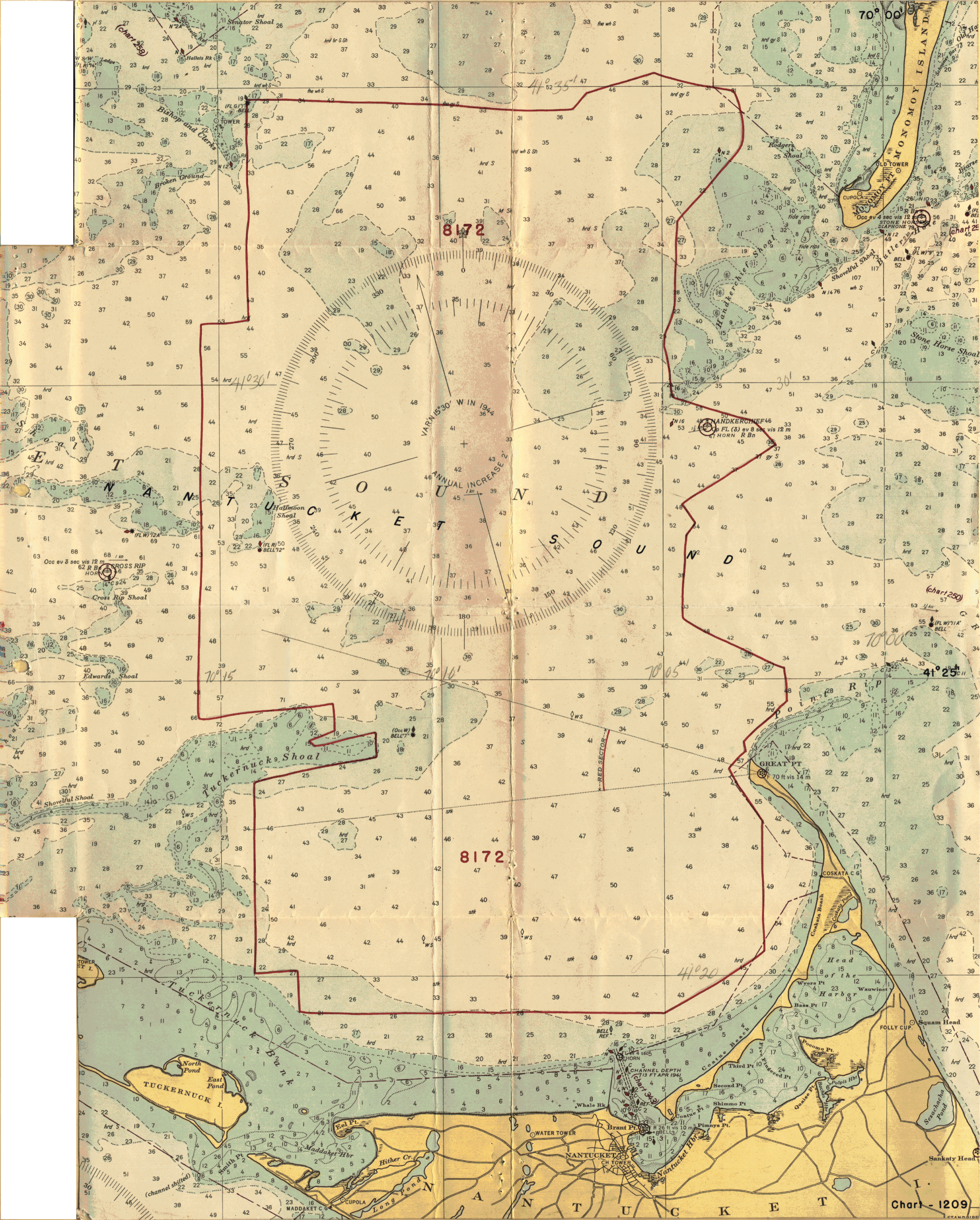
Height of mean high water above plane of reference is 3.7 feet.

Condition of records satisfactory except as noted below:

NOTE: Tide reducers for Positions 1L - 19L in Volume 9 have
been revised in red and verified.


Signature

Chief, Tides Branch



NAUTICAL CHARTS BRANCH

SURVEY NO. H-8172

Reviewed 11 Apr 60

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
10-28-58	1209	J. H. Eaton	<i>Partially Applied</i> Before After Verification and Review
1-13-59	70	R. E. Elkins	<i>partly applied</i> Before After Verification and Review <i>app thru the application to chrt 1209 Nov 58 -</i>
4/2/59	250	HCA & JTW	Before After Verification and Review <i>Partially</i>
5/1/59	1108	J.T.G.	Before After Verification and Review
5/11/59	1107	J.H. Eaton	<i>Partially Applied</i> Before After Verification and Review
5/13/59	71	JHE	Before After Verification and Review
3-7-60	1000	R. E. Elkins	Before After Verification and Review
5/16/60	343	T. H. Grant	<i>app thru chrt 71 dng 13 - no rev.</i> After After Verification and Review
1/19/61	1000	E. Thomas	<i>Inspected - No Hydro Charted - No Rev.</i> After After Verification and Review <i>Considered Fully Applied.</i>
2-28-61	1107	R. E. Elkins	Before After Verification and Review <i>Partly Applied</i> <i>Pending full application to chart 1209.</i>
2-28-61	71	R. E. Elkins	<i>after Ver & Rev - Partly applied pending full application to chart 1209.</i> <i>app'd thru 1107 dng 16.</i>
2-28-61	70	R. E. Elkins	<i>after Ver & Rev. - Partly applied pending full application to chart 1209.</i> <i>app thru chrt 1107 dng 16.</i>
10/6/61	250	R. Gense	Fully applied after verification and review
12-10-61	<small>NEW CHT</small> 265	R. K. de Lanch	<i>Complete application after V&R</i>
9/21/62	258	J. H. Eaton	<i>Comp. app'd. after V&R</i>
5/23/66	1108	J. H. Hall	<i>Exam after Verification & Review</i> <i>No Hydro charted, considered fully applied.</i>
12/8/67	1107		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.
7/13/66	71	F. R. Scarcella	<i>comp app'd</i> No Hydro on chart in area

M-2168-1

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8172

INSTRUCTIONS

- A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
 2. In "Remarks" column cross out words that do not apply.
 3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
1209	10/14/68	JR H Mall	Part Before After Verification Review Inspection Signed Via Drawing No. Exam, applied Review only
1209	7-2070	BS xxxxxx	Full Part Before After Verification Review Inspection Signed Via Drawing No. Appd thru chs 250, 258, + 265 where common. Remainder of survey appd direct
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
			Full Part Before After Verification Review Inspection Signed Via Drawing No.
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