

8367

& Additional Work

Diag. Cht. No. 1210-3

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT (HYDROGRAPHIC)

Type of Survey Hydrographic
Field No. ECFP-1856
Office No. H-8367 & Ad. Wk.

LOCALITY

State Rhode Island
General Locality Narragansett Bay
Locality Entrance Narragansett Bay

1956-63

CHIEF OF PARTY
M.T. Paulson & E.K. MacCaffrey

LIBRARY & ARCHIVES

DATE July 7, 1959

8367

& Additional Work

Area 1

Chts

13221

13222

13223

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-8367

Field No. ECFP- 1856

State Rhode Island

General locality Narragansett Bay

Locality Entrance Narragansett Bay

Scale 1:10,000 Date of survey 4 Sept. 1956- 22 OCT. 1957 ✓

Instructions dated 22/MEK, FP- East Coast ^{31 Jan 1956} ~~31 Jan 1956~~ & 22/MEK, FP-15 Feb. 1957

Vessel CS- 82 & CS-168 (Launch)

Chief of party Marvin T. Paulson

Surveyed by D.L.Campbell, R.A.Lewis, J.S.Baker, L.L.Seal, A.M.Cook and A.G.Davis

Soundings taken by ~~fathometer~~, graphic recorder, hand lead, ~~wire~~ Sounding Pole

Fathograms scaled by Party Personnel

Fathograms checked by Party Personnel

Protracted by A.G.Davis (ECFP)

Soundings penciled by A.G.Davis (ECFP)

Soundings in ~~fathoms~~ feet at MLW MLLW

REMARKS: Survey Limits: lat. 41° 25.25' ²⁵ to lat. 41° 32.65' N.
Long. 71° 18.7' W to long. 71° 25.30' ^{26.0} W.

[Signature]

KWW 11/1/91

DESCRIPTIVE REPORT
TO ACCOMPANY

HYDROGRAPHIC SURVEY H-8367, FIELD NO. ECFP-1856
Entrance Narragansett Bay, Rhode Island

PROJECT 13870

SCALE: 1:10,000

EAST COAST FIELD PARTY 1956 - 1957 M. T. PAULSON, CH. OF PTY.

SURVEYED BY: D. L. Campbell R. A. Lewis J. S. Baker L. L. Seal

A. M. Cook C. Tupper R. Garnett A. G. Davis

A. PROJECT

Work on project 13870 was executed in accordance with Instructions 22/MEK, FP-EAST COAST dated 31 January 1956 and Supplemental Instructions 22/MEK, FP-EAST COAST dated 15 February 1957.

B. SURVEY LIMITS AND DATES

The area covered by this survey is the entrance to Narragansett Bay, Rhode Island; east and west passages. The limits are from a line (Lat. $41^{\circ} 25.25' N$ to Lat. $41^{\circ} 32.65' N$), Long. $71^{\circ} 18.7'$ on the east to Long. $71^{\circ} 25.30'$ on the west.
26.3

Field work on this sheet began 4 September and ended 12 November 1956; resumed 17 April and ended 22 October 1957.

This survey makes junction on the north with prior surveys H-6970, 1944, Scale 1:10,000; H-7790, 1949, Scale 1:10,000; H-6444, 1939, Scale 1:10,000 and on the south with contemporary survey H-8315, 1956, Scale 1:10,000. and H-6444 (1939) Junction on the east is with contemporary surveys H-8366, 1957, Scale 1:10,000; and H-8394, 1957, Scale 1:5,000.

C. VESSELS AND EQUIPMENT

Launches CS-82 and CS-168 were used for this survey. Launch CS-82 was based at Wicksord, R.I., Fort Adams and "d" day (blue) vol. 28 is skiff - no graphs.

Goosebury Cove Rhode Island.

Launch CS-82 a 30 foot wooden launch has a turning radius of 50 meters at half rudder and standard speed.

Launch CS-168 was based at Wickford and Fort Adams Rhode Island, CS-168 an aluminum launch has a turning radius of 25 meters at half rudder and standard speed.

D. TIDE AND CURRENT STATIONS

Tide stations at Monahan's Cove lat. $41^{\circ} 25.34'$, long. $71^{\circ} 27.34'$ off Rhode Island Wickford, Rhode Island lat. $41^{\circ} 34.3'$, long. $71^{\circ} 26.7'$ sheet Fort Adams Rhode Island, lat. $41^{\circ} 28.89'$, long. $71^{\circ} 20.21'$ were used without time or height correction in reducing soundings. Where Monahan's Cove and Wickford tidal data was not available Providence State Pier No.1 were used in accordance with letter 36-11-15b.2 dated 1/29/56 and 36-380-15b dated 8/16/56.

See Tide Note

No current stations, within the limits of this survey were occupied this season.

E SMOOTH SHEET

THE smooth sheet projection was constructed by the Washington Office, the signal transfer and hydrographic plot were placed on the sheet by East Coast Field Party personnel. Key replotted by verifier.

The transfer of shoreline and topographic details was verified in accordance with 757.

It should be noted the margin does not meet specification, as the projection was not large enough for ample space. It should also be noted the projection of sheet H- 8367 had to be shifted 30" east, by order of Processing Officer in charge of smooth sheet plotting at time of this sheet. The plotting of smooth sheet was continued, thus causing the narrow margin.

Launch 168 work has "a" and "b" blue color days for both 1956 and 1957

F CONTROL STATIONS

The following triangulation control was used on this survey:

STATION	G. P. PAGE	VOL. NO.	CH. OF PTY.
JAMES ESTATE FLAGPOLE, 1943	71	1	B.H.R
NEWPORT CITY HALL DOME, 1934	62	1	W.D.P
ROSE ISLAND LIGHTHOUSE, 1888	58	1	A.T.M
BEAVERTAIL LIGHTHOUSE, 1869	40	1	S.C.McC
NAVAL TRAINING STATION, CENTER TANK, 1943	1	1	B.H.R
GULL ROCKS BEACON, 1932	60	1	
CUPOLA, 1932	71	1	BH.R
WAR COLLEGE CUPOLA, 1915	60	1	R.I. GEOD.S

STATION

G,P. PAGE VOL.NO. CH OF PTY.

FORT ADAMS LIGHT, 1934	59	1	W. D. P
NAVAL COLLEGE DOME, 1888	137	1	R.I. GEOD.S
DUTCH ISLAND LIGHTHOUSE, 1868	40	1	S.C. Mc C.
NARRAGANSETT CHURCH SPIRE, 1912	139	1	R.I. GEOD.S
GETTY, 1940			
GOAT ISLAND NORTH TANK, 1943	70	1	B.H.R
WHALE ROCK BEACON, 1940	40	1	P.L.B
NEWPORT CHANNING MEMORIAL CHURCH SPIRE, 1934	63	1	L.F.W
IDA LEWIS LIGHT, L(#3	59	1	L.F.W
WINDMILL, 1912	138	1	R.I. GEOD.S
NEWPORT, St. MARY'S CHURCH SPIRE, 1934	63	1	W.D.P
JAMESTOWN BRIDGE EAST BEACON, 1943	91	1	R.I.F.N
GOULD ISLAND TANK, 1932	40	1	W.D.P
SOUTHEAST WAR COLLEGE TANK, 1943	70	1	R.I.B.H.R
PLUMB BEACH LIGHTHOUSE, 1897	94	1	R.I.D.B.W
MILL, 1915	141	1	N.H.H
NEWPORT DAVIS HOUSE CUPOLA, 1912	139	1	R.I. GEOD.S
GOAT ISLAND LIGHTHOUSE, 1888	60	1	W.D.P
SOUTH, 1943			F.N.
JAMESTOWN BRIDGE WEST BEACON, 1943	91	1	F.N.
JAMESTOWN STANDPIPE, 1912 Destroyed - see review	139	1	L.F.W
BULL POINT CUPOLA, 1915	61	1	L.F.W
ROME, 1912	94	1	R.I. GEOD. S
ROSE ISLAND AERO LIGHT, 1934	60	1	W.D.P
TALL STACK, WATERFRONT, 1932	61	1	W.D.P
ROSE ISLAND TANK, 1940	40	1	P.L.B
GOAT ISLAND SOUTH TANK, 1943	70	1	B.H.R
NAVAL TRAINING STATION, NORTH TANK, 1943	70	1	B.H.R
NEWPORT TRINITY CHURCH SPIRE, 1934	63	1	L.F.W
NAVAL TRAINING STATION SOUTH TANK, 1943	70	1	B.H.R
CASTLE HILL LIGHTHOUSE, 1897	40	1	R.I. GEOD.S
NEWPORT TRINITY CHURCH SPIRE, 1934	63	1	W.D.P

All topographic control was located on photogrammetric manuscripts T-11433, T-11432 and Graphic control sheets Ph-1 N-56, Ph-1 M-56 using standard methods. This control was located by Photo Party No. 1 based Providence, Rhode Island. Photogrammetric location were made on bluehos of map T-11432, T-11433 was not available in Wash. office

G. SHORELINE AND TOPOGRAPHY * See review Sect. 4 F

Shoreline topographic detail was obtained from photogrammetric manuscripts, T-11432, T-11433, and T-10500 and T-10499. *No changes here plotted*
 The only changes in shoreline or topographic detail *changes based during verification.*
 other than those shown on the above mentioned manuscripts are around Gould Island lat. $41^{\circ} 32.00$ long. $71^{\circ} 20.8$ where there are differences, notable piers and bulkhead. *See Attached Letters*
 Changes caused by filling and building of piers. *801-NVC 3/24/61 and GLS:es 3/3/61*
 The low water line was not defined due to steep slopes and rocky shoreline conditons.

Lines are run inshore as close as SAFETY PERMITS.

—3—

Gould Island Blueprint

42594 is filed with the bathograms of H-8367

H. SOUNDINGS

All soundings on this sheet were made by fathometers as listed in section C, except for detached soundings taken in connection with bottom sampling or shoal investigation when a leadline was used. EDO 201, EDO 202, and #77 of 800 type.

I. CONTROL OF HYDROGRAPHY

All hydrographic control was visual by sextant angles on shore objects. Positions were usually taken at one and one half minute interval.

J. ADEQUACY OF SURVEY

This survey is complete within the limits defined and adequate to supercede all prior surveys for charting purposes. Junctions with adjoining surveys are in good agreement and depth curves can be drawn. *See remark*

K. CROSSLINES

Crosslines were run at about 6 to 8% of the total sounding lines, and were in good agreement.

L. COMPARISON WITH PRIOR SURVEYS

The survey was compared with prior surveys H-1790, 1887 1:10,000, H-3403, 1:10,000, 1912 H-5554, 1:5,000, 1934 and H-5621, 1:5,000. In general the soundings on the old surveys are in good agreement with those of the new, except the differences listed below.

- 1- ~~THE 18 foot curve lat. $41^{\circ} 31.21$ long. $71^{\circ} 24.32$, shows a westward movement of 200 meters.~~ *disregard*
- 2- Shoaling at lat. $41^{\circ} 29.8$, long. $71^{\circ} 23.8$, the area southeast of Dutch Island, shows shoaling, the 30 foot curve has moved nearly across the channel. *Comparison indicates conditions in agreement with H-3403.*
- 3- The 36 foot curve lat. $41^{\circ} 28.85$, long. $71^{\circ} 24.38$ shows a west movement of 150 meters. *re-examination of hydrographic information of present indicates conditions similar - disregard.*
- 4- Pier lat. $41^{\circ} 31'.93$, long. $71^{\circ} 21.72$, has been destroyed present position of rock is signal ~~cur~~ *6cm*.
It is believed that all known shoals were proved.
Junctions with prior surveys are in fair agreement.

M. COMPARISON WITH CHART

A comparison with chart No. 236, 8th edition January 1953, print date 9 March 1956, shows no important differences except those listed in section N of this report.

N. DANGERS AND SHOALS

Following is a list showing a comparison with the prior surveys, a comparison with the chart as well as the dangers and shoals found within the limits of the survey. The locations and depths listed under "Present Survey" are from the sheet.

DEPTH

Sand

5

Round opening is
blasted. N. 41° 30.4'
W. 71° 22.7'

O. COAST PILOT INFORMATION

There are Changes necessary in the Coast Pilot Notes. This is reported in (Appendix E).

P. AIDS TO NAVIGATION

Fixed aids to navigation were reported by Photo Party No.1 on form 567. (CL 181/57) (CL 552/59) (CL 183/57) (CL 207/56)

Following is a list of all floating aids to navigation:

NAME OR NUMBER	LATITUDE & LONGITUDE	DEPTH OF WATER	VOL. & POS	DATE LOCATED
DUTCH ISLAND SOUTH END GONG BOUY ✓	41° 29.68N ✓ 41° 24.33W ✓	Red & Black 68 according to light list, 1956	4- 681-	10/2/56-
WHALE ROCK GONG BOUY # 3 { Lighted as of 1957. See chart 236	41° 26.65N ✓ 71° 25.2W { Lighted as of 1957	60 { Mariners' Weekly Notice 32 (3828) 1957	95e- vol. 2 ✓	9/18/56 ✓
PLUM BEACH SHOAL BOUY 1EB	41° 31.44N ✓ 41° 24.37W ✓	27 ✓	vol. 2 ✓ 155e-	9/18/56 ✓
BEAVERHEAD POINT SHOAL BOUY 2	41° 29.77N ✓ 71° 23.97W ✓	35	vol. 12 ✓ 126a -	11/6/56
DUTCH ISLAND BELL ✓ BOUY 2 ✓ RED	41° 30.5N ✓ 71° 24.2W	29	vol. 5 ✓ 15n-	10/4/56 ✓
BRENTON REEF ✓ GONG BOUY 4 ✓	41° 26.58N ✓ 71° 21.79W ✓	34 ✓ red	vol. 15 ✓ 21ha ✓ 26	4/19/57
BUTTER BALL ✓ BELL BOUY 4 1/2 ✓	41° 27.44N ✓ 71° 22.01W ✓	called "6" on chart 104 ✓ No. 236	vol. 18 ✓ 34ra ✓	5/7/57
SEAL LEDGE LIGHTED ✓ BELL BOUY 2 ✓	41° 26.09N ✓ 71° 20.83W ✓	Nun buoy 30 according to light list	vol. 26 ✓ 47kb ✓	6/21/57
SEAL LEDGE BOUY 2 ✓ NOT LISTED IN LIGHT	41° 26.12N ✓ 71° 20.84W ✓	34	vol. 26 ✓ 46kb -	6/21/57
KETTLE BOTTOM ROCK ✓ GONG BOUY 1a ✓ (black)	41° 28.31N ✓ 71° 22.34W ✓	In 12 ft. says Lite No. 64 List, 1957 and 127 on chart 236	vol. 19 ✓ 11sa ✓	5/8/57
BULL POINT GONG ✓ BOUY 1B ✓	41° 28.66N ✓ 71° 21.27W ✓	called "9" on chart 93 ✓ No. 236	vol. 14 ✓ 2ga -	4/18/57
BULL POINT LIGHTED ✓ BELL BOUY 1 ✓	41° 28.81N ✓ 71° 20.98W ✓	called "11" on chart 171 ✓ No. 236	vol. 14 ✓ 1ga -	4/18/57
ROSE ISLAND NORTH ✓ LIGHTED BELL BOUY 6 ✓	41° 30.24N ✓ 71° 20.54W ✓	called "12" on chart 51 No. 236	vol. 34 ✓ 27xb -	7/31/57 ✓
GOULD ISLANDS SOUTHWEST ✓ SHOAL BOUY 2 ✓ (red N-2)	41° 31.72N ✓ 71° 20.78W ✓	23 { Boat sheet claims that pos. 186 "bc" is N-2	vol. 35 ✓ 187bc -	8/13/57
CAN BOUY NOT LISTED	41° 32.24N ✓ 71° 20.69 ✓	22 obst. buoy	vol. 37 27ec	10/22/57

NAME OR NUMBER	LATITUDE & LONGITUDE ^{26.63}	DEPTH OF WATER	VOL. & POS.	DATE LOCATED
NEWTON ROCK ✓	41° 26.83N ✓		vol. 35 ✓	
BELL BOUY ✓	71° 24.05W ✓	30 ✓	20yb ✓	8/1/57
JONES LEDGE ✓	41° 27.75N ✓		vol. 7 ✓	
BOUY ✓ Can Buoy	71° 25.18W ✓	38 ^{Can Buoy} Red & Black	33r ✓	10/9/57 ⁶

Q. LANDMARKS FOR CHARTS

Landmarks for charts were submitted by Photo Party No. 1
on form 567 See section P. above

R. GEOGRAPHICAL NAMES

Geographical names, if any new ones, were reported ^{by} Photo Party No. 1

S. SILTED AREAS

Not applicable

T. BY PRODUCT INFORMATION

Not applicable

U-Y MISCELLANEOUS

Not applicable The privately maintained mooring buoy, just South
of the East end of Jamestown Bridge, is not shown
on Chart # 236. (pos. 22 "t", vol. 7)

Z. TABULATION OF APPLICABLE DATA

Abstract of velocity corrections is submitted in the Appendix.
Fathometer report attached as Appendix F, of this report.
Aspecial Fathometer report on stays, was submitted season,
1956 dated 3/5/57 To THE DIRECTOR. Strays

Respectfully submitted,

Allen G. Davis

Allen G. Davis, C&GS

ATTACHMENTS

APPENDIX

- A. LIST OF CONTROL STATIONS
- B. ABSTRACT OF VELOCITY CORRECTIONS
- C. STATISTICS
- D. TIDAL NOTE
- E. CO AST PILOT REPORT
- F. FATHOMETER REPORT
- G. APPROVAL SHEET

T-11432 photogrammetric locations on blue line.
T-11433 not available in wash. office.

APPENDIX A

LIST OF CONTROL STATIONS ON SHEET H-8367

STATION	ORIGIN	STATION	ORIGIN
Ace T	T-11432	Gas Topo	Hydro Vol. 13 PG. 18
Ale	PH-1N-56	Gem T	PH-1N-56
All Δ	PH-1N-56	Get Δ	T-11432
Ames Δ	T-11433	Goa Δ	T-11433
Amy T	PH-1M-56 ✓	Got T	PH-1M-56
And Δ	T-11433	Gum T	PH-1N-56
Anni T	PH-1M-56	Guy	Hydro Vol. 6. PG. 12
Ank Δ	T-11433	Hal Δ	T-11432
Arm T	PH-1N-56	Ham T	T-11433
Ask T	PH-156Na	Han Δ	PH-1N-56
Bag T	PH-1-N-56	Hat T	PH-1M-56
Bat T	T-11433	Hen T	PH-1M-56
Bea Δ	T-11432	Hex Topo	Hydro Vol. 13 PG. 17-20
Bel T	T-11433	Hill Δ	T-11433
Boa T	PH-1M-56	Him T	PH-1N-56
Bob T	PH-1M-56	Hod T	PH-1M-56
Bro T	T-11433	Hoe T	PH-1M-56
Bum T	PH-1N-56	Hub T	PH-1N-56
Cab T	T-11432	Hol T	T-11433
Cat T	PH-1N-56	Hut T	T-11433
Cast Δ	T-11433	Ice T	T-11432
Cen Δ	PH-1N-56	Ida Δ	T-11433
Cry T	PH-1N-56	Ire Δ	T-11433
Cup Δ	T-11433	Irk T	PH-1N-56
Cupo Δ	T-11433	Ill Δ	T-11432
Cur T	PH-1M-56	Ink T	T-11433
Con Δ	PH-1N-56	Jam Δ	PH-1M-56
Dam Δ	T-11432	Jap T	PH-1M-56
Day T	T-11432	Jar T	T-11432
Doc T	PH-1N-56	Jib T	PH-1N-56
Dog T	PH-1M-56	Jim T	PH-1M-56
Dome Δ	T-11433	Ked T	PH-1M-56
Dut Δ	T-11432	Key T	PH-1N-56
Ear T	PH-1N-56	Kid T	T-11432
Eat T	T-11432	Lad T	T-11433
Egg T	PH-1N-56	Lag	T-11433
Elm T	PH-1M-56	Lam T	PH-1N-56
End T	T-11433	Lan Δ	PH-1N-56
Eon T	PH-1M-56	Lar T	T-11433
Fat T	T-11432	Leg Δ	PH-1N-56
Fen	Hydro Vol. 13 PG. 18	Lip T	T-11433
Fin T	PH-1M-56	Lug T	PH-1M-56
Fly T	PH-1N-56	Lum Δ	PH-1M-56
Fry T	PH-1M-56 T-10499	Man T	T-11432
Gab T	T-11433	Maw T	PH-1M-56
Gan Δ	T-11432	Men T	T-11432

No description seems to
exist for O Fen

* See pos. 55 thru 58 "f" (blue)
vol. 29, pp. 14-15

APPENDIX A (CON'T)
LIST OF CONTROLS

STATION	ORIGIN	STATION	ORIGIN
MID T	PH-1N-56	TEN T	T-11432
MIL A	PH-1N-56	TOE T	T-11433
NER T	T-11433	TON T	T-11432
NEY	T-11433	TOW Topo	Hydro VOL-10 pg. 55, 59, 65
NEW A	T-11433	TRI A	T-11433
NIL T	T-11432	USE T	T-11432
NOR T	T-11433	VAL A	PH-1N-56
NUB T	PH-1N-56	VEN T	T-11433
OAK T	T-11432	VET T	T-11432
OAT A	PH-1N-56	WAL T	T-11433
OIL T	PH-1N-56	WAR T	T-11432
OLA T	T-11433	WAX T	T-11432
ONE T	T-11433	WER T	T-11432
OUT A	T-11432	WOO T	T-11432
OWL T	PH-1M-56 ^v	YAM T	T-11432
OWN A	PH-1M-56	YAK T	PH-1M-56
PAL T	T-11432	YES T	PH-1N-56
PAR T	T-11433	ZAG T	PH-1M-56
PET T	PH-1N-56	ZIG T	T-11432
* PIP PIP	PH-1N-56	ZOO T	T-11432
POL A	PH-1N-56		
PUP T	PH-1M-56		
QUO T	T-11432		
RAN T	T-11433		
RAM T	T-11432		
RED T	T-11433		
ROC A	PH-1M-56		
ROM A	PH-1M-56		
ROSE A	PH-1N-56		
ROM A	PH-1M-56		
* RUN T Roy T	PH-1N-56 T-11433		
RUM T	T-11433		
SAG T	PH-1M-56		
SAL T	T-11432		
SAW T	T-11433		
SEE T	T-11433		
SHO A	T-11433		
SIX T	T-11432		
SOP T	PH-1M-56		
SOT T	T-11433		
SUB T	PH-1N-56		
TAC A	T-11433		
TAN A	T-11433		
TAT A	PH-1N-56		
TAX T	PH-1N-56		
TEL T	T-11433		
TAB T			

~~A~~ PIP is Jamestown Stand pipe, 1954

APPENDIX B
ABSTRACT OF VELOCITY CORRECTIONS
PROJECT 13870
SHEET H-8367 (ECFP-1856)

GROUP 1

LAUNCH CS-168

FATHOMETER EDO. 255#201

SHEET: H-8367

11/6 11/7/56

TABULATION OF RESULTS (SEE NOTE BELOW)

DEPTHS (ft.)	CORRECTIONS (ft.)
0 to 38.0	0.0
38.1 to 70.0	± 0.2

NOTE: Various Initial settings were used throughout the season. It is to be noted that whenever the initial was changed, the fish unit was raised or accordingly to keep the velocity correction at zero. ✓

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GROUP 11

LAUNCH CS-82

FATHOMETER 808 #77

SHEET- H-8367

Phase corrections the same for all dates.

PHASE CORRECTIONS

(ft.)

B-range

all depths

0.0

C-range

" "

-0.4

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-

-

-

-

-

-

GROUP 111

LAUNCH CS-82

FATHOMETER EDO #202

SHEET H-8367

9/4 -10/25/56

TABULATIONS OF RESULTS (SEE NOTE BELOW)

DEPTHS (ft.)	CORRECTIONS (ft.)
0.0 to 14.0	+ 0.0
14.1 to 21.0	+ 0.2
21.1 to 27.5	+ 0.4
27.5 to 36.0	+ 0.6
36.1 to 46.0	+ 0.8
46.1 to 54.0	+ 1.0
54.1 to 59.0	+ 1.2
59.1 to 64.0	+ 1.4
64.1 to 69.0	+ 1.6
69.1 to 70.0	+ 2.0

NOTE: VARIOUS Initial settings were used.

APPENDIX B (CONT'D)
ABSTRACT OF VELOCITY CORRECTIONS
PROJECT 13870
SHEET H-8367 (ECFP-1856)

GROUP IV

LAUNCH CS-82 FATHOMETER NO. EDO #202 SHEET H-8367
For all dates in which depths over 70 feet were used

TABULATION OF RESULTS (SEE NOTE BELOW)

DEPTHS (ft.)	CORRECTIONS (ft.) (B- Range)
70.0 to 72.0	+ 2.2
72.0 to 81.0	+ 2.4
81.0 to 86.0	+ 2.6
86.0 to 88.0	+ 2.8
88.0 to 93.0	+ 3.0
93.0 to max. depts	+ 3.2

NOTE: (a) Seebar check 10/2/56, wday, launch CS-82.
(b) Phase correction between A-B-range is 0.0
(c) Initial setting is 1.0 feet

GROUP V

LAUNCH CS-82 FATHOMETER EDO. #202 SHEET H-8367
(VIBROPAC)

5/22 / 7/30 to end of season

*Appar. used for launch #202
H-8366 - 1st day - Sept 26, 1957-ED0*

TABULATION OF RESULTS

DEPTHS (ft.)	CORRECTIONS (ft.)
0.0 to 18.0	+ 0.6
18.1 to 24.5	+ 0.2
24.6 to 30.5	+ 0.4
30.6 to 37.0	+ 0.6
37.1 to 42.0	+ 0.8
42.1 to 48.0	+ 1.0
48.1 to 54.5	+ 1.2
54.6 to 60.0	+ 1.4
60.1 to 66.0	+ 1.6
66.1 to deeper	+ 2.0

GROUP VI

LAUNCH CS-82 FATHOMETER EDO #202 SHEET H-8367
7/10 to 7/30/57 VIBROPAC 60 and 61 cycle

TABULATION

CORRECTIONS: 0.0 All depths.

*(Graph of Velocity Corrections in this D.R.
All sheets 4-17-1957-7-10-57 using kato
60.5 cycles)*

APPENDIX B (CON'T)
ABSTRACT OF VELOCITY CORRECTIONS
PROJECT 13870 *Group VI*

LAUNCH CS-82
4/17-7/29/57

FATHOMETER EDO #202
KATO CONVERTER 60.5 cycle

SHEET H-8367

TABULATION OF RESULTS

DEPTHS (ft.)	CORRECTIONS (ft.)
0.0 to 46.0	+ 0.0
46.1 to 54.0	+ 0.2
54.1 to 62.0	+ 0.4
62.1 to 66.0	+ 0.6
66.1 and deeper	+ 1.0

LAUNCH CS-82
4/17-4/24 5/10/57

GROUP VII
FATHOMETER EDO #201
KATO CONVERTER

SHEET H-8367
60 cycle

TABULATION OF RESULTS

DEPTHS (ft.)	CORRECTIONS (ft.)
0.0 to 15.0	- 0.0
5.1 to 12.0	- 0.2
12.1 to 23.0	- 0.4
23.1 to 30.0	- 0.6
30.1 to 38.0	- 0.8
38.1 to 66.0	- 1.0
66.1 to deeper	- 1.6

GROUP VIII

LAUNCH CS-82
4/25-5/8-5/14 5/17
5/23 5/24 6/3/57

FATHOMETER EDO #201

SHEET H-8367

KATO AND VIBROPAC: 60 cycle

TABULATION

CORRECTIONS 0.0 for all depths.

VELOCITY CORRECTIONS

U.S. Coast and Geodetic Survey

Ship East coast Field Party

Merrill T. Paulson, ICdr. Comdg.

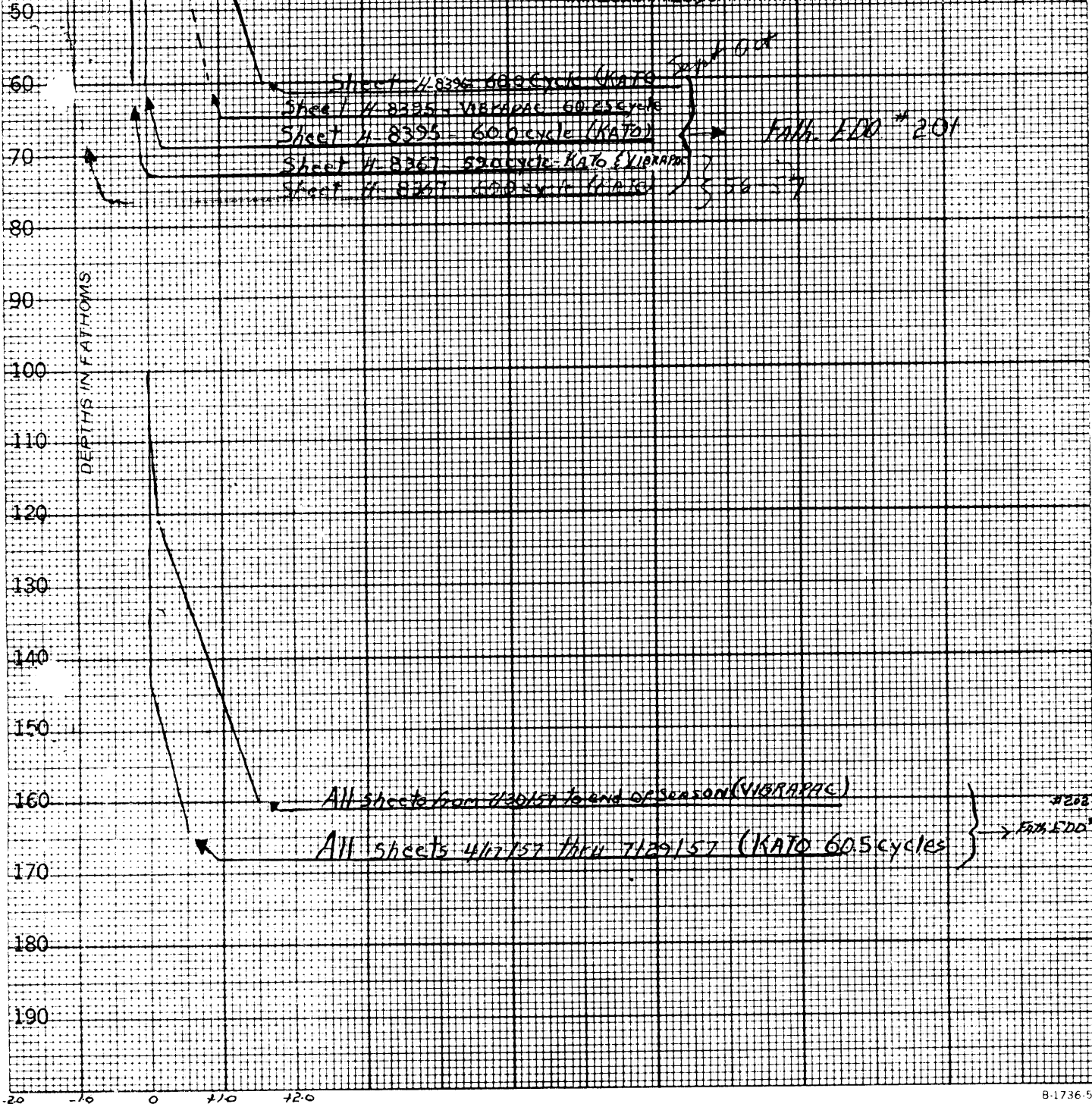
These corrections are to be used
between 4/17 1957 and 10/25 1957

in the locality Narragansett Bay & Vicinity

Rhode Island - Project 13879

for hydrographic surveys Nos. H-8367

BCRP-1856



APPENDIX C STATISTICS

DATE	VOL. NO.	DAY LTR.	NO. D.P.	POSITIONS FATH	STA. MI. SDG.
Launch CS-82 (purple)					
9/4/56	1	a	0	29	5.6
9/12/56	1	b	0	35	6.1
9/13/56	1	c	0	74	12.7
9/17/56	1	d	6	24	3.1
9/18/56	2	e <i>Cambell</i>	2	158	24.2
9/19/56	2&3	f	0	65	11.6
9/20/56	3	g	23	24	3.5
9/21/56	3	h	0	80	12.2
9/25/56	3&4	j	0	100	13.7
10/1/56	4	k	4	72	8.9
10/2/56	4	l	1	88	13.8
10/3/56	5	m <i>Cambell</i>	1	84	11.5
10/4/56	5	n	20	104	13.4
10/5/56	6	p	13	111	13.3
10/8/56	6	q	24	91	6.5
10/9/56	7	r	2	65	5.8
10/10/56	7	s	0	39	5.1
10/15/56	7	t <i>Camb</i>	101	0	0.0
10/16/56	8	u <i>Cambell</i>	0	64	9.2
10/17/56	8	v	0	45	5.3
10/18/56	8&9	w	2	155	17.4
10/22/56	9	x <i>Com - Tupper</i>	53	0	0.0
10/24/56	9&10	y	0	183	18.5
10/25/56	10	z <i>Cambell</i>	0	79	7.4
10/26/56	10	aa <i>Cambell</i>	3	47	4.3
10/31/56	10&11	ba <i>Cambell</i>	9	46	4.1
11/1/56	11	ca	0	17	1.4
11/2/56	11	da <i>R. R. Lauer</i>	0	32	3.2
11/5/56	11	ea <i>R. A. Lums</i>	6	143	12.3
4/17/57	14	fa	0	139	16.7
4/18/57	14&15	ga	5	85	11.0
4/19/57	15	ha	1	95	13.8
4/22/57	16	ja	52	0	0.0
4/24/57	16	ka	33	61	3.3
4/25/57	16	la	2	63	8.2
4/29/57	17	ma	8	119	17.1
5/1/57	17	na	0	45	6.6
5/3/57	18	pa	0	18	3.1
5/6/57	18	qa	0	65	7.9

APPENDIX C (CON'T)
STATISTICS

DATE	VOL. NO.	DAY LTR.	NO. D.P.	POSITIONS FATH.	STA. MI. SDGS.
Launch CS-82					
5/7/57	18	ra	2	101	9.3
5/8/57	19	sa	17	52	7.1
5/9/57	19	ta	1	126	17.3
5/10/57	20	ua	4	110	13.8
5/14/57	20	va	0	67	9.9
5/16/57	21	wa	1	35	4.1
5/17/57	21	xa	0	48	6.6
5/22/57	21	ya	0	68	7.1
5/23/57	21&22	za	0	84	11.0
5/24/57	22	ab	11	11	1.0
5/27/57	22	bb	0	134	18.4
6/3/57	23	cb	0	101	10.1
6/10/57	23	db	0	12	1.8
6/11/57	23	eb	0	58	7.5
6/13/57	24	fb	0	145	17.8
6/17/57	24	gb	0	35	5.0
6/18/57	25	hb	0	127	18.6
6/20/57	25&26	jb	2	164	21.1
6/21/57	26	kb	3	131	14.3
6/26/57	27	lb	0	10	0.7
6/27/57	27	mb	0	145	14.4
7/1/57	29&30	nb	10	100	11.8
7/2/57	30	pb	4	128	16.1
7/3/57	31	qb	0	75	10.3
7/15/57	31	rb	50.0 at	128	9.8
7/19/57	32	tb	50.2 @ 50 ft.	84	8.0
7/22/57	33	ub	1	99	9.2
7/23/57	33	vb	0	34	5.2
7/26/57	34	wb	7	30	2.6
7/31/57	34	xb	1	26	1.8
8/1/57	35	yb	8	26	2.7
8/2/57	35	zb	7	20	1.7
8/13/57	35&36	bc	38	258	19.1
8/20/57	36	cc	5	24	2.5
10/21/57	37	dc	0	6	0.2
10/22/57	37	ec	3	33	8.1
8/7/57	35	ac	1	11	0.9
Launch CS-82		TOTALS	507	5,590	668.7

APPENDIX C (CON'T)
STATISTICS

Launch CS-168						
DATE	VOL	DAY	NO.	POSITIONS	STA. MI.	
	NO.	LTR.	D.P.	FATH.	SDGS.	
Launch CS-168 (Blue)						
11/6/56	12	a) <i>R. to Lewis</i>	33	126	6.5	<i>Edo #201 - + corr indicated</i>
11/7/56	13	b	3	181	15.9	
5/13/57*	28	a	52	54	2.6	
5/22/57*	28	b	30	0	0.0	
5/23/57*	28	c	33	0	0.0	
5/24/57*	28	d	4	25 ← <i>No fathogram</i>	1.3	
6/18/57*	28	e	65	0	0.0	
6/20/57*	29	f	65	0	0.0	
Launch CS-168	-----	TOTALS	285	386	26.3	
Launch CS-82	-----	TOTALS	507	5590	668.7	
TOTALS BOTH LAUNCHES			792	5,976	695.0	
				792		
				6,768		

Square miles of sounding -22

APPENDIX D

TIDAL NOTE FOR HYDROGRAPHIC SURVEY H-8367 (ECFP-1856)

All tidal data for reduction of soundings was obtained from portable tide gages at Fort Adams, R.I. Wickford, R.I. and Monahan's Cove, Narragansett, R.I. Providence State Pier No. 1, Providence, R.I.

FORT ADAMS ✓

Gage: lat. $41^{\circ} 28.89'N$
long. $71^{\circ} 20.23'W$

Staff: Mean low water corresponds to 5.8 feet on staff.

Correction: No time or heights corrections were applied to the results obtained from the gage in reducing soundings.

WICKFORD (Not within limit of H-8367)
Tide Zone #2 according to pos. 100-101 "W" day, Vol. 9, p. 4 (Wickford Tide Range = 3.8 ft.)

Gage: lat. $41^{\circ} 34.3'N$
long. $71^{\circ} 26.7'W$

Staff: Mean low water corresponds to 2.3 feet on staff.

Correction: No time or height corrections were applied to the results obtained from the gage in reducing soundings.

MONAHAN'S COVE (Not within limit of H-8367)
Tide Zone #2 according to boat sheet

Gage: lat. $41^{\circ} 25.35'N$
long. $71^{\circ} 27.35'W$

Staff: Mean low water corresponds to 0.5 feet on staff.

Correction: No time or height corrections were applied to the results obtained from the gage in reducing soundings.

PROVIDENCE STATE PIER No. 1 (Not on H-8367)

Gage: lat. $41^{\circ} 48.43'N$
long. $71^{\circ} 24.05'W$

Staff: Mean low water corresponds to 0.0 feet on staff.

Correction: Time correction -10 minutes
Height ratio 0.8.

The method of determining tide reducers is in accordance with the following letters;

36-292-15b dated 2 July 1956
36-380-15b dated 16 August 1956
36-11-15b.2 dated 29 January 1957

Latitude $41^{\circ} 28'$ seems to be the dividing-line between tide zones one and two.

APPENDIX E
COAST PILOT REPORT
ATLANTIC COAST

Section B - Cape Cod to Sandy Hook

Fifth (1950) Edition

Page 202, Line 5: read; has depths of 13 to 29 feet.

Page 202, Line 7: read; has a least depth of 11 feet.

Page 203 Lines 40& 41: read; A daybeacon, an iron spindle.

Page 206, Line 19 Delete,; Rose and

Page 206, Lines 35-37: read; Coddington Point, is a military establishment.

APPENDIX F
FATHOMETER CORRECTIONS
PROJECT 13870
SHEET H-8367 (ECFP-1856)

DESCRIPTIVE REPORT

Project instructions dated 31 January 1956/22 MEK EP-East Coast, Supplemental Instructions dated 15 February 1957, directed that a hydrographic survey be made in the Narragansett Bay area, Rhode Island.

Hydrography in this area was accomplished during the period 4 September 1956 to 22 October 1957.

Numerous fathometers bar checks were taken during the season, the results of these checks were tabulated for the computation of the fathometer for this sheet.

METHOD

The fathometer corrections were determined in accordance with Hydrographic Manual, Section 55, Page 507-542.

To obtain instrumental correction, bar checks were taken, these checks were taken at anchor or drifting. SHOAL water comparisons were made between leadline, 808j or Edo 255 fathometers. The depth of the transducer was measured before the beginning of season and initial was set to this depth. When necessary in shbal water the transducer was raised and the initial accordingly, to keep the velocity correction to a minimum. The bar used was constructed of aluminum 8 inches wide, 10 feet long, 3/8" thick, mounted on a galvanized pipe, with the bar checks cables attached to an eye in both ends.

A Kato Converter and Vibrapac were used for power supplies for the Edo-255 fathometers. By changing the frequency output of the Kato, the correction of the fathometer could be regulated to almost zero.

The velocity curves and abstracts are submitted in the Appendix of this report.

See H-8394 D.R. App B for FATH Rep/57
Also FATH Rep #137/56

"va" day (vol. 20) has a bar check. "wa" day (vol. 21) has no bar check. The converter was set on 59.00 both days. Index correction was zero on both days. Still, on "va" day echo-correction was used. On "wa" day echo correction was not used. (Note Append. "B", Velocity Abstract, This D.R.) If correction is zero when the converter was on 59.00, then why would correctors be used on "va" day?

APPENDIX G
APPROVAL SHEET
SHEET H-8367 (ECFP-1856)

The record correction, fathometer corrections, fathograms scanning and all field work were supervised by Marvin T. Paulson.

The fathograms were scanned prior to plotting soundings on boat sheet, and checked when plotting soundings on smooth sheet, no further scanning is necessary.

The smooth sheet plotting and descriptive report were made under the supervision of Marvin T. Paulson, Robert C. Darling, Miller J. Tonkel, William A. Hughes and one officer from Ship Hydrographer.

The survey and smooth sheet is complete and adequate, except as noted in item E, of this report.

The survey and processing is here by approved. To the best of my knowledge.

Howard S. Cole

Howard S. Cole, ICdr.
Officer in Charge
East Coast Field Party

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8367..

Records accompanying survey: Smooth sheets
 boat sheets ...1...; sounding vols. 37...; wire drag vols.;
 Descriptive Reports; graphic recorder envelopes 31...;
 special reports, etc.

The following statistics will be submitted with the cartog-
 rapher's report on the sheet:

Number of positions on sheet

6768

Number of positions checked

829

Number of positions revised

*84.18

Number of soundings revised
 (refers to depth only)

350.12

Number of soundings erroneously spaced

0.14

Number of signals erroneously plotted
 or transferred

Key. See review

Topographic details

Time 60.98hrs

Junctions

Time 32.10hrs

Verification of soundings from
 graphic record

Time 20.6hrs

Special adjustments STA TOW, HEX, GAS. **
 New, Dut, Bea.

Time ...40hrs

Verification by L. Rose..... Total time 733. Date 9/13/61

Reviewed by E. E. Thomas..... Time 537 Date 7/9/63

* re-established Sq. Key.

** re-positioned hydrography through corrected station locations.

This form is Dupl. - Original Filed
 with Verif. Report.
 US COMM C&GS INC

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Coastal Survey~~

26 January 1960

Division of Charts: R. H. Carstens

Plane of reference approved in
37 volumes of sounding records for

HYDROGRAPHIC SHEET 8367

Locality Narragansett Bay, R. I.

Chief of Party: M. T. Paulson in 1956-57
Plane of reference is mean low water, reading
2.3 ft. on tide staff at Wickford
6.8 ft. below B. M. 4 (1944)

0.5 ft. on tide staff at Narragansett Pier
19.9 ft. below B.M. 1 (1956)

Height of mean high water above plane of reference is:

Wickford	:	3.8 feet
Narragansett Pier:		3.2 feet
Fort Adams	:	3.4 feet

add Ft Adams

Condition of records satisfactory except, as noted below:

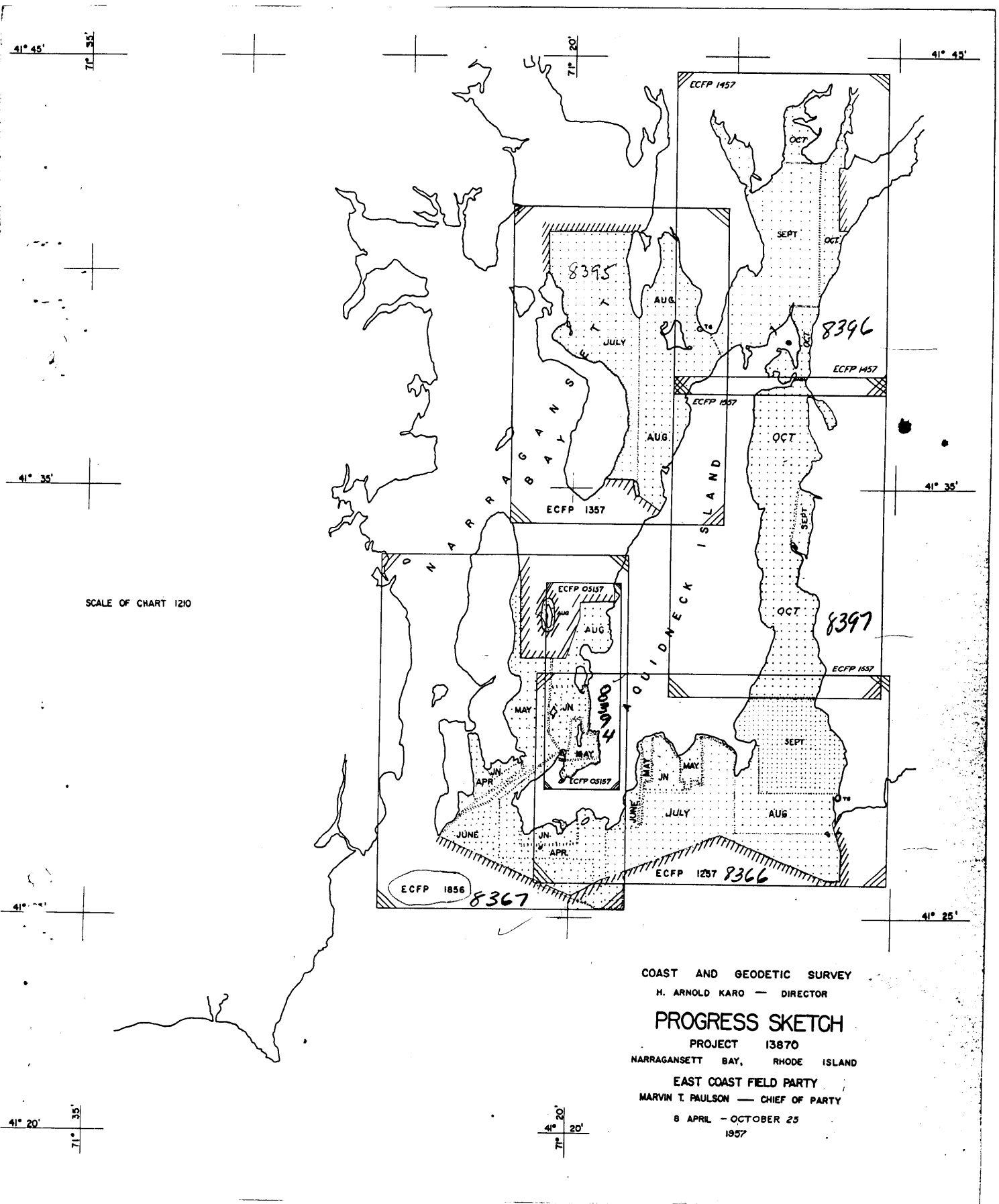
NOTE: Tide reducers for the positions listed below have been revised in red and verified:

Vol.	Positions
3	49j - 62j } purple,
4	63j - 100j } vol. 3-4
7	29r - 42r } purple,
	50r - 65r } vol. 7
	31s - 39s - vol. 7, purple
	30t - 101t - vol. 7, purple
12	1b - 20b - vol. 12, blue
	76b - 150b - vol. 12, blue
13	151b - 181b - vol. 13, blue
24	6fb - 125fb - vol. 24, purple
37	7ea - 36ea - vol. 37, purple

These items revised and verified.

William Shibus
Chief, Tides Branch

~~Chief, Division of Tides and Currents~~



801
MAR 6 - 1961

U. S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Boston District Office
Custom House, Boston, Mass.

3 March 1961

To: The Director
Coast and Geodetic Survey
Washington 25, D. C.

Subject: Request for survey data - Narragansett Bay

Reference: 801-nve of 24 February 1961

A call was paid on Captain White and he was asked about construction changes at Gould Island. He advised that construction there, 1956 to the present, has been limited to their underwater torpedo launchers and involved no shoreline changes, dredging or chartable features.

G. L. Short
G. L. Short
CDR., C&GS
District Officer

GLS:es

801



801-nve

February 24, 1961

To: Boston District Officer
Coast and Geodetic Survey
10th Floor, Customhouse
Boston 9, Massachusetts

Subject: Request for Survey Data - Narragansett Bay

The Verification Branch of the Marine Data Division are verifying some of the survey records of Narragansett Bay. The survey indicates that construction changes were in progress on Gould Island, including probable dredging, at the time of the survey in 1956-1957. It is desired that we be furnished prints of shoreline changes and dredging information of that area to correct our smooth sheet.

Please contact Naval officials of the First Naval District to verify this information and obtain the prints of their latest modifications. Capt. White, Public Works Officer, First Naval District may be able to provide this information.

/signed/ CHARLES PIERCE

Deputy Director

cc: 22
2231

Survey No. 8367

GEOGRAPHIC NAMES
Survey No. 8367

Name on Survey

On Chart No. 236
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

A B C D E F G H K

<u>Narragansett Bay (Title)</u>										BGN	1
<u>West Passage</u>											2
<u>East Passage</u>											3
<u>Newport Neck</u>											4
<u>Cherry Neck</u>											5
<u>Lands End</u>											6
<u>Castle Hill</u>											7
<u>Brenton Point</u>											8
<u>Beavertail Point</u> ✓											9
<u>Beaver Neck</u> ✓											10
<u>Hull Cove</u>											11
<u>Short Point</u>											12
<u>Bonnet Point</u> ✓											13
<u>Mackerel Cove</u>											14
<u>Conanicut Island</u> ✓											15
<u>Southwest Point</u>											16
<u>Bull Point</u>											17
<u>Rose Island</u>											18
<u>Fox Hill</u>											19
<u>Dutch Island</u>											20
<u>Taylor Point</u>											21
<u>Gould Island</u>											22

for any additional names, see chart #236, 9th edition, Feb. 58. 23
These names are all approved. 24

George M. Bree
GEOGRAPHIC NAMES SECTION
19 JAN. 1960

27
M 236

OFFICE OF CARTOGRAPHY

REVIEW SECTION -- NAUTICAL CHART DIVISION

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8367

FIELD NO. ECFP-1856

Rhode Island, Narragansett Bay, Entrance to Narragansett Bay

SURVEYED: September-November 1956
April-October 1957

SCALE: 1:10,000

PROJECT NO. 13870

SOUNDINGS: EDO DEPTH Recorder
Hand lead
Sounding Pole

CONTROL: Sextant
fixes on shore
signals.

Chief of Party-----	M. T. Paulson
Surveyed by-----	D. L. Campbell,
	R. A. Lewis
	J. S. Baker
	L. L. Seal
	A. M. Cook
	A. G. Davis
Protracted by-----	A. G. Davis
Soundings plotted by-----	A. G. Davis
Verified and inked by-----	S. Rose
Reviewed by-----	E. Thomas
Inspected by-----	R. H. Carstens

Date: 1/29/62

✓ 1. Description of the Area

This survey covers the entrance to Narragansett Bay and portions of East and West Passage. The bottom is very irregular inshore and fairly irregular offshore, where major irregularities rise abruptly from a generally even bottom. Much of the shoreline is bordered by rocks awash, sunken rocks and ledges. Numerous piers and groins have been built along the shore in both East and West Passage.

✓ 2. Control and Shoreline

- ✓ A. The source of the control is given in the Descriptive Report. The present hydrographic sheet is now the authority for the topographic signals since the graphic control sheets and blackline impressions upon which they were originally located are to be destroyed.
- ✓ B. The shoreline originates with reviewed photogrammetric surveys T-11432 and T-11433 of 1954-55; also unreviewed surveys T-10499 and T-10500 of 1956. The amounts that rocks uncover from the hydrographic information of the present survey are shown on the smooth sheet where differences occur between the information furnished by the photogrammetric field parties and that of the present hydrographic party.

3. Hydrography

- ✓ A. The majority of depths at crossings are in good agreement; however, in some instances where crossing disagreements could not be reconciled adequately with adjacent hydrography the verifier deleted portions of 8 lines of hydrography.
- ✓ B. The usual depth curves were adequately delineated and the development of bottom configuration is adequate except:
 - (1) Close inshore where the foul character of the bottom frequently prevented development to the low-water line.
 - (2) The following areas were inadequately developed on the present survey:
 - ✓ (a) Vicinity of lat. $41^{\circ}26.55'$ to lat. $41^{\circ}26.80'$, long. $71^{\circ}25.52'$
 - (b) Vicinity of Kettle Bottom Rk, lat. $41^{\circ}28.35'$, long. $71^{\circ}22.38'$
 - (3) The least depths on the shoal indications not previously covered by wire-drag surveys:

<u>DEPTH</u>	<u>LAT.</u>	<u>LONG.</u>	<u>RLSING FROM DEPTHS OF</u>
1. 23 ft.	41°27.09'	71°18.98'	36 to 39 ft.
2. 9 ft.	41°31.48'	71°24.54'	16 ft.
3. 11 ft.	41°30.31'	71°23.20'	15 ft.

4. Condition of Survey

The processing of the smooth sheet by field personnel does not meet the standards prescribed by the Hydrographic manual for accuracy, clarity or neatness.

- A. The majority of position numbers are not legible on either the smooth sheet or the boat sheet as received in the review section which added many additional hours to the verification and review of the survey.
- B. The plot of the hydrographic determination of shoreline features at Gould Island was erroneous because of control problems and was corrected during verification to agree with the contemporary photogrammetric survey locations.
- C. Erroneous tidal reducers were applied by field personnel to approximately 400 positions which affected the soundings by as much as 1 to 2 ft. It was necessary for the verifier to correct both the volumes and the smooth sheet soundings.
- D. Approximately 2% of the penciled smooth sheet depths were revised during verification because changes made by the field to the recorded tide reducers had not been applied to the previously reduced field soundings penciled on the smooth sheet.
- E. The sounding records were complete, except that remarks were seldom made in the volume giving the proximity of the vessel to adjacent features; frequently a feature was smooth plotted and verified for each detached position where only a single feature actually existed.
- F. A great deal of extra time was required during both verification and review for the processing of the survey because of the inaccuracy in the plotting of the control

stations. It is noted that the positions of some triangulation stations were apparently transferred from the photogrammetric manuscripts and the graphic control surveys (PH-IM-56, PH-IN-56) and are not plotted by either the method or with the accuracy prescribed in the Hydrographic Manual.

1. A comparison of station locations were made with **those** on the photogrammetric surveys and the graphic control surveys and revealed differences in triangulation station positions as great as 0.9 mm; transfer of topographic stations have location differences as great as 1.0 mm.

The replotting of stations New, Dut, and Bea was necessary during review.

2. The positions of some triangulation stations on the graphic control surveys are not plotted with the prescribed accuracy and affects the reliability of other station locations on those surveys.
3. Because of the conditions above, the subsequent protracting of sextant determinations of hydrographic stations during smooth plot resulted in error in their location by as much as 2.0 mm.

To more adequately determine the location of portions of the critical hydrography during review, the sextant locations of stations TOW, HEX, and GAS were replotted on the smooth sheet in black, from the original hydrographic information. Only the more critical hydrographic information using these stations for control was corrected.

4. JAMESTOWN STANDPIPE, 1912 previously in lat. $41^{\circ}29.46'$, long. $71^{\circ}22.42'$ was destroyed prior to the present survey (reference: chart letter 207, 1956). its geographic position was smooth plotted for PIP (Standpipe, 1954) about 5 mm. from the correct position. The hydrographic information located by

the use of the erroneous station was not revised, except in the critical areas.

5. Hydrographic signal GUY in lat. $41^{\circ}29.68'$ long. $71^{\circ}23.8'$ was replotted about 1.0 mm eastward during review to more adequately bring the plot of some of the critical information of the present survey into substantial agreement with that of prior surveys. The majority of the hydrography located from the faulty position still exists on the smooth sheet of the present survey.

- G. The verifier adjusted more than 200 soundings to bring them into harmony with adjacent soundings in areas where vertical differences of as much as 2-ft existed at tidal-zone changes.

5. Junctions

Adequate junctions were effected on the north, in West Passage, with H-6970(1944) and in East Passage with H-6859 (1943). The junction with H-7790(1949), on the northeast, is adequate, except for the area in the vicinity of Gould Island where depths from H-7790 differed with present depths by as much as 4-ft. The shoaler depths from the present survey were retained by making a butt junction in this area.

The junction with H-8394(1957) on the east, is considered adequate. However, there are differences as great as 15 to 20-ft. in general depths of 90-ft. which are attributed to sounding lines being displaced on the present survey for reasons discussed previously in section 4 B and F. Three lines of hydrography were deleted and portions of other lines were arbitrarily shifted to improve the affected area.

An adequate junction was effected with H-8366(1957) and H-6444(1939) on the southeast and H-8315(1956) on the south.

6. Comparison with Prior Surveys

- A. Misc. 20 (1832) 1/24,000
U.S.N. Chart

This is compiled early reconnaissance hydrography charted from other sources and lacks sufficient information to make a comparison with the present survey of any practical value.

B. H-153 (1844) 1/20,000 and 1884 1/10,000 Ad WK.

This survey covers a portion of the area of the present survey and is reconnaissance in nature, except where close development was made of the bottom in the vicinity of Seal Ledge in 1884. Agreement of depths is good considering the less accurate methods available at the time of the prior development and extreme bottom irregularity of this feature. The present survey adequately develops this feature and reveals lesser depths than those of the prior survey.

Depths in West Passage are shoaler by as much as 2 to 6 ft since 1844. These changes occur in depths greater than 30-ft and are attributed to the method of survey, that is with handlead on a soft mud bottom. However, some minor sedimentary action has occurred since this early survey.

The present survey more adequately defines the bottom configuration and supersedes this prior survey in the common area.

C. H-785 (1862-65) 1/10,000

A comparison between this prior and the present survey reveals, in general, only minor differences in along-shore areas; however, in some offshore areas the present survey is as much as 8 ft. shoaler in depths greater than 115 ft which is attributed to sedimentary action and partially to some sounding displacement on the prior survey due to poor spacing.

Specific attention is directed to the following discrepancies in hydrographic information between the prior and the present survey:

1. A 5-ft. sdg. charted in lat. $41^{\circ}28.52'$ long. $71^{\circ}22.68'$ together with a supporting 11-ft. sdg. falls in

an area of general development lines in depths of from 16 to 30 ft on the present survey and is not considered disproved. The soundings discussed and an adjacent 1-ft sdg. were brought forward to the present survey.

2. Supp Rock charted in lat. $41^{\circ}29.51'$ long. $71^{\circ}21.90'$ originates with the records of H-787 but is smooth plotted on H-785. The feature was neither verified nor disproved by the present survey and is carried forward.
3. The 17-ft. and 40-ft. soundings charted in lat. $41^{\circ}27.77'$, long. $71^{\circ}23.04'$ and in lat. $41^{\circ}27.68'$, long. $71^{\circ}23.16'$ respectively, fall in depths greater than 50 ft. on the present survey. The soundings are incorrectly spaced on line and should be disregarded.
4. The rock awash charted in lat. $41^{\circ}28.6'$, long. $71^{\circ}22.7'$ was determined to be a bare rock by present survey information.
5. The 39-ft. sounding charted in lat. $41^{\circ}27.70'$, long. $71^{\circ}23.02'$ falls in depths of 66 to 68 ft on the present survey. An 11-ft. sounding in lat. $41^{\circ}27.75'$, long. $71^{\circ}23.32'$ from the same line falls between sounding lines on the present survey. The line appears to be displaced about 230 meters southward of similar depths on the present survey and the 39-ft. sounding should be disregarded.
6. Butter Ball Rock from T-182(1846) is charted incorrectly as a bare rock in lat. $41^{\circ}27.49'$, long. $71^{\circ}21.84'$. The records of H-785 and the present survey indicate this to be a low-water feature.
7. The development in the vicinity of KETTLE BOTTOM ROCK is inadequate on the present survey and it was necessary to bring soundings forward from H-785 to supplement the sparse hydrography of the present survey.
8. The 72-ft. sounding charted in lat. $41^{\circ}27.38'$, long. $71^{\circ}23.19'$ falls in present depths of 89 to 111 ft. on the present survey and is incorrectly spaced on line. The charted sounding should be disregarded.
9. The 8-ft. sounding charted in lat. $41^{\circ}27.69'$, long. $71^{\circ}23.33'$ falls in present depths of 15 to 29 ft. This sounding

is considered displaced in position and should actually fall about 50 meters westward where comparable depths exist on the present survey.

10. The 1/2-ft. sunken rock on H-785 in lat. $41^{\circ}28.68'$ long. $71^{\circ}21.37'$ was removed by C of E (Bp 38719) and a least depth of 15 ft was found during the present survey.
11. The rock in lat. $41^{\circ}28.93'$, long. $71^{\circ}21.42'$ on H-785 was incorrectly plotted. Its corrected position is in agreement with present survey information.

With the addition of the items carried forward, the present survey is adequate to supersede the prior survey within the common area.

- D. H-786 (1862) 1/10,000
H-787b(1862) 1/10,000
H-992 (1868) 1/10,000

A comparison between these prior surveys and the present survey reveals minor differences in depths of 2 to 4 ft in areas of smooth bottom which are chiefly attributed to natural causes. The sunken rocks in the vicinity of lat. $41^{\circ}29.75'$, long. $71^{\circ}23.25'$ on H-787b have not been charted since about 1904 when they were deleted on the basis of letter 721.

The 37-ft sounding (actually 39) charted in lat. $41^{\circ}31.4'$, long. $71^{\circ}23.87'$ is considered erroneously spaced on H-992. The corrected spacing would place the sounding in harmony with the present survey. The sounding should be disregarded.

The present survey is adequate to supersede these prior surveys in the common area.

- E. H-1787 (1887) 1/40,000

This small-scale offshore survey is in good agreement with the present survey. Several random shoal soundings charted from this prior survey were not specifically developed by the present survey; however, depths on the present survey, in the immediate vicinity of these soundings, indicate a lesser depth than those of the prior survey. These

prior soundings were not considered significant to supplement the present survey for charting and were not carried forward.

The present survey is adequate to supersede this prior survey within the common area.

F. H-1789 (1887) 1/10,000

This prior large-scale survey covers a portion of the present survey at the entrance into both East and West Passage and presents a detailed development of inshore hydrography. Several soundings have been carried forward from this prior survey to supplement present depths.

Bass Rk., charted in lat. $41^{\circ}27.25'$, long. $71^{\circ}23.47'$ originates with T-1119 (1869). Two additional islets off Short Pt. in lat. $41^{\circ}27.85'$, long. $71^{\circ}23.07'$ from this same source are not specifically noted on either the present survey or in the records on the prior hydrographic surveys. Bass Rock has been carried forward as an islet and the two islets have been carried forward as rocks awash.

With these additions, the present survey is considered adequate to supersede the prior survey within the common area.

G. H-1790 (1887) 1/10,000

This prior survey contains inshore hydrography east of Brenton Point. A comparison reveals minor differences of 1 to 3 ft., which are attributed to extreme irregularity of the bottom and the difference in methods of survey between the prior and present surveys. Many apparent differences which seem to exist between the prior and present surveys in regards to some offshore reef features resulted from incomplete application of recorded details from the volumes of the prior survey. An investigation during review, in numerous instances indicates good agreement between the prior survey and the present hydrographic survey. Also, agreement is adequate with present photogrammetric surveys.

Attention is specifically directed to the following differences between prior and present surveys:

1. The 23-ft. sounding, charted in lat. $41^{\circ}27.09'$, long. $71^{\circ}18.98'$ from H-1790 was not specifically developed on the present survey and has been carried forward.
2. The 18-ft. sounding in lat. $41^{\circ}27.34'$, long. $71^{\circ}19.33'$ from H-1790 falls between sounding lines on the present survey and was not specifically developed. The 18-ft. sounding was carried forward.
3. The high-water rocks charted in approximate lat. $41^{\circ}27.30'$, long. $71^{\circ}19.30'$ originate with prior topographic survey T-182 (1844).

Subsequent topographic surveys, as well as the present contemporary photogrammetric survey T-11433 W (1954-55) do not substantiate such features at this location. The hydrographic information recorded makes no reference to such a feature, either on H-1790, or the present survey. The features are considered discredited in their charted position and should be removed from the charts.

4. The high-water rocks (Roaring Bull) charted in lat. $41^{\circ}27.03'$, long. $71^{\circ}19.99'$ from H-1790 (via T-1194) are erroneous. The records of H-1790 indicate the feature to be a low-water reef; the minus 5-ft sounding is incorrect and was revised during review. Contemporary photogrammetric survey T-11433 W confirms the feature as low-water. The proper notation of "awash at MLW" was applied to H-1790 during review and carried forward to the present survey.
5. The 45-ft. sounding charted in lat. $41^{\circ}26.52'$, long. $71^{\circ}20.53'$ originates with H-1790 (1887) and falls in general depths of 65-ft. on both the prior and the present surveys. Although additional development was made in the vicinity, only a single line of hydrography crosses the charted position of the 45-ft. sounding. The fathograms for this line of hydrography lack clarity and are not considered adequate to discredit the sounding. A 48-ft. sounding was developed 150 meters south of the prior 45-ft. location by the present survey. However, the prior sounding location cannot be

reasonably shifted and the 45-ft. sounding was carried forward to the present survey as plotted.

6. The reef charted in lat. $41^{\circ}26.95'$, long. $71^{\circ}21.03'$ originates with T-1194 (1870-71) and is carried on H-1790. However, it does not appear either on T-182 (1844) or the present contemporary photogrammetric surveys. The hydrography from neither H-1790 nor the present surveys is adequate to disprove the feature and it is carried forward to the present survey.

A number of other soundings and rocks have been carried forward from the prior to the present survey. With the addition of this information, the present survey is adequate to supersede the prior survey within the common area.

H. H-3403 (1912) 1/10,000

This prior survey contains detailed hydrography for comparison with the present survey. A comparison reveals generally minor differences of 2 to 4 ft. in a generally smooth bottom which are attributed to natural sedimentary action and differences in the methods of survey on the prior and present surveys.

1. The 5 ft. charted in lat. $41^{\circ}29.72'$, long. $71^{\circ}23.90'$ and the 12 ft. charted in lat. $41^{\circ}29.58'$ long. $71^{\circ}24.14'$ from H-3403 fall on abrupt slopes on the present survey in depths about 6 ft. greater. In the original records, the 5 was followed by a "miss" and the 12 was followed by a sounding revised by 1 fathom. The 5 and 12 are also probably in error and should be disregarded.
2. The rock awash charted in lat. $41^{\circ}28.99'$, long. $71^{\circ}25.08'$ is located erroneously from the records of H-3403 and should fall approximately 75 meters south of its charted position where it is in agreement with the present survey.
3. The 6 and 8-ft. soundings charted in lat. $41^{\circ}31.37'$ long. $71^{\circ}24.91'$ from H-3403 were incorrectly spaced on line and have been revised on the smooth sheet of

of that survey. Present survey depths are in harmony with the revised smooth sheet.

Listed are soundings and rocks awash carried forward to supplement the hydrography of the present survey:

Feature	Lat.	Long.
1. Two 1-ft. sdgs	41°30.10'	71°24.32'
2. 7 ft.	28.05'	25.30'
3. RK awash	28.21'	25.16'
4. 18-ft sdg.	28.21'	25.14'
5. 8-ft. RK	28.28'	25.10'
6. * (4)	28.29'	25.09'
7. * (3)	28.59'	25.09'
8. * (1)	28.40'	23.94'
9. 17 ft.	27.90'	23.98'

In addition, 9 unlisted soundings were carried forward to supplement the hydrography on the present survey.

The present survey with the above additions is adequate to supersede the prior survey in the common area.

I. H-5554 (1934) 1/5000

The portion of this large-scale survey which covers the area surrounding Gould Island that was not superseded by H-6859 (1943) and H-7790 (1949) represents the prior coverage for comparison with the present survey. A comparison reveals shoaling of as much as 6 to 10 ft. in the area south of Gould Island and is attributed to natural shoaling in the area. The remaining development reveals minor differences which are probably due in part both to methods of survey on the prior survey and conditions of uncertainty of positioning on the present survey as previously discussed in section 4 F.

On the north of Gould Island, dredging operations, together with the alterations of piers and similar structures, have taken place since 1934 and have contributed to changes in alongshore bottom configuration.

On the east side of Conanticut Island in the vicinity of lat. 41°31.5' inshore soundings from H-5554 have been

carried forward to supplement present depths.

With these additions the present survey is considered adequate to supersede this portion of the prior survey in the common area.

J. H-5621 (1934) 1:5,000

A comparison of the prior survey in the common area on the present survey reveals only minor differences which are attributed in part to the steep bottom gradient and methods of survey between the two surveys.

1. A rock awash at MLW in lat. $41^{\circ}29.73'$ long. $71^{\circ}20.6'$ falls in depths of 1 to 5 ft on the present survey. Since the area was not investigated at low-water, the rock is not considered disproved and is carried forward.
2. A sunken rock, covered 3 ft at MLW in lat. $41^{\circ}29.8'$, long. $71^{\circ}20.6'$ was not specifically developed by the present survey and is carried forward.

The present survey, with the additions noted above together with two supplemental soundings brought forward, is considered adequate to supersede this prior survey within the common area.

K. Wire Drag Surveys

H-3695 WD (1914) 1/10,000
 H-3801 WD (1915) 1/10,000
 H-4006 WD (1917) 1/20,000
 H-4007 WD (1917) 1/10,000
H-7029 WD (1948) 1/20,000

Except in the following areas, present depths are in harmony with the effective depths of the wire-drag surveys:

Lat.	Long.	W.D. Survey	Eff. Depth	Present Depths
$41^{\circ}27.8'$	$71^{\circ}24.8'$	H-4006	47	44-47
$41^{\circ}28.15'$	$71^{\circ}27.75'$	H-4007	45	39-45
$41^{\circ}31.2'$	$71^{\circ}24.35'$	H-4007	37	28-37

*Outside limits
of this
Survey.*

A similar conflict exists between the effective depths and soundings on survey H-3403 (1912). Inasmuch as no appreciable change in the bottom has occurred in these areas, the wire-drag effective depths are considered to be faulty and should be disregarded.

About 18 soundings and rock awash symbols have been carried forward to supplement present depths.

The 32 obstr. in lat. $41^{\circ}27.1'$ ^{6.0"}, long. $71^{\circ}24.95'$ ^{57"} from the smooth sheet of H-4006 WD (1917) does not appear on the A & D sheet for that survey and apparently was overlooked in the application of hydrography to the prior large-scale charts (No. 114 and 353-2). The survey records two detached positions with the notation "iron-rust, probably wreck".

The 32 obstr. has been carried forward to the present survey pending wire-drag investigation.

7. Comparison with chart 236 (latest print date 6/19/61)

A. Hydrography

Charted hydrography originates principally with the previously discussed prior surveys, supplemented by partial application of the present survey through the boat sheet, (Bp 54544, Bp 55828) and the unverified smooth sheet. Some critical hydrographic information is charted from the Corps of Engineers surveys (Bp 38407 of 1944, Bp 36578 and 36579 of 1942) and the Bureau of Public Works, Department of the Navy Surveys (Bp 45138 of 1948 and Bp 54142 of 1954)

1. Various revisions have been made to the present survey during verification and review which will effect the charted information. Charted information from prior topographic surveys in conflict with the present survey is superseded by the present survey information. Revisions in topographic details charted from 1956 photographs are subsequent to the shoreline shown on the 1954-55 photogrammetric surveys of a portion of this area.
2. Attention is specifically directed to the following discrepancies between charted hydrography and the

present survey:

- a. A sunken rock charted in lat. $41^{\circ}30.5'$, long. $71^{\circ}25.0'$ from letter 501 (1939) is described as a rock awash at MLW, which is in agreement with the present survey. This rock is located at the offshore end of a rock breakwater 5 meters south of and parallel to the pier ruins.
- b. Only 4 dolphins should be charted in lat. $41^{\circ}29.58'$, long. $71^{\circ}25.25'$ to agree with T-11432 and the present survey. The original charted positions of 3 dolphins from chart letter 326 (1953) were out of position and were not revised during applications of subsequent revisions from air-photographic corrections.
- c. The 6 dolphins charted in lat. $41^{\circ}29.5'$, long. $71^{\circ}25.15'$ from chart letter 445 (1949) were not disproved by the present survey, or the contemporary shoreline surveys. Low water remains of the dolphins may still exist.
- d. The rock crib uncovering 2-ft at MHW from chart letter 445 (1949) in lat. $41^{\circ}29.37'$, long. $71^{\circ}24.12'$ falls in present depths of 16 to 22-ft. The original plot of the location is not available and is perhaps positioned too far offshore. Several lines in the immediate vicinity were run at low tide without revealing an indication of the crib. The crib probably existed inshore where present rocks awash and shoal depths are adequate for charting.
- e. The sunken wrecks charted in lat. $41^{\circ}29.50'$, long. $71^{\circ}21.01'$ (98-ft wk) and in lat. $41^{\circ}28.54'$, long. $71^{\circ}21.07'$ (114-ft wk) from chart letter 430 (1954) are not considered a hazard to navigation. The charted depths over the obstructions were neither verified nor disproved and should be retained as charted.

- f. The 4-ft sounding charted in ^{lat.} $41^{\circ}30.28'$, long. $71^{\circ}23.15'$ is an error which occurred when the name Dutch Harbor was repositioned and inadvertently the digit 1 of a 14-ft depth was deleted.
- g. The pier in lat. $41^{\circ}32.09'$, long. $71^{\circ}21.8'$ from chart letter 842 (1959) is subsequent to the present survey.
- h. A 17-ft. in lat. $41^{\circ}26.99'$, long. $71^{\circ}21.7'$ from advance information of the present survey should be disregarded. The sounding is 10-ft in error and was revised during review.

Except for those items noted above, the present survey information is adequate to supersede the charted hydrography in the common area.

B. Aids to Navigation

The present survey positions of aids to navigation are in substantial agreement with the charted positions and adequately mark the features intended. Several buoys both navigational and mooring, have been renumbered subsequent to the present survey. A fixed lighted aid is carried on the present survey in lat. $41^{\circ}32.31'$, long. $71^{\circ}20.5'$ and is privately maintained.

8. Compliance with Project Instructions

This survey adequately complies with the project instructions, except as noted in sections 3 and 4 of this review.

9. Additional Field Work

As mentioned in Section 2 above, because of the uncertainty of position of a number of topographic and hydrographic signals, because of the inaccuracy of the plotting of some triangulation and topographic stations, many sounding lines, rocks and detached positions are probably out of position slightly. Only that hydrographic information on the present survey which was


in obvious disagreement with either the prior or contemporary photogrammetric or prior hydrographic surveys was revised. Although the survey records and survey information is considered adequate to comply with the requirements of a basic survey, the subsequent smooth plot of this information does not meet the prescribed requirements. For these reasons, this survey is considered only basic for charting.


The following items should receive further field confirmation:


- (1) The 9-ft shoal in lat. $41^{\circ}31.48'$, long. $71^{\circ}24.53'$ and the 10-ft shoal 150 meters northward.
- (2) The 11-ft. in lat. $41^{\circ}30.32'$, long. $71^{\circ}23.19'$
- (3) The 14-ft. in lat. $41^{\circ}30.19'$, long. $71^{\circ}23.41'$ carried forward from survey H-4007 W.D.

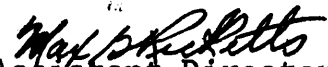
These are in addition to 14 items previously submitted to the Operations Division for additional investigation.

Examined and Approved:


Chief,
Nautical Chart Division


Assistant Director,
Office of Cartography


Projects Officer,
Operations Division


Assistant Director,
Office of Oceanography

informally
Items submitted to Operations for
investigation and outlined on a chart

H-8367

- | | | |
|--|------------|---------------------------------|
| (48) Verify 5 ft | 41 28.52 ✓ | 71° 22.69 |
| (49) Verify 18 ft | 27.35 ✓ | 19.32 |
| additional line desirable between Reef and island Southwest. | | |
| (50) Verify 23 ft | 27.1 ✓ | 18.96 |
| (51) Verify 7 ft | 28.05 ✓ | 25.30 |
| Rk Awash | 28.09 ✓ | 25.27 |
| (52) additional line vicinity ^{2' Rk} of 29.7 ✓ | | 23. ³ / ₂ |
| south west of key clip. | | |

- | | | |
|-------------------------------|----------|--------|
| (53) 4 Rk | 32.05' ✓ | 23.45' |
| (54) Rk (Seaward) | 32.07 ✓ | 24.9 |
| (55) Shoal Portman & Rk Awash | 30.4 ✓ | 24.1 |
| (56) Verify 6 dolphins | 29.5 ✓ | 25.15' |
| (57) Verify Rock Crib | 29.37' ✓ | 24.12' |

H-6859

- | | | |
|--|-------|-------|
| (58) ^{Verify} Sunken & Rk Awash | 34.6' | 18.2' |
| (60) Verify Rk Awash | 34.33 | 21.92 |

Chief, Operations Division

January 15, 1962

Chief, Nautical Chart Division

Items for investigation by Ships Wainwright and Hilgard

The following items to be investigated are suggested for the Ships Wainwright and Hilgard while enroute to the Maine working grounds: (Use blue line for boat sheet and smooth plot on tracing cloth for inclusion in the Descriptive Report)

H-8367

1. The 21-ft. sounding in lat. $41^{\circ}28.0'$ long. $71^{\circ}21.78'$ should be hung and cleared within 3 ft. by the wire drag.
2. The 32-ft. obstruction in lat. $41^{\circ}27.11'$ long. $71^{\circ}24.95'$ should be hung and cleared within 2 ft. by the wire drag.
3. The north end of the shoal in lat. $41^{\circ}26.75'$ long. $71^{\circ}25.5'$ off Whale Rock should be determined by a split along long. $71^{\circ}25.5'$.
4. The condition of the ship aground in lat. $41^{\circ}26.6'$ long. $71^{\circ}21.15'$ (uncharted) should be determined. The ship may have been salvaged but no report has been received.

H-8366

5. The 17-ft. feature in lat. $41^{\circ}28.91'$ long. $71^{\circ}16.0'$ should be developed by additional lines and the least depth determined.

H-8395

6. The 5-ft. depth charted in lat. $41^{\circ}39.57'$ long. $71^{\circ}16.92'$ should be investigated by the wire drag and the least depth determined. The sounding originates with H-792a (1861).

H-8183 WD

The 9-ft. sounding in lat. $43^{\circ}51.57'$ long. $69^{\circ}29.2'$ should be hung and cleared within 3 ft. with a wire drag.

J. E. Waugh

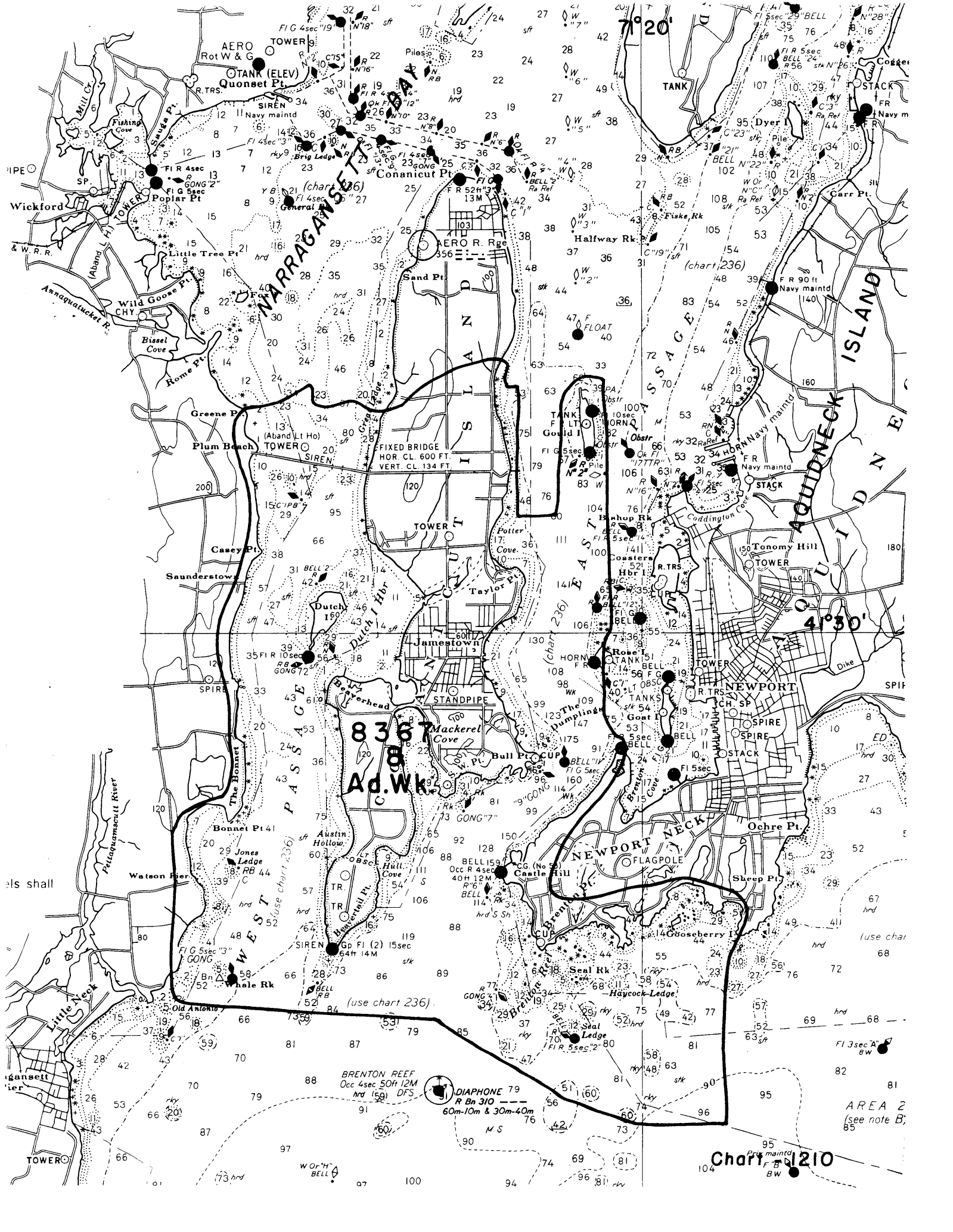


Chart 1210

AREA 2
(see note B;
85

8367
Ad.Wk.

Handwritten tally marks arranged in rows, with some groups circled.

10
12
13
13
3

57
5
252

480
99
255
825
826
827
828
829

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8367

Review 1-29-62

Record of Application to Charts

[illegible]

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.

8367

Additional Work

Diag. Cht. No. 1210-3.

Form 504	
U. S. DEPARTMENT OF COMMERCE	
COAST AND GEODETIC SURVEY	
DESCRIPTIVE REPORT	
Type of Survey	Hydrographic
Field No.	Office No. H-8367Ad.Wk.
LOCALITY	
State	Rhode Island
General locality	Narragansett Bay
Locality	ENTRANCE - NARRAGANSETT BAY Plum Beach Point - Dutch Island
1963	
CHIEF OF PARTY	
E. K. McCaffrey	
LIBRARY & ARCHIVES	
DATE	December 1963

USCOMM-DC 5087

8367

Additional Work

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

REGISTER No. H-83667 Ad. Wk.

Field No. _____

State Rhode Island

General locality Narragansett Bay

Locality ~~Plum Beach Point - Dutch Island~~ ENTRANCE NARRAGANSETT BAY

Scale 1:10,000 Date of survey 24 May - 9 July 1963
- 4 June 1963

Instructions dated _____

Vessel WAINWRIGHT - HILGARD

Chief of party E. K. McCaffrey

Surveyed by O. W. Crawford, J. S. Magley, E. J. Murphy

Soundings taken by fathometer, ~~graphic recorder~~, hand lead, ~~wire~~ Pole

Fathograms scaled by _____

Fathograms checked by _____

Protracted by _____

Soundings penciled by _____

Soundings in fathoms feet at MLW ~~MLLW~~

REMARKS: _____

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

IN REPLY REFER TO:

TO: Director
Coast & Geodetic Survey
U. S. Dept. of Commerce Bldg.,
Washington 25, D. C.

DATE: Nov. 19, 1963

FROM: Commanding Officer
USC&GS Ships WAINWRIGHT & HILGARD
102 W. Olney Rd., Norfolk 10, Va.

SUBJECT: Special Report, Special Project 22-62, H-8367 N/2 (ECFP 1856)

REFERENCE: 1. Instructions - Special Project 1-63, 2100-pt, S-2-W&H
dated March 19, 1963 (Items Nos. 25, 26, & 27)
2. Special Report - Special Project 22-62 (H-6970) (GI 1144)
dated 3/13/63

In accordance with the referenced instructions above, additional hydrographic investigations were carried out as noted on the bromide print accompanying the blue line print of survey No. H-8367 N/2 (ECFP 1856).

Investigations proceeded in the following manner with results as noted:

H-8367 Ad. Wk. Northern Half

Launch CS-181 - a. & b day - 24 & 25 May 1963

1. Additional hydrography was carried out in latitude $41^{\circ} 31.48'$, longitude $71^{\circ} 24.53'$ to further develop the charted 9 and 10-foot shoal and the 10 feet 150 meters northward. ^{from H-8367 (1956-57)} A series of closely spaced lines (25 meters) failed to detect any evidence of the shoals. (positions 1a through 32a)
The prior 9 and 10-ft depths are considered discredited and have been deleted from the survey.
2. Additional hydrography was carried out in latitude $41^{\circ} 30.32'$, longitude $71^{\circ} 23.19'$ to further develop the charted 11-foot sounding. ^{the original notes with H-8367 (1956-57)} A series of closely spaced lines failed to locate the shoal. (pos. 33a to 52a) & (pos. 1b to 41b) ^{25 meters}
The prior 11-ft depth is considered discredited and has been deleted from the survey.
3. Hydrographic lines were run in the vicinity of latitude $41^{\circ} 30.44'$, longitude $71^{\circ} 24.13'$ to investigate the limits of the shoal protrusion, ^{originating from H-2403 (1912)} as charted and the rock awash. The limits of the shoal were delineated (position 55a to 70a). A search failed to locate the charted rock awash at latitude $41^{\circ} 30.43'$, longitude $71^{\circ} 24.11'$. The only rocks found in the area were 35 meters south of the charted rock, one covered 2 feet at MLW and the other by 1-foot at MLW ^{off shore.} (pos. 53a to 54a) *See Review N. Half, item 3.*

4. Additional hydrographic development in latitude $41^{\circ} 30.19'$, longitude $71^{\circ} 23.41'$ disproved the charted 14-foot (pos. 71 to 90a) (pos. 41b to 48b). *sdg at this position from H-4007(1417) W.D.*

Launch CS-181 - ^c day - 4 June 1963

5. A hydrographic investigation was conducted in the vicinity of latitude $41^{\circ} 29.71'$, longitude $71^{\circ} 23.28'$ to search for the charted rock awash, and the charted "2RK", "3RK", "4RK". Only one rock was found in the immediate area, covered 3 feet at MLW at latitude $41^{\circ} 29.69'$, longitude $71^{\circ} 23.32'$. This rock is approximately 30 meters SW of the charted rock awash (pos 1c-19c). *See Review N. Half, Item 5*
6. Additional hydrography in latitude $41^{\circ} 29.37'$, longitude $71^{\circ} 24.13'$ disproved the charted rock crib/bare 2 feet at MLW (pos. 20c to 51-c). *This feature is not presently charted on 1322 (22c) See Review, N. Half Item 6*
7. The ⁶charted dolphins in latitude $41^{\circ} 29.49'$ longitude $71^{\circ} 25.15'$ are non-existent. *They are considered disproved by the present investigation. from H-4007(1417) W.D.*
8. The investigation ^{of several rocks} north of latitude $41^{\circ} 32'$ ^{are discussed in} were investigated on blue print of survey No. H-6970 ^{Ad. Wk.} (see reference 2). *the review of*

Accepted hydrographic procedures were followed in carrying out these special investigations. CS-181 was equipped with Raytheon fathometer #211. Pole soundings were obtained when necessary and feasible, and check angles were obtained on all located objects. All control used is existing on the blue line print of survey H-8367 N/2.

Edwin K. McCaffrey
Edwin K. McCaffrey

DWC/jrb

T I D E N O T E

Newport, Rhode Island standard tide gage was used for tidal data with hourly heights furnished by the Washington Office. Because of significant range and time differences the following corrections were taken from C&GS "Tide Tables" for Beavertail Point, Rhode Island and applied to actual heights observed at Newport, Rhode Island:

High Water: -02 minutes and 0.0 feet
 -05 minutes and 0.0 feet

ABSTRACT OF CORRECTIONS TO ECHO SOUNDINGS

1 9 6 3

SP 22-62, SURVEY H-8367 N/2 (ECFP 1856)

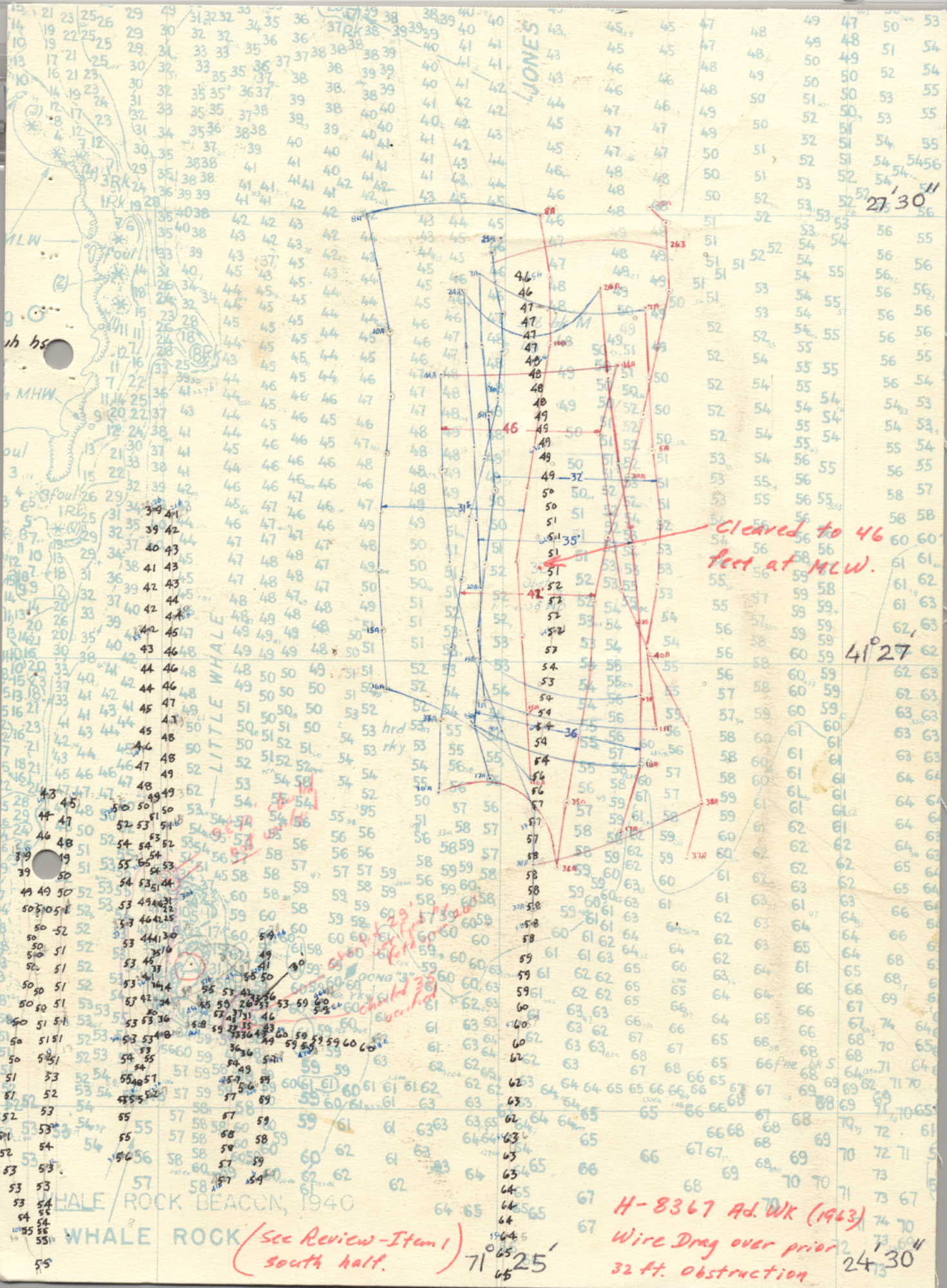
CS-181 Fathometer No. 211

<u>Depth</u>	<u>Correction</u>
0.0	0.0
6.3	+0.2
14.3	+0.4
20.3	+0.6
26.1	+0.8
32.7	+1.0
40.0	+1.2
47.1	+1.4
55.3	+1.6
65.3	+1.8
& on	

Phase Comparison

Scale Correction

A	0.0
B	0.0



WHALE ROCK BEACON, 1940

WHALE ROCK (See Review-Item 1)
south half.

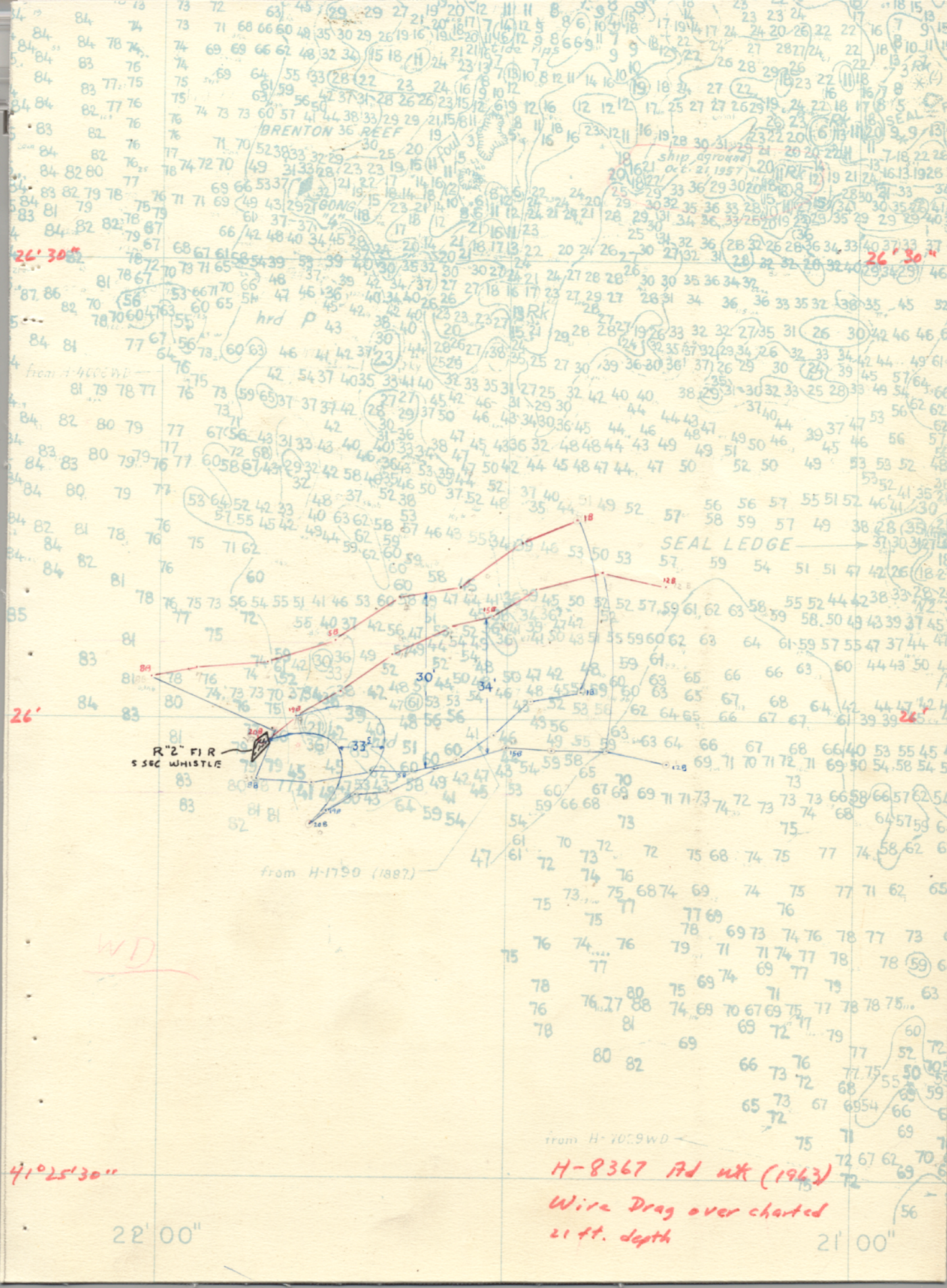
H-8367 Ad. WK (1963)
Wire Drag over prior
32 ft. obstruction

41° 27'

Cleared to 46
feet at MLW.

71° 25'

24° 30'



Director
Coast & Geodetic Survey
U. S. Dept. of Commerce Bldg.,
Washington 25, D. C.

H-8367 Ad. WK.

Commanding Officer
USC&GS Ships WAINWRIGHT & HILGARD
102 W. Olney Rd., Norfolk 10, Va.

Southern Half

Special Report, Special Project 22-62, H-8367 S/2 (ECFP 1856)

REFERENCE: 1. Instructions - Special Project 1-63, 2100B-pt, S-2-W&H
dated March 19, 1963 (Items #25 & 26)

In accordance with the referenced instructions above, additional wire drag and hydrographic investigations were carried out as noted on the bromide print accompanying the blueline print of survey No. H-8367 S/2 (ECFP-1856).

Investigations proceeded in the following manner with results and recommendations as noted:

H-8367 Ad. WK. Southern Half

WAINWRIGHT & HILGARD - A day - 27 June 1963

originating with H-4006 W.D. (1917)
1. The 32-foot ¹⁹⁶³OBSTR. in Latitude $41^{\circ} 27.11' N.$, Longitude $71^{\circ} 24.95' W.$ was disproved by wire drag operations. The position of the charted obstruction was cleared to an effective drag depth of 45 feet with no obstructions or hangs encountered in the 0.2 square miles dragged. It is recommended that the charted ¹⁹⁶³32-OBSTR be deleted from this area. * See Review S. Half-Item 1. *Rev 14 #7423*

WAINWRIGHT & HILGARD - B day - 7 July 1963

originating with H-8367 (1956-57) 59.4
2. The charted 21-foot shoal in Latitude $41^{\circ} 25.99' N.$, Longitude $71^{\circ} 21.78' W.$ was disproved by wire drag operations. The position of the charted shoal was cleared to an effective drag depth of 330 feet with no hangs incurred. It is recommended that this sounding be expunged from the chart. *41.8 #7496*

CONCUR

Launch CS-181 - a day - 21 June 1963

3. The charted pier, Latitude $41^{\circ} 28.93' N.$, Longitude $71^{\circ} 20.96' W.$ was verified. (position 1-3a) CONCUR - *See Review 5.*

42. Additional hydrography was carried out in Latitude $41^{\circ} 28.52'$, Longitude $71^{\circ} 22.68'$ to further develop the charted 5-foot shoal. The only indication of this shoal was a rock, covered 5 feet at MLW, 30 meters east of the charted sounding. (pos. 16a) *See Review*

53. Bass Rock, Latitude $41^{\circ} 27.27'$, Longitude $71^{\circ} 23.45'$ was investigated and found to be bare 2 feet at MLW. (pos. 29a) *See Review*

Launch CS-181 - b day - 9 July 1963 (DE-723 fathometer)

61. Additional hydrographic lines were run from Latitude $41^{\circ} 26.35'$ to Latitude $41^{\circ} 26.85'$, Longitude $71^{\circ} 25.70'$ to delineate the existing holiday. (pos 1b-15b) Several soundings were smooth plotted from Rs. 1-15b to fill in the holiday area.

72. Additional hydrography was carried out in the vicinity of Whale Rock, Latitude $41^{\circ} 26.66'$, Longitude $71^{\circ} 25.46'$ to delineate the limits of the shoal extending east and northeast of the rock. (pos. 16b-35b) Sounding lines failed to locate the 9 and 11-foot shoals north and east of the rock. *See Review*

83. Additional hydrography was run in Latitude $41^{\circ} 26.60'$, Longitude $71^{\circ} 25.38'$ to investigate the charted 28 and 35-foot soundings. Both soundings were verified by echo sounder. (pos. 36b-52b) The soundings investigated were confirmed by 27 ft, 32 ft, and 33 ft soundings in the approx. vicinity of the above position. *See Review*

94. An additional line of hydrography was run from Latitude $41^{\circ} 26.11'$, Longitude $71^{\circ} 24.99'$ to Latitude $41^{\circ} 27.44'$ to fill in the existing holiday. This line failed to detect any evidence of the forementioned charted 32-foot "OBSTR" (pos. 53b-65b) Soundings from Rs. 59-65b were smooth plotted in the holiday area. *See Item 1, above and in Review*

10. A hydrographic investigation was conducted in the vicinity of Latitude $41^{\circ} 28.06'$, Longitude $71^{\circ} 25.3'$ to verify or disprove the existence of the charted 7, 11, and 9-foot shoals and the charted rock awash. All the shoal soundings were verified by echo sounder while the rock awash at MLW was found to be non-existent. (pos. 66b - 87b) *See Review*

11. The rock at Latitude $41^{\circ} 28.31'$, Longitude $71^{\circ} 25.11'$ bare 4 feet at MLW was found to be non-existent. (pos. 88b) Verified rock awash at Lat $41^{\circ} 28.31'$, Long $71^{\circ} 25.11'$ not confirmed or disproved at the above position. It originates with H-3463 (1912). *See Review*

Hydro-skiff CS-771 - a day - 9 July 1963

1. The uncharted ship aground in Latitude $41^{\circ} 26.6'$, Longitude $71^{\circ} 21.15'$ was investigated by fathometer and visual search. No portion of the ship was found either aground or submerged. Assumed to have been removed - Not charted *Oct 21, 1957*

2. The charted 18-foot sounding in Latitude $41^{\circ} 27.35'$, Longitude $71^{\circ} 19.36'$ was verified by a series of sounding lines with a least depth of 19 feet determined by echo sounder. (pos. 1a-11a) In addition, a split line was run as required by the bromide, 100 meters east of the charted 18. (pos. 4a-6a) *See Review*

14. *See Review*

Accepted hydrographic procedures were followed in carrying out these special investigations. CS-181 was equipped with Raytheon fathometer #211, while hydro-skiff CS-771 contained #541. Pole soundings were obtained when necessary and check angles were obtained on all located objects. All control used is existing on the blue line print of survey H-8367 S/2 with the following exceptions:

Signal: Jam - Sheet H-8367 N/2

Ton - Brenton Reef Light (not plotted on H-8367 B/2)

Newport, Rhode Island standard tide gage was used for tidal data with hourly heights furnished by the Washington Office. Because of significant range and time differences, the following corrections were taken from C&GS Tide Tables for Beavertail Point, Rhode Island and applied to actual heights observed at Newport, Rhode Island:

High Water: - 02 minutes and 0.0 feet

Low Water: - 05 minutes and 0.0 feet

Edwin K. McCaffrey
Edwin K. McCaffrey

ABSTRACT OF CORRECTIONS TO ECHO SOUNDINGS

1963

S.P. 22-62, survey H-8367 S/2 (ECFP 1856)

<u>CS-181</u>	<u>Fathometer #211</u>	<u>Hydro-skiff CS-771</u>	<u>Fathometer #541</u>
<u>Depth</u>	<u>Correction</u>	<u>Depth</u>	<u>Correction</u>
0.0'	0.0'	0.0'	-1.0'
6.3'	+ 0.2'	on	
14.3'	+ 0.4'		
20.3'	+ 0.6'	<u>Phase Comparison</u>	
26.1'	+ 0.8'	<u>Scale</u>	<u>Correction</u>
32.7'	+ 1.0'	A	0.0
40.0'	+ 1.2'	B	0.0
47.1'	+ 1.4'		
55.3'	+ 1.6'		
65.3'	+ 1.8'		
on			

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8367 Ad. Wk.

Records accompanying survey: Smooth sheets
boat sheets 1+1; sounding vols. 1+2; wire drag vols. 2..
Descriptive Reports 1..
graphic recorder envelopes 3+2;
special reports, etc. 1-Bromide copy of H-8367 N/2.
1- " " " " " " S/2

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

Number of positions on sheet	.....	346
Number of positions checked	.....	300
Number of positions revised	.....
Number of soundings revised (refers to depth only)	.....
Number of soundings erroneously spaced	.....
Number of signals erroneously plotted or transferred	.....
Topographic details	Time	.....
Junctions	Time	.....
Verification of soundings from graphic record	Time	.....
Special adjustments	Time	.....

Verification by *Mark J. Fries*..... Total time *75 hr.* Date

Reviewed by Mark Fries Time 36 hr Date July 15, 1976

Insp by Romeburg
✓ D. R. Engle

48 hrs 1-24-78
25 hrs 5-15-79

OFFICE OF MARINE SURVEYS AND MAPS

HYDROGRAPHIC SURVEYS DIVISION

MODIFIED HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-8367 Ad. Wk.

FIELD NO. ECFP-1856

Rhode Island, Narragansett Bay, Entrance Narragansett Bay

SURVEYED: May 24 - July 9, 1963

SCALE: 1:10,000

PROJECT NO.: SP 1-63

SOUNDINGS: DE-723 Depth Recorder,
Hand Lead, Pole

CONTROL: Sextant Fixes on
Shore Signals

Chief of Party	E. K. McCaffrey
Surveyed by	D. W. Crawford
.....	J. S. Midgley
.....	E. J. Murphy
Soundings Plotted by	M. J. Friese
Verified by	M. J. Friese
Reviewed by	M. J. Friese
	Date: July 16, 1976
Cursory inspection made--survey	D. J. Romesburg
processing considered complete	January 24, 1978

1. Purpose of Survey

The purpose of the additional work of 1963 was to investigate shoal soundings, rocks, and obstructions, and to furnish additional hydrography in areas of widely spaced sounding lines. The items investigated include those of questionable validity from the original work on H-8367 and those which had been carried forward to H-8367 from prior surveys.

2. Office Work

The results of the additional work have been plotted on the smooth sheet of H-8367 (1957) in red violet and violet ink.

The field work, sounding records, and the Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual except as follows:

a. The computations by the field personnel of an ISSP (initial, settlement, squat, and phase) corrector to all soundings had not been incorporated in the sounding volumes or Descriptive Report.

b. There were often no scale indications marked on the fathograms by field personnel.

c. Fathogram paper for an 808 depth recorder was used on the Raytheon DE-723 Fathometer on b-day, May 25, 1963.

3. Results of Survey

The existence of most of the questionable rocks, soundings, or obstructions were confirmed or disproved, although not always in the exact position or with the same least depth as previously determined. Because the additional work of 1963 did not adequately develop some of the questionable prior rocks or soundings, they were retained on the smooth sheet. A discussion of each item not adequately covered in the Additional Work section of the Descriptive Report follows:

Northern Half

Item 3 - The shoal protrusion and rock awash in latitude $41^{\circ}30.44'$, longitude $71^{\circ}24.13'$ originate with the 1956-57 work, H-3493 (1912) and H-787b (1862). The shoal protrusion was confirmed and should be retained. The rock awash was not found; however, it is being retained and shown as a submerged rock.

Item 5 - The 2 Rk, 3 Rk, 4 Rk, and rock awash in latitude $41^{\circ}29.71'$, longitude $71^{\circ}23.32'$ had been inadvertently carried forward to the 1957 survey from H-787b (1862) even though the three submerged rocks had earlier been deleted from the chart on the basis of Chart Letter 721 (1904). Therefore much of this area was investigated unnecessarily. However, the prior feature shown as a rock awash was determined by the 1963 work to be covered by 3 feet at MLW and has been revised accordingly.

Item 6 - A rock crib bare 2 feet at MHW in latitude $41^{\circ}29.37'$, longitude $71^{\circ}24.12'$ originates with Chart Letter 445 of 1949. An original position plot of the rock crib was unavailable at the time of the review of H-8367 in 1962, and it was suggested at that time that the true location of this item was probably closer inshore where rocks awash and shoaler depths were evident. Furthermore, nothing was found at the reported position during the 1957 survey. Based on this supposition, the rock crib was removed from the chart. However, two sounding lines on the 1963 Additional Work found indications of a sharp feature covered 15 feet at the above original rock crib location. A submerged crib should be charted at this position until future development determines the extent and/or least depth of this feature.

Southern Half

Item 1 - The 32-foot obstruction charted in latitude $41^{\circ}27.11'$, longitude $71^{\circ}24.96'$ from H-4006 (WD) 1917 is discussed on page 14 of the review of the 1957 work and in the hydrographer's special report attached. The reviewer concurs that the 32-foot depth has been disproved. However, the existence of an obstruction has not been disproved. It is recommended that the charted 32-foot obstruction be revised to an obstruction cleared to 4.6 feet. Plot of wire drag is attached to this Descriptive Report. 1463

Item 3 - The charted pier in latitude $41^{\circ}28.22'$, longitude $71^{\circ}20.97'$ originates with Chart Letter 373 of 1961 and was confirmed by the 1963 work. A steel T-shaped pier approximately 40 meters in length was found at the above position.

Item 4 - The 5-foot shoal in latitude $41^{\circ}28.52'$, longitude $71^{\circ}22.68'$ from H-785 (1865) was verified and described as a rock on the 1963 Additional Work. A detached position taken on the feature shows its location to be approximately 30 meters east of its charted position.

Item 5 - Bass Rock formerly shown as an islet in latitude $41^{\circ}27.27'$, longitude $71^{\circ}23.45'$ originates with T-1119 (1869). An investigation of this item determined it to be a low-water rock which uncovers 2 feet at MLW. The entire rock is approximately 25 meters long in a SW-NE direction. It has been revised accordingly on the survey.

Item 7 - The 9- and 11-foot soundings north and west of Whale Rock in latitude $41^{\circ}26.66'$, longitude $71^{\circ}25.46'$ were disproved by the work of 1963. These sounding were probably misplotted or recorded in error as present depths of 44 to 55 feet were found at this location.

Item 10 - The 7-, 11-, and 9-foot shoals in latitude $41^{\circ}28.06'$, longitude $71^{\circ}25.3'$ from H-3403 (1912) were verified by the 1963 Additional Work. The rock awash shown in this area was not adequately investigated to disprove or confirm its existence and is being retained as a submerged rock.

Item 11 - The rock bare 4 feet MLW in latitude $41^{\circ}28.29'$, longitude $71^{\circ}25.09'$ originates with H-3403 (1912). No evidence of the rock as described on the earlier survey was found after a lengthy investigation of the area. However, several shoal indications were recorded on the Fathometer while drifting over the area. This rock has been retained on the present survey as a submerged rock.

Item 13 - The 18-foot sounding in latitude $41^{\circ}27.35'$, longitude $71^{\circ}19.36'$ from H-1790 (1887) is supported by 16-, 18-, and 19-foot depths. A rock, covered 11 feet was located by the 1963 work 20 meters north of the above position and is also shown on the smooth sheet.

Item 14 - The 23-foot sounding in latitude $41^{\circ}27.08'$, longitude $71^{\circ}18.97'$ from H-1790 (1887) was not adequately investigated to prove or disprove its existence and has been retained.

Examined and Approved:

R.H. Carstens
for Chief
Hydrographic Surveys Division

TIDE NOTE FOR HYDROGRAPHIC SHEET

February 5, 1964

Nautical Chart Division: R. H. Carstens

Plane of reference approved in
1 volumes of sounding records for

HYDROGRAPHIC SHEET 8367 Add.Wk.

Locality Narragansett Bay
Plum Beach - Dutch Island, Rhode Island

Chief of Party: E. K. McCaffrey (1963)


Plane of reference is Mean low water

~~for index staff~~

~~below~~

The height of mean high water above Plane of reference at
the working grounds is $3\frac{1}{2}$ feet.

Condition of records satisfactory except as noted below:


Chief, Tides and Currents Branch

RHC

TIDE NOTE FOR HYDROGRAPHIC SHEET

April 8, 1964

Nautical Chart Division: R. H. Carstens

Plane of reference approved in
4 volumes of sounding records for

HYDROGRAPHIC SHEET 8367 (Add. Wk.)

Locality Beavertail Point, Newport Neck,
Narragansett Bay, Rhode Island

Chief of Party: E. K. McCaffery (1963)

Plane of reference is mean low water

ft. on tide staff at

ft. below B. M.

Height of mean high water above plane of reference at
the working grounds is 3.5 feet.

Condition of records satisfactory except as noted below:

Tide reducers for the following positions have been revised.
in red and verified:

<u>Vol.</u>	<u>Position</u>
Wire Drag	1A - 44A

J. M. Symons

Chief, Tides and Currents Branch

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-8367 Ad. Wk.

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
236	3-11-64	GEO. R. McCANN	Full Part Before After Verification Review Inspection Signed Via Drawing No. 31
1210	6-22-64	GEO. R. McCANN	Full Part Before After Verification Review Inspection Signed Via Drawing No. 44 & 44M <i>Verified thru chrt 236 dwg 31 RND 6-23-64</i>
353	7-15-64	J. T. Gallahan	Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>no change thru 236</i>
236	11/30/65	M. Rogers	Full Part Before After Verification Review Inspection Signed Via Drawing No. 33 <i>Re-examined in conjunction with the full appl. of H-8367 original work.</i>
353	126-65	Fannie Penn	Full Part Before After Verification Review Inspection Signed Via Drawing No. 40 <i>fully applied</i>
1210	2 Mar 71	T. D. Sanzchi	Full Part Before After Verification Review Inspection Signed Via Drawing No. 52 <i>appl thru chrt. 353 dwg # 42 (Proof)</i>
236	3/15/76	Josephine R. Harris	Full Part Before After Verification Review ^{BEFORE} Inspection Signed Via Drawing No. 44
1210	3/15/77	Josephine R. Harris	Full Part Before After Verification Review ^{BEFORE} Inspection Signed Via Drawing No. 58 <i>Made changes thru Chart 236</i>
353	4/30/77	Josephine R. Harris	Full Part Before After Verification Review ^{BEFORE} Inspection Signed Via Drawing No. 50 <i>Applied thru Chart 236</i>
13223 (236)	3/13/80	Barbara Lutz	Full Part Before After Verification Review Inspection Signed Via Drawing No. 47 <i>MINOR CORRECTIONS</i>
13221 (353)	3/13/80	Barbara Lutz	Full AFTER VERIFICATION REVIEW INSPECTION SIGNED VIA DRAWING NO. 52 <i>MINOR CORRECTIONS</i>
13218 (1210)	3/14/80	Barbara Lutz	Full AFTER VERIFICATION REVIEW INSPECTION SIGNED VIA DRAWING NO. 61