8090

Diag.Cht. Nos. 1205-2 and 1206-2

Form 504

U. S. COAST AND GEODETIC SURVEY

DEPARTMENT OF COMMERCE

DESCRIPTIVE REPORT

Type of Survey Hydrographic

Field No. ECTP-05153 *Office No.* H-8090

LOCALITY

State New Hampshire

General locality Portsmouth

Locality Portsmouth Harbor

194/ 53-54-55

CHIEF OF PARTY

Clarence R. Reed, COMDR.

LIBRARY & ARCHIVES

DATE March 31, 1955

B-1870-1 (1)

8090

Form 537
(Ed. June 1946)

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-8090

Field No. ECFP-05153

State NEW HAMPSHIRE

General locality PORTSMOUTH, ~~NEW HAMPSHIRE~~

Locality PORTSMOUTH HARBOR

Scale 1:5,000 Date of survey 6/18 to 9/17/53
6/18 to 11/2/54
6 & 7 June 1955

Instructions dated 6 March 1953

Vessel EAST COAST FIELD PARTY

Chief of party CLARENCE R. REED, ~~COMDR.~~, & M.T. Paulson

Surveyed by R.B. NOBLE, C.E. Horne & C.W. Tupper

Soundings taken by ~~echometer~~ graphic recorder, hand lead, ~~wire~~ POLE

Fathograms scaled by PARTY PERSONNEL

Fathograms checked by R.B. NOBLE & NORFOLK PROCESSING OFFICE

Protracted by ALLEN K. SCHUGELD

Soundings penciled by ALLEN K. SCHUGELD

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

REMARKS: This folder contains the Descriptive report for work done during the 1953 and 1954 field seasons. & add'l work of 1955

[redacted]

U. S. GOVERNMENT PRINTING OFFICE 917032

NOTES FOR DESCRIPTIVE REPORT
TO ACCOMPANY

Hydrographic Sheet H-8090 , (FIELD NO. ECFP 05153)

Portsmouth Harbor, New Hampshire

EAST COAST FIELD PARTY CLARENCE R. REED, CHIEF OF PARTY

PROJECT CS-355 1953 SCALE 1:5,000

* * * * * * * * * * * *

PROJECT This survey was accomplished under instructions dated 6 March 1953, calling for modern hydrographic surveys of the northern Massachusetts and New Hampshire coastal regions.

SURVEY LIMITS AND DATES The survey on this sheet covers the Piscataqua River and Portsmouth Harbor from the bridge at Nobles Island to a line from Jaffrey Point Daybeacon to Whaleback Lighthouse.

Junctions were made with prior survey H-7795, scale 1:5,000 1950, at the east and west ends of Little Harbor and with the contemporary survey shown on sheet H-8092 (1953-54), (FIELD NO. ECFP 1553) on the northwest and southeast.

VESSEL AND EQUIPMENT Launch No. CS-82 was used for the hydrography. The launch operated from a mooring at the U.S. Coast Guard Station at Fort Constitution, New Castle Island, Portsmouth, New Hampshire.

Graphic recorders Nos. 150 SPX and 138 SPX were used with transducers mounted inboard. Soundings other than echo soundings were taken with sounding pole or hand lead.

TIDE AND CURRENT STATIONS The tide note is attached to this report. No current stations were observed.

SMOOTH SHEET The smooth sheet is to be plotted by the Norfolk Processing Office.

CONTROL STATIONS The control consisted of triangulation and photo-hydro stations. Photo hydro stations were transferred from Air-Photo Compilation Sheet No. T-11168 (1952). One hydrographic Station on the southwest end of Jamaica Island was located by sextant fix.

SHORELINE AND TOPOGRAPHY The shoreline and topographic features were transferred from Air-Photo Compilation Sheet T-11168 (1952). No shoreline for the north side of the channel was available on this sheet. The low water line is not defined by the soundings except in certain flat area, due to the steepness of the banks. Review, par. 1

SOUNDINGS Depths were measured with graphic recorders, sounding pole and hand lead. Bottom samples were obtained with an armed hand lead.

CONTROL OF HYDROGRAPHY ~~point-sextant-fix method.~~ Hydrography was controlled by the three-point fixes were taken at 1 minute intervals on sounding lines. Check angles were observed at detached positions where possible.

ADEQUACY OF SURVEY This survey is considered complete and adequate to supersede prior surveys. The junctions with adjoining surveys are satisfactory except for a disagreement between depths obtained on H-7795 (1950), scale 1:5,000 at the entrance to Little Harbor. It appears that the soundings from H-7795 (1950) are plotted too far west as one 11 foot sounding in Latitude 43°-03.38', Longitude 70°-42.69' falls in the midst of a group of rocks awash, while 11 foot depths were found 35 meters east on the 1953 survey. (Discrepancies resolved) Review, par. 4.

CROSSLINES Prescribed crosslines were run with satisfactory agreement at crossings.

COMPARISON WITH PRIOR SURVEYS Review, par. 5. The general agreement between this survey and prior surveys is good, except for many changes in the shoreline and topographic details. Charted soundings were applied to the sheet and appear in green ink, thereforeit is felt that a detailed comparison with the charted soundings will be more valuable than a detailed comparison with prior surveys.

COMPARISON WITH CHART Review, par. 6. General agreement between this survey and the charted soundings is good. A discussion of discrepancies found follows:

The bridge in ruins shown just northwest of the present bridge in Latitude 43°-05.10', Longitude 70°-45.65', is no longer in existence. It is recommended that this feature be deleted from the chart. deleted

There is a stone filled crib in the vicinity of Latitude 43°-05.20, Longitude 70°-45.53' which is not charted. This crib is shown on Air-Photo Compilation Sheet No. T-11143 (1953). It is recommended that this feature be added to the chart. now charted

The pier in ruins in Latitude 43°-04.96' Longitude 70°-45.73' is no longer in existence except for the pilings located by positions 27 and 28 k. It is recommended that the pier in ruins be deleted from the chart and the remaining pilings be added. (chart revisions made)

The island charted in Latitude 43°-04.92' Longitude 70°-45.79' is actually connected to the mainland of Nobles Island by a marshy point of land which floods only on extremely high tides. This feature is shown correctly on Air-Photo Compilation Sheet No. T-11168 (1953). It is recommended that the charted shoreline be revised in this area. (chart revision made)

The shoreline on the north end of Nobles Island, between the bridges appears to be in error. This portion of the shoreline is correct on Air-Photo Compilation Sheet T-11168 and it is recommended that the charted shoreline be revised. (chart revised)

Several changes in the charted piers in ruins along the south shore of the Piscataqua River between Longitude 70°-45.80' and 70°-45.55' were noted. These features appear to be correctly shown on Air-Photo Compilation Sheet No. T-11168 and the chart should be revised accordingly. (Chart revised)

There are no overhead cables (Item 16 Preliminary Review) between Portsmouth and Badgers Island in Longitude 70 -45.35' or between Kittery and Seavey Island in Longitude 70°-44.38' as shown on the chart. It is recommended that these features be deleted from the chart. (deleted)

The charted bridge in ruins between Kittery and Badgers Island in Longitude 70°-45.17' is no longer in existence, however two

of the piers still remain and are in good condition. Signal HIS was located on the center of one pier and the other was located by sextant fix and is recorded as position 19 w in sounding vol. no. 11. Both piers are bare approximately 3 feet at MHW. It is recommended that the bridge be deleted from the chart and the piers added. (Chart revisions made)

The seven pilings and wreck charted in Latitude 43°-04.65' Longitude 70°-45.10' are no longer in existence. According to local fishermen the pilings protected the outfall of a large city sewer which has been abandoned. It is recommended that the pilings and wreck be deleted from the chart. (deleted)

There is an overhead cable crossing between Frame Pt. and Salters Island in Longitude 70°-44.70' which is not charted. It is recommended that this cable crossing be added to the chart. Sufficient information for charting can be taken from the boat sheet. (Cab. crossing charted)

The charted pier in ruins in Latitude 43°-04.36' Longitude 70°-43.28' is no longer as charted. An isolated group of pilings, not connected with the shore is all that remains of the pier. These pilings were located, described and recorded as positions 20 - 23 aa in sounding volume No. 11. It is recommended that this charted feature be revised to agree with this survey. Several rocks were found in the large cove ~~south~~ west of these pilings. These rocks were described, located and recorded as positions 14 - 19 aa in sounding volume No. 11 and should be added to the chart. (Chart revisions made)

The charted pier in ruins in Latitude 43°-04.87' Longitude 70°-42.52' is no longer in existence and should be deleted from the chart. (deleted)

The railway charted in Latitude 43°-04.25' Longitude 70°-42.78' is almost completely gone, a few rusty rails below the HWL, remain and are in such poor condition that it is doubtful they will last more than a few years. It is recommended that this feature be deleted from the chart. (charted in ruins)

The railway charted 30 meters north of and parallel to the large pier on the southwest end of Gerrish Island is no longer in existence and should be deleted from the chart. (deleted)

There are several uncharted ~~beacons~~ markers in the channel north of Seavey Island. These ~~beacons~~ markers have been in place many years and should be added to the chart. They were located by sextant fix and are described and recorded in the sounding volumes. (3 now charted) P.s 81, 82, 84, 85. Review, PGB.

MARKERS

The sunken rocks in Latitude 43°-05.03' Longitude 70°-45.~~55~~25' are incorrectly charted. A rocky reef, just awash at MHW, actually exists. The limits of this reef are outlined on Air-Photo Compilation Sheet No. T-11168 and were verified by inspection during hydrography. It is recommended that the charting of this reef be revised to agree with the survey. The limits of the reef are also defined on the boat sheet. (Chart revised)

The island in Latitude 43°-04.77' Longitude 70°-43.63' is now connected to the mainland of Jamaica Island by earth fill. The western shoreline of Jamaica Island has also been changed considerably by the addition of earth fill placed there by the Navy. (Charted shoreline revised)

Most of the dolphins shown on the north shore of Seavey Island on chart 329 have been removed. The remaining ones have been located and described in the sounding volumes and are the only ones which should be charted.

The charted position of the red beacon on the south end of Hicks Rocks is in error. This beacon was located by planetable on sheet No. Ph.-Aa-53, and is approximately 11 meters north of the charted position. Bn. now charted correctly in φ 43°04.74' λ 70°43.18'

PRELIMINARY REVIEW ITEMS BY CHART DIVISION CHARTS 229 & 329

The following items of the Preliminary Review were investigated with the following findings.

Item 1 (Chart 229) The charted rock awash in Latitude 43°-05.10', Longitude 70°-45.45' was not found after a thorough search, from a skiff, at near low water. It is recommended that this rock be deleted from the chart. The charted rocks in this area, indicated on the Preliminary Review of chart 329, were investigated from a skiff with the following findings.

The two charted sunken rocks were found and located as positions 22 and 23 k, they are both 2 meters in diameter and covered 3.2 feet at MLW. The position of one of these rocks differs by 18 meters from the charted position. There is a rock awash lying to the NW which was found, located and recorded as position 21 k, this rock bares 2.4 feet at MLW. It is recommended that this rock be added to both charts, and that the sunken rocks also be shown on chart no. 229.

The charted 18 foot shoal in Latitude 43°-04.83' Longitude 70°-45.04' was investigated by additional sounding lines and considerable drift sounding. The shoalest sounding obtained was a hand lead sounding of 12.0 feet on course brown sand, this sounding is recorded as position No. 37 t. It is recommended that this new shoaler depth be charted. This danger was reported in a letter dated 8/14/53. (12 ft. now charted)

The charted 18 foot shoal in Latitude 43°-04.82' Longitude 70°-44.95' was closely developed by additional sounding lines and drift soundings. No evidence of any shoal in this area was found. The Portsmouth Harbor Pilot believes this area was dredged some years ago by the Navy and the shoal removed at that time. It is recommended that the 18 foot sounding be deleted from the chart. Review, par. 5 (1)

The charted 6 foot sounding in Latitude 43°-04.65' Longitude 70°-44.84' was developed by additional lines and drift sounding. The shoalest sounding obtained was a fathometer sounding of 4.4 feet on rocky bottom. This sounding, could not be verified by a hand lead or pole sounding due to the swift current flowing. It is recommended that the 6 foot sounding be deleted from the chart and the new shoaler depth added. (4 ft. now charted)

Shoaler soundings than charted were also found 100 meters east, in the vicinity of the black beacon. This area was closely developed and the *shoalest sounding obtained was a pole sounding of 4.4 feet on rocky bottom, recorded as position 52 p. It is recommended that the charted soundings in this area be revised to agree with the shoaler soundings of this survey. * 2ft. fath. sdg. on line 19-20p - φ 43°04.64', λ 70°44.78' (now charted)

Item 19 The most northwesterly of these two charted rocks is actually the extreme offshore tip of a rocky point of Pierces Island. A sextant fix was taken on this point and the position agreed exactly with the position of the charted rock. The other charted rock was not found after a thorough search. It is recommended that both these rocks be deleted from the chart, and that rock ledge symbol be added as shown on Air Photo Compilation Sheet 11168.(1953) Review, par. 6A(1)

Item 14 The 4 foot sounding questioned by the review was investigated by additional sounding. A hand lead sounding of 2.6 feet on soft black mud bottom was the shoalest depth found. This sounding is recorded as position 77 v. It is recommended that the charted 4 foot sounding be deleted and the new shoaler depth be added. (2 ft. now charted in φ43°04.21', λ70°43.87')

Item 15 The charted 12 foot shoal in Latitude 43°-04.60', Longitude 70°-43.65' was developed by additional sounding lines and drift sounding. The shoalest depth obtained was a hand lead sounding of 12.8 feet on coarse brown sand and pebbles, recorded as position 17 t. It is recommended that this 12 foot sounding continue to be charted. (11-ft. sdg. on line 9-not Review, par. 6 Chart 11)

The reef in Latitude 43°-04.66', Longitude 70°-43.70' was found, described and located. This reef bares 2.0 feet at MLW. It is recommended that this reef be added to the chart. (Reef now charted)

Shoaler soundings than charted were found in the vicinity of the charted 12 foot shoal in Latitude 43°-04.70', Longitude 70°-43.20'. A hand lead sounding of *9.0 feet on rocky bottom, recorded as position 108 v, was the shoalest depth obtained. It is recommended that the 12 foot sounding be deleted from the chart and the new, shoaler sounding added. *(9 ft. now charted)

Item 13 Cod Rock, in Latitude 43°-04.39' Longitude 70°-42.67' was closely developed. The shoalest sounding obtained was a hand lead sounding of 18.6 feet, recorded as position 27 r. Since this survey and the charted soundings in this area are essentially the same, it is recommended that Cod Rock continue to be charted as at present.

The 25 foot shoal in Latitude 43°-04.71', Longitude 70°-42.61' was found as charted. Extra sounding lines were run in this area to define the limits of this shoal. No hand lead sounding was obtained on this shoal. It is recommended that the present charted soundings be retained. (22 ft. now charted in above pos. from pres. survey)

Item 17 The area in the vicinity of Latitude 43°-04.34', Longitude 70°-42.17' was closely developed. The shoalest sounding obtained was a hand lead sounding of 34.8 feet on gravel and shell bottom, recorded as position 127 v. This sounding occurred 15 meters east of the charted 34 foot sounding therefore it is recommended that the present charted soundings in this area be retained. Review, par. 6

The 24 foot shoal charted in Latitude 43°-04.20', Longitude 70°-42.00' was found and developed. The shoalest sounding obtained was a hand lead sounding of 19.2 feet on yellow sand and shell bottom, recorded as position 30 x. This sounding occurred 35 meters NW of the charted 24 foot depth. It is recommended that the charted 24 foot sounding be deleted and the new shoaler depth be added to the chart. (19 now charted)

The 28 foot sounding charted in Latitude 43°-04.02', Longitude 70°-42.09' was developed by additional sounding. The shoalest sounding obtained was a hand lead sounding of 30.8 feet on yellow sand and pebble bottom, recorded as position 52 x. It is recommended that the charted 28 foot sounding be retained. (28 retained from H-3976 W.D. (1917) supported by a 29 on pres. survey)

The 14 foot sounding charted in Latitude 43°-03.78', Longitude 70°-42.07' was found and developed. The shoalest sounding obtained was a hand lead sounding of 15.4 feet on yellow sand and pebble bottom, recorded as position 79 x. This sounding occurred 25 meters NW of the charted 14 foot depth. It is recommended that the charted 14 foot sounding be retained. ⟶ (11 ft. charted in φ43°03.78', λ70°42.08', from present survey)

Item 12 There is no rock crib in Latitude 43°-03.82', Longitude 70°-42.63' at the present time.

Item 16 Bridge and cable clearances were submitted as a special report dated 1/20/53. All bridge and cable clearances determined have also been inked on the boat sheet.

DANGERS AND SHOALS Several uncharted dangers and shoals were discovered during the survey and are described below.

Two sunken rock piles were discovered in Latitude 43°-04.97', Longitude 70°-45.65'. These rock piles are the remains of rock - filled cribs that once supported the charted pier in ruins shown on chart 329. The most northerly of the two is 2 meters in diameter and covered 4.4 feet at MLW, recorded as position 26 k. The other rock pile is 8 meters in diameter and is covered 0.7 feet at MLW. These two dangers were reported by letter dated 7/17/53. (now charted)

An uncharted piling in Latitude 43°-04.23', Longitude 70°-43.88' was found, located and recorded as position 9 aa. This piling, of a permanent nature, is 1.0 feet in diameter and is bare 2.5 feet at MLW. (now charted)

A rock in surrounding depths of 5 feet was found in Latitude 43°-04.85', Longitude 70°-45.08'. This rock is 8 meters in diameter and bares 0.6 feet at MLW. This rock is recorded as position 33 u. (rock charted)

Two rocks in Latitude 43°-04.93', Longitude 70°-43.26' were found, located and recorded as positions 26 and 27 u. These rocks are each 4 meters in diameter and bare 2.2 feet at MLW. (rocks charted)

Two rocks were found in Latitude 43°-04.08', Longitude 70°-44.50'. These rocks are recorded as positions 34 and 35 u. The most northerly rock is 2 meters in diameter and bares 1.6 feet at MLW. The most southerly rock is 1 meter in diameter and bares 1.1 feet at MLW. (charted as one rock)

A large rock was discovered in Latitude 43°-04.00', Longitude 70°-44.20'. This rock, recorded as position 51 u, is 10 meters in diameter and bares 6.5 feet at MLW. (charted)

A rock in Latitude 43°-04.25', Longitude 70°-44.20' was found and located as position 52 u. This rock is 2 meters in diameter and bares 1.8 feet at MLW.

Stielman Rocks in Latitude 43°-04.02', Longitude 70°-42.50' are incorrectly charted. This area was closely developed by sounding lines and searches at low water. The shoalest depth obtained was a hand lead sounding of 2.2 feet. The charted position of the black beacon was also found to be in error. This was discovered when a crossline beginning with position 131 was run on range with the beacon and Portsmouth Harbor Lighthouse. The beacon was subsequently located by sextant fix and found to be 65 meters WSW of the charted position. The incorrect charting of Stielman Rocks was reported in a letter dated 8/19/53. (chart revised)

A rock in Latitude 43°-03.66', Longitude 70°-41.75' was found, located and recorded as position 38u. This rock is 10 meters in diameter and bares 3.8 feet at MLW. (rock charted)

A sunken rock in Latitude 43°-03.81', Longitude 70°-42.00' was located and recorded as position 43 u. This rock is 4 meters in diameter and is covered 4.4 feet at MLW. (rock charted)

A shoal in Latitude 43°-03.97', Longitude 70°-42.17' was discovered and developed by additional sounding lines and drift sounding. The shoal appears to be small in size with a least depth of 37.2 feet on sand, shell and pebble bottom. This sounding is recorded as position 11 ca.

It is recommended that the preceding dangers, shoals and rocks be added to the chart.

COAST PILOT INFORMATION Submitted as a special report dated 23 October 1953.

LANDMARKS FOR CHARTS The following additional landmarks should be added to chart 329. - These landmarks recommended for charting in C.I. 363 (54) RKD

White cupola atop black house at old fort. (hydrographic signal CUP) Cupola added to Chart 329 from hydro sheet 6-29-55 RKD. No position given in C.I. 363 (54)

Tall red brick stack, tallest of several on Seaveys Island. (hydrographic signal MUD)

It is recommended that the two flagstaffs now charted as landmarks on Seaveys Island be deleted from the chart as they are not conspicuous. It is also recommended that the cupola on The Wentworth, New Castle Island be called "cupola, largest" as there are several smaller cupolas on the building.

GEOGRAPHIC NAMES There are no changes or additions to the geographic names as charted.

Respectfully submitted

Robert B. Noble

Robert B. Noble
ENS, USC&GS

Approved and forwarded

Clarence R. Reed

Clarence R. Reed
CDR, USC&GS
Chief of Party

TIDE NOTE TO ACCOMPANY

Hydrographic Survey Sheet H- 8090, (FIELD NO. ECFP 05153)

Portable automatic tide gages were maintained at Atlantic Heights, Fort Constitution and Jaffrey Point, New Hampshire. No differences in time or height was applied to the observed tides. Planes of reference were furnished by the Washington Office or cumputed from elevations of previous tidal bench marks. Tides from the standard automatic gage at Portsmouth Navy Yard were furnished by the Washington Office.

STATION	LATITUDE	LONGITUDE	MLW ON STAFF
Newington, N.H.	43°-06.92'	70°-48.70'	2.6'
Atlantic Heights, N.H.	43°-05.37'	70°-45.92'	4.6
Fort Constitution, N.H.	43°-04.30'	70°-42.67'	2.5
Jaffrey Point, N.H.	43°-03.44'	70°-42.94'	1.9

FATHOMETER CORRECTIONS

PROJECT CS-355

Hydrographic Survey Sheet H-8090, (FIELD NO. ECFP 05153)

The corrections tabulated below are based on an initial set at zero on the fathogram. Where the initial varies from zero on the fathogram INDEX CORRECTIONS must be entered in the sounding volumes.

FATHOMETER NO. 150 SPX

18 June - 12 August 1953

Correction	Depth	
A Range	From	To
+0.4	0.0	5.0
+0.2	5.1	19.0
0.0	19.1	27.5
-0.2	27.6	36.5
-0.4	36.6	48.0
-0.6	48.1	55.0
B Range		
-1.4	all depths	

FATHOMETER NO. 138 SPX

~~15 September~~ 14 aug - ~~17 September 1953~~ 19 oct

Corrections	Depth	
A Rnage	From	To
+0.6	0.0	5.0
+0.4	5.1	14.0
+0.2	14.1	24.0
0.0	24.1	33.0
-0.2	33.1	42.0
-0.4	42.1	50.0
-0.6	50.1	55.0
B Range		
-3.0	35.0	57.0
-3.2	57.1	90.0
C Range		
-5.2	all depths	

Bar check graphs are filed with H-8092

LIST OF SIGNALS
H-8090

TRIANGULATION STATIONS

BACK	WHALEBACK LIGHTHOUSE, 1878-1941
CAST	WENTWORTH HOUSE CUPOLA, 1878
JEFF	JAFFREY POINT, DAYBEACON, 1953
JOHN	PORTSMOUTH ST. JOHNS CHURCH, SPIRE, 1900-28
LAND	PIERCES ISLAND, RANGE FRONT LIGHT NO. 171, 1953
PIPE	CAMP LANGDON, STANDPIPE, 1941
POINT	PORTSMOUTH HARBOR, LIGHTHOUSE, 1878-1941
PORT	PORTSMOUTH, NORTH CHURCH SPIRE, 1900-41
REAR	PIERCES ISLAND, REAR RANGE LIGHT NO. 172, 1953
TALL	PORTSMOUTH NAVY YARD PRISON, TALL BLACK CHIMNEY, 1908-28
WENT	WENTWORTH HOTEL, CUPOLA, FLAGPOLE, 1941-43
WOOD	WOOD ISLAND COAST GUARD, CUPOLA, 1917-43
YARD	KITTERY NAVY YARD, TANK, 1943

TOPOGRAPHIC STATIONS

SOURCE * ECFP-Aa-53

this is a plane table sheet by a photogrammetrist. The control is based on photogrammetric points from T-11168

*Far Red *Sue

SOURCE - ECFP-Ab-53

Hop

SOURCE - AMRP- PHOTO COMPILATION T-11168

Abe	Ace	Arm	Ash	Axe	Ban	Bar	Bat	Bob	Boy	Bus	Car
Cat	Con	Cop	Cow	Cup	Cut	Den	Dim	Doc	Dog	Dom	Dud
Eel	Egg	End	Fat	Fig	Fin	Fir	Fix	Fly	Fox	Fun	Fur
Gab	Gin	Gob	Gul	Ham	Her	Hen	Him	His	Hit	Hot	How
Ice	Ivy	Jam	Jim	Joe	Jug	Ken	Kip	Kit	Lad	Lag	Lap
Lay	Leo	Lew	Lid	Lob	Lot	Low	Man	Mar	Moo	Mud	Nat
Nod	Nut	Oak	Odd	Out	Own	Pal	Par	Pat	Pie	Pin	Pot
Put	Ram	Rat	Rid	Rod	Rum	Sad	Sam	*See	Son	Tac	Tan
Tar	Tim	Tom	Ton	Val	War	Win	Wit	Yel	Zag	Zip	Zoo

HYDROGRAPHIC STATIONS

Lux Vol. 6, Pg. 22

* These stations repositioned on smooth sheet during verification

NAME	LAT.	LONG.	DEPTH IN FT.	POSITION NO.	DATE OF LOCATION
KITTERY FLATS ROCK BUOY 10	43°05.03'	70°45.52'	44	20k	7/2/53
BADAGER ISLAND BUOY 8A	43°04.84'	70°45.40'	51	24k	7/2/53
BACK CHANNEL SHOAL BUOY	43°05.04'	70°43.72'		831	7/8/53
BACK CHANNEL BUOY 5	43°05.01'	70°43.60'		861	7/8/53
BACK CHANNEL BUOY 1	43°04.15'	70°43.30'		29m	7/9/53
BACK CHANNEL BUOY 3	43°04.84'	70°43.31'		30m	7/9/53
BACK CHANNEL BUOY 8	43°04.90'	70°43.40'		31m	7/9/53
GOAT IS. LEDGE LIGHTED BUOY 9	43°04.41'	70°44.02'		40m	7/9/53
BADGERS ISLAND BUOY 1	43°04.85'	70°44.99'		41m	7/9/53
BADGERS ISLAND BUOY 8	43°04.81'	70°45.09'		42m	7/9/53
SEWARD ROCKS BUOY 13	43°04.72'	70°44.98'		43m	7/9/53
HICKS ROCKS BUOY 6	43°04.66'	70°43.19'		74m	7/9/53
FISHING IS. LEDGE BUOY 4	43°04.65'	70°42.30'		153m	7/9/53
COD ROCK BUOY 5	43°04.43'	70°42.63'		1n	7/10/53
SOUTH BN. SHOAL BUOY 11	43°04.65'	70°44.63'	34	12p	7/14/53
STIELMAN ROCKS BUOY 3	43°04.04'	70°42.46'	27	20u	8/3/53
WOOD ISLAND BUOY 2	43°03.63'	70°42.13'	32	114x	8/7/53

GPs - Checked CFK

STATISTICS TO ACCOMPANY

Launch 82

Hydrographic Sheet H8090, (FIELD NO. ECFP 05153)

DATE 1953	DAY LTR	VOL. NO.	LEAD LINES	POLE SDGS.	NO. OF POSITIONS	STAT. MI. SDG.
18 June	a	1	--	1	80	5.7
19 "	b	1	--	10	155	11.6
22 "	c	2	--	26	78	5.4
23 "	d	2	--	2	74	5.5
24 "	e	2&3	--	18	106	5.1
25 "	f	3	--	15	147	7.9
26 "	g	3	--	74	74	3.9
29 "	h	4	--	12	181	12.8
30 "	j	4&5	--	90	158	9.7
2 July	k	5	2	41	86	4.6
8 "	l	5&6	--	39	86	4.9
9 "	m	6	--	42	154	9.4
10 "	n	6&7	--	28	94	7.0
14 "	p	7	5	10	135	9.1
24 "	q	7	--	9	26	2.3
28 "	r	7&8	2	18	111	8.4
29 "	s	8	--	5	148	10.9
30 "	t	8&9	3	1	139	10.0
3 Aug.	u	10	12	--	52	0.0
4 "	v	11	3	62	127	5.7
6 "	w	11	18	--	20	0.0
7 "	x	11	4	1	114	6.7
12 "	y	12	4	1	20	0.8
13 "	z	12 67	2	--	2	0.0
19 "	aa	12 138	15	--	23	0.0
15 Sept.	ba	12	1	--	19	1.3
17 "	ca	12	5	--	43	2.6
			76	505	2457	151.3

Fathometers 150

Area Surveyed: 4.7 square stat. miles

APPROVAL SHEET

HYDROGRAPHIC SURVEY H-8090

The records and boat sheets for Hydrographic Survey H-8090 have been inspected by me and are approved.

Clarence R. Reed

Clarence R. Reed
CDR, USC&GS
OinC, East Coast Field Party

ADDENDUM
To Accompany

HYDROGRAPHIC SURVEY H-8090 (Field No, ECFP-05153)

SOUNDINGS

Generally, soundings at crossings checked very well considering the irregular character of the bottom in this area. On "b" day, vol. 1, all soundings after position 40 were ommitted from the smooth sheet. There is a general disagreement of up to four feet with surrounding hydrography and it appears an arbitrary correction will have to be applied. It is believed probable these discrepancies were caused by the fathometer being out of time, how-ever, this condition is not indicated on the fathogram. An overlay is being submitted with the smooth sheet as an aid for comparison purposes. ("b" day rejected, - resurved in 1955, - See report of 1955 Add'l Wk.)

DISCREPANCIES

Positions 1,3,4,5 & 7* "u" day (blue), were not plotted as these detach-positions on rocks were observed on weak fixes. The other detached positions on rocks in this area should be carefully verified as several were in slight disagreement with the air-photo compilation locations.* (Air photo positions adequate and were used)

Positions 61 thru 65 "v" day (blue), were not smooth plotted. The time and course was erratic and soundings did not agree with surrounding hydrography. (Not used, - adequately developed by later hydrography)

Position 16 "y", a detached position of a sounding, and 18"aa", a detached position on a reef, were not smooth plotted as no angles were recorded on the fixes. 16"y" shoal adequately developed by 6 ft. 47-48 ℓ (φ 43°05.04' λ 70°43.73') pos. 18"aa" transferred from boat sheet

See note in volume 12, position 12 "aa" blue, concerning cable crossing. (correctly shown on smooth sheet)

Respectfully submitted,

Hugh L. Proffitt
Cartographer

Norfolk, Va.
29 March 1955

Wash. Office

SUPPLEMENT TO DESCRIPTIVE REPORT

(Field Party Notes from Boat Sheet)

HYDROGRAPHIC SHEET ECFP-05153(H-8090)

Maine - New Hampshire

Portsmouth Harbor

1954

Chief of Party - Clarence R. Reed

Form 537
(Ed. June 1946)

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET (AMENDED 1954)

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-8090

Field No. ECFP-05153

State Maine - New Hampshire

General locality Portsmouth, New Hampshire

Locality Portsmouth Harbor

Scale 1:5,000 Date of survey 6/18 - 9/17/53, 8/18 - 11/2/54

Instructions dated 6 March 1953 - Supplemental Insts. dated 29 Jan. 1954 and letter dated 2 April 1954(Sub: Additional Field Work in Areas Surveyed in 1953)

Vessel East Coast Field Party

Chief of party Clarence R. Reed

Surveyed by R. B. Noble & C. E. Horne

Soundings taken by ~~echometer~~, graphic recorder, hand lead, ~~wire~~ sounding pole

Fathograms scaled by Party personnel

Fathograms checked by R. B. Noble & C. E. Horne

Protracted by

Soundings penciled by

Soundings in ~~fathoms~~ feet at MLW ~~XXXXX~~

REMARKS:

Previous hydrography on this sheet executed in the summer of 1953. Completed in 1954
Also add'l work in 1955

U. S. GOVERNMENT PRINTING OFFICE 16—66520-1

NOTES FOR SUPPLEMENTAL DESCRIPTIVE REPORT
TO ACCOMPANY

Hydrographic Sheet H-8090, (Field No. ECFP 05153)

Portsmouth Harbor, New Hampshire

EAST COAST FIELD PARTY CLARENCE R. REED, CHIEF OF PARTY

PROJECT CS-355 1953 & 1954 SCALE: 1:5,000

* * * * * * * * * * * * *

PROJECT This survey was accomplished under instructions dated 6 March 1953, supplemental instructions dated 29 January 1954, and a letter dated 2 April 1954 (Subject: Additional Field Work in Areas Surveyed in 1953)

VESSELS AND EQUIPMENT The supplemental field work done on this sheet in 1954 was completed using launch CS-82 and a Catamaran. The catamaran consisted of two aluminum skiffs (one 16' the other 14') held rigidly parallel to one another approximately 1½' apart by bolts to two 2"X 6" planks and a 2"X 4" which were laid across the skiffs.

Echo soundings in launch CS-82 were obtained with graphic recorder No. 77 with the transducers mounted inboard. Graphic recorder No. 77 was also used in the catamaran. For the catamaran, the transducers were mounted in a fish which was secured between the skiffs.

TIDES AND CURRENTS The tide note is attached to this report for the Gerrish Island Wharf tide gage. Tides were furnished by Washington for the standard gage at the Portsmouth Naval Yard, and for other tides not covered by the standard gage or the Gerrish Island gage while it was in operation.

CONTROL STATIONS Control stations established in 1953 were recovered and used to control hydrography in 1954.

COMPARISON WITH CHART 5' Positions 1a & 2a Vol. 2 (Catamaran) define a shoal which bares 8' at MLW. This shoal, Lat. 43° 04.35' Long. 70° 44.68' seems to be an extension of the point on Pierces Island at signal "LAG".

At the west end of the new bridge from Frame Pt. to Marvin Island the fill for the abutment has been extended approximately 50 meters further into the channel. The NE corner of the fill is located by pos. 7a Vol. 2 (catamaran). The location of this fill is Lat. 43° 04.25' Long. 70° 44.68'. (shown on smooth sheet & charted)

Chart 329 shows a small structure of some sort on the north side of the bridge from Frame Pt. to Marvin Island, near the middle of the bridge, Lat. 43° 04.26' Long. 70° 43.63'. The bridge was rebuilt in 1953-1954 and there is no such structure on the new bridge.

Respectfully submitted
Charles E Horne
Charles E. Horne
ENS. USC&GS

Approved and forwarded
Clarence R. Reed
Chief of Party Clarence R. Reed

SUPPLEMENTAL FATHOMETER CORRECTIONS

The corrections listed below are based on an initial set at zero on the fathogram. Where the initial varies from zero on the fathogram, index corrections must be entered in the sounding volumes.

FATHOMETER NO. 77

3 September - 9 September 1954

CATAMARAN

CORRECTION	DEPTH	
A RANGE	From	To
+1.0	0.0	3.8
+0.8	3.9	8.4
+0.6	8.5	24.0
+0.4	24.2	Limit of A Range
B RANGE		
+1.2	35.0	70

No abstract of corrections furnished for Fatho 77 used in launch 82 and in the skiff.

SUPPLEMENTAL STATISTICS TO ACCOMPANY

Hydrographic Sheet H-8090 (Field No. ECFP 05153

DATE 1954	DAY LTR	VOL. NO.	LEAD LINES	NO. OF POSITIONS	STAT. MI. SDG.
		LAUNCH CS-82			
18 Aug.	a	13	0	58	4.1
19 "	b	13	2	47	1.5
		TOTALS	2	105	5.6
		CATAMARAN			
3 Sept.	a	14	0	62	4.8
7 "	b	14	0	29	1.9
9 "	c	14	0	6	0.7
		TOTALS	0	97	XXX
2 Nov	a	14 (Skiff)	0	29	188
5 Nov.	b	14	0	3	0.0
TOTAL 1954 SEASON				234	14.8

Area Surveyed: Uncertain
(Sounding consisted of development and splits on work done previously)

Skiff fathometer?

SUPPLEMENTAL TIDE NOTE TO ACCOMPANY

Hydrographic Sheet H-8090 (Field No. ECFP 05153)

A portable automatic tide gage was maintained at the Gerrish Island Wharf until it was washed out by hurricane "Carol", 31 August 1954, it was not replaced. The plane of reference was computed from elevations of previous tidal bench marks. Other tides required for the work on this sheet were furnished by the Washington Office.

STATION	LATITUDE	LONGITUDE	MLW ON STAFF
Gerrish Island Wharf	43° 03.98	70° 41.77'	2.7

APPROVAL SHEET FOR ADDITIONAL WORK

IN 1954 on HYDROGRAPHIC SURVEY H-8090

The 1954 records and boat sheet for Hydrographic Survey H-8090 (ECFP-05153) have also been inspected by me and are approved.

One day of skiff work, not mentioned in the body of the report, was done on 2 November 1954. On this day the skiff (14 foot aluminum) was used singly rather than rig a catamaran. The units were placed in the bottom of the skiff in a little bilge water and an excellent record was obtained on the 808 depth recorder.

Clarence R. Reed

Clarence R. Reed
CDR,USC&GS
OinC,East Coast Field Party

Add'l Work
1955

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

East Coast Field Party
General Delivery
Kennebunkport, Maine

POST-OFFICE ADDRESS:

TELEGRAPH ADDRESS:

EXPRESS ADDRESS:

28 June 1955

To: The DIRECTOR
U.S. Coast & Geodetic Survey
Dept. of Commerce Bldg.
Washington 25, D.C.

Subject: Project CS-355 - Records and Boat Sheets H-8090

The records and boat sheets for the resurvey of hydrographic survey H-8090 have been inspected, approved, and are being forwarded this date.

Your attention is invited to the fact the time shown in the hydrographic records is 60th meridian.

Marvin T. Paulson

Marvin T. Paulson
LCDR., USC&GS
OinC, East Coast Field Party

7bb

Re-SURVEY

PROJECT CS-355

Appendix to Hydrographic Descriptive Report
ECFP-05153 H-8090

Portsmouth Harbor, Portsmouth, New Hampshire

* * * * * * * * * * * *

Resurveyed - 1955
by

EAST COAST FIELD PARTY MARVIN T. PAULSON, CHIEF OF PARTY

The resurvey of that portion of Portsmouth Harbor as indicated on the bromide copy of smooth sheet H-8090 was accomplished under the following instructions:

Supplemental Instructions - Project CS-355
Letter Reference: 22/MEK FP-East Coast, dated 4 May 1955
Addressed to: OinC, East Coast Field Party

On sheet H-8090 the area surveyed in 1953 on b-day was resurveyed on 6 and 7 June 1955 making a satisfactory junction with the 1953 hydrography. Resurveyed area lies generally between Hick Rks. & Fort Pt. (a & b days, purple)

Launch No. CS-82 was used with an 808 type graphic recorder No. 121-S sounding apparatus having transducer units mounted inboard aft of the engine. Excessive engine vibration coupled with a worn phasing head produced a ragged initial trace. The worn phasing head caused the initial to change as much as 1 foot when shifted from B-range to A-range. This difference was pro-rated over the interval of time between switching from and returning to A-range. This jump in initial trace could, and probably does, occur at the time of return to A-range. A new phasing head was ordered immediately after observing these results.

A velocity correction curve was drawn from the bar check results and was extrapolated from 42 feet. Two bar checks were taken. The latter check was rejected as the current lifted the plate giving erroneous results. The corrections were tabulated from the curve and entered in the sounding volumes. The velocity curve is included ~~in a separate folder w/this report~~. *filed w/fgms

All soundings were inked on the boat sheet using the predicted tides for Portland, Maine referenced to Kittery Point, Maine. After all soundings were entered on the boat sheet it was noted that Eastern Standard Time was used for tide corrections while all soundings were taken on Daylight Saving Time.

Three vertical castswere made over the area and were in agreement with fathometer soundings.

Four crosslines, equally spaced over the area, were run with satisfactory agreement at crossings.

In latitude 43°-04'.95, longitude 70°-43'.15 there is a dolphin of two piles and also a single pile. These are located and described in sounding volume 15page 18. pos.2a, 3a (charted)

In latitude 43°-04'.90, longitude 70°-43'.15 there is a wreck in ruins. This is located and described in sounding volume 15page 18. (charted)

In latitude 43°-04'.88, longitude 70°-43'.15 there is a keel, of an old schooner, in ruins. This is located and described in sounding volumes 15page 18 and ~~8~~ 16 page 10. (charted)

In latitude 43°-04'.80, longitude 70°-43'.10 there is a foul area. This is located and described in sounding volume 15pages 55, 56 and 57. (charted as ledge)

There is no additional Coast Pilot information, landmarks for charts, or new geographic names.

Respectfully submitted,

Clifford W. Tupper

Clifford W. Tupper
ENS., USC&GS

Approved and forwarded (with attached letter)

Marvin T. Paulson
LCDR., USC&GS
OinC, East Coast Field Party

LIST OF SIGNALS

Hydrographic Sheet H-8090 (FIELD NO. ECFP 05153)

BACK——Whaleback Lighthouse, 1878
BUS——T-11168
CAT——T-11168
CUP——T-11168
DEN——T-11168
FAR——Ph-Aa-53
GIN——T-11168
HIM——T-11168
HOW——T-11168
LEO——T-11168
OAK——T-11168
ODD——T-11168
PIPE——Camp Langdon Standpipe, 1941
POINT——Portsmouth Harbor Lighthouse, 1878
RAM——T-11168
RED——Ph-Aa-53
RUM——T-11168
SUE——Ph-Aa-53
TALL——Portsmouth Navy Yard, Prison Tall Black Chimney, 1908
TOM——T-11168
WOOD——Wood Island C.G. Cupola, 1878

GEOGRAPHIC NAMES

Survey No. H-8090

P. 1 of 2

Name on Survey	A On Chart No.	B On previous survey No.	C On U. S. quadrangle Maps	D From local information	E On local Maps	F P. O. Guide or Map	G Rand McNally Atlas	H U. S. Light List	K	
Back Channel ✓										1
Badgers Island ✓										2
Blunts Island ✓										3
Chauncey Creek ✓										4
Clampit Island ✓										5
Clark Island ✓										6
Fishing Island ✓										7
Fort Point ✓										8
Fourtree Island										9
Frame Point ✓										10
Frost Point ✓ Gerrish Island ✓										11
Goat Island ✓										12
Goat Island Ledge										13
Goose Island										14
Gooseberry Island ✓										15
Henderson Point ✓ Hick Rocks ✓										16
Jaffrey Point ✓										17
Jamaica Island ✓										18
Kittery ✓										19
Leachs Island ✓										20
Little Harbor										21
Little Island										22
Marvin Island ✓								BGN		23
New Castle Island ✓ Nobles Island ✓								BGN		24
Pest Island ✓										25
Pepperrell Cove ✓								BGN		26
Pierces Island ✓										27

M 234

GEOGRAPHIC NAMES

Survey No. H-8090

p. 2 of 2

Name on Survey	A On Chart No.	B On previous survey No.	C On U.S. quadrangle Maps	D From local information	E On local Maps	F P.O. Guide or Map	G Rand McNally Atlas	H U.S. Light List	K	
Piscataqua River ✓										1
Portsmouth ✓										2
Sagamore Creek ✓										3
Salamander Point ✓										4
Salters Island ✓										5
Seavey Island ✓										6
Spruce Creek										7
Squash Island										8
South Beacon Shoal										9
Sullivan Point										10
Wood Island ✓										11
STIELMAN RKS ✓										12
Cod Rock					Names approved					13
Seward Rocks							4-25-55			14
South Beacon Shoal								a.j.w.		15
										16
										17
										18
										19
										20
										21
										22
										23
										24
										25
										26
										27
										M 234

Hydrographic Surveys (Chart Division)

HYDROGRAPHIC SURVEY NO. 8020.....

Records accompanying survey:

Boat sheets ~~1~~ 2...; sounding vols. ~~11~~ 16...; wire drag vols. .....;

bomb vols. .....; graphic recorder rolls ~~13~~ 14 env.;

special reports, etc 1 ~~Smooth Sheet~~, 1 Descriptive Report.....

.....

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

Number of positions on sheet		2,966
Number of positions checked		605
Number of positions revised		252 *
Number of soundings revised (refers to depth only)		40
Number of soundings erroneously spaced		120
Number of signals erroneously plotted or transferred		3 *
Topographic details	Time	80 *
Junctions	Time	8
Verification of soundings from graphic record	Time	30

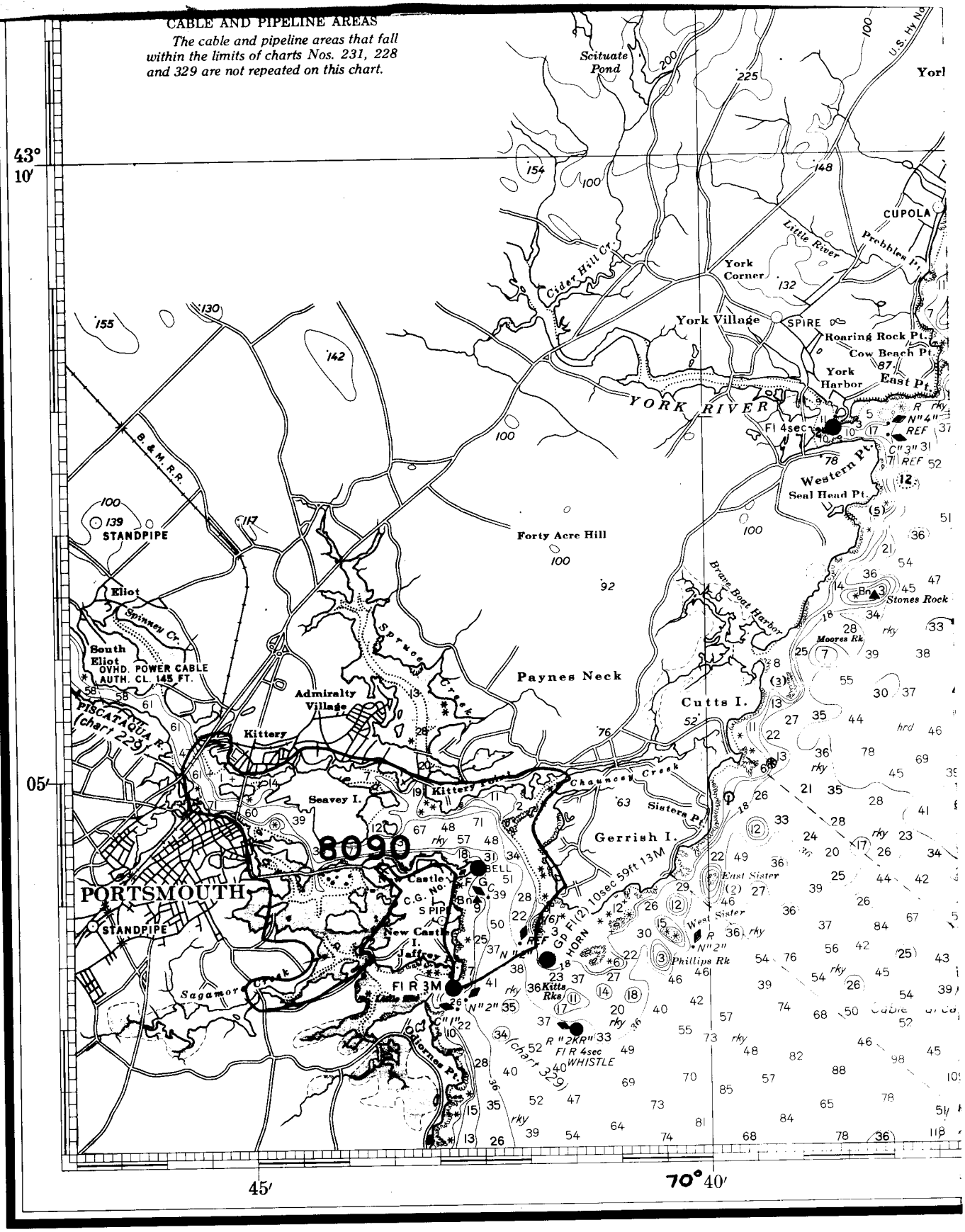
Verification by Chester F. Kupiec Total time 508* Date 9-10-56

Reviewed by J.A. Dinsmore Time 56 Date 15 Oct. 1956

Scanned fathograms & applied reducers in volumes – 11 hrs – Sandbery.
Plotting ..... 8 hrs. – L. Gearhart – 9.16.55
Checking reduction of sndgs, plotting ..... 39 hrs – Kupiec 9/9/55–9/20/55
Processing 1955 additional work.

* caused by weak photogrammetric control

M-2232-1



50-6/19; 51-3/5; 52-7/28; 54-10/11

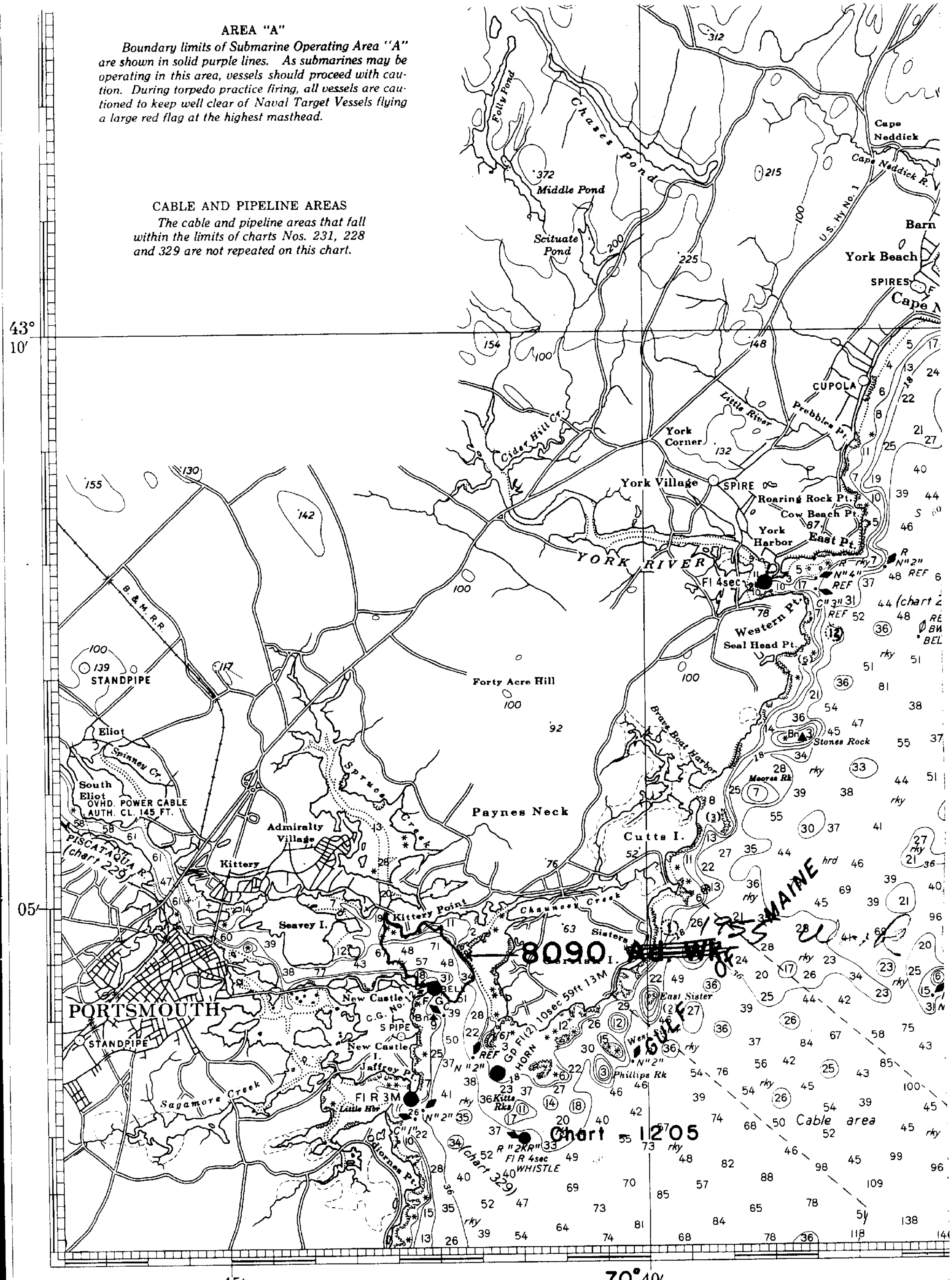
1205 PRICE $1.00

AREA "A"

Boundary limits of Submarine Operating Area "A" are shown in solid purple lines. As submarines may be operating in this area, vessels should proceed with caution. During torpedo practice firing, all vessels are cautioned to keep well clear of Naval Target Vessels flying a large red flag at the highest masthead.

CABLE AND PIPELINE AREAS

The cable and pipeline areas that fall within the limits of charts Nos. 231, 228 and 329 are not repeated on this chart.



R&C

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. Apr. 1950

TIDE NOTE FOR HYDROGRAPHIC SHEET

Division of Coastal Surveys: 27 April 1955

Division of Charts: R. H. Carstens

Plane of reference approved in
14 volumes of sounding records for

HYDROGRAPHIC SHEET 8090

Locality Portsmouth Harbor, N. H.

Chief of Party: C. R. Reed in 1953 - 1954
Plane of reference is mean low water, reading
2.2 ft. on tide staff at Portsmouth Navy Yard
24.0 ft. below B. M. 5 (1928)

4.5 ft. on tide staff at Atlantic Heights
31.2 ft. below B.M. 1 (1919)
2.7 ft. on tide staff at Fort Point
12.3 ft. below B.M. 3 (1919)
1.8 ft. on tide staff at Jaffrey Point
20.0 ft. below B. M. 1 (1919)
2.8 ft. on tide staff at Gerrish Island Wharf
18.4 ft. below B.M. 2 (1926)

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

Portsmouth:	8.1 ft.
Atlantic Heights:	7.5 ft.
Fort Point:	8.6 ft.
Jaffrey Point:	8.7 ft.
Gerrish Island Wharf:	8.7 ft.

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

E. C. McKay
Tides Branch
Chief, Division of Tides and Currents.

Volume	Position
8	85r - 111 r
9	46t - 61 t
14	1b - 29 b

U. S. GOVERNMENT PRINTING OFFICE 877983

RH C

Form 712
DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY
Rev. June 1937

TIDE NOTE FOR HYDROGRAPHIC SHEET

~~Division of Hydrography and Topography~~ 7 September 1955

Division of Charts: R. H, Carstens

Plane of reference approved in
2 volumes of sounding records for

HYDROGRAPHIC SHEET 8090

Locality Portsmouth Harbor, N. H.

Chief of Party: M. T. Paulson
Plane of reference is mean low water, reading
2.2 ft. on tide staff at Portsmouth Navy Yard
24.0 ft. below B. M. 5 (1928)

Height of mean high water above plane of reference at the working grounds is 8.7 feet.

Condition of records satisfactory except as noted below:

NOTE: Tide reducers entered and verified in the Washington Office. Reducers were obtained by using a ratio of range correction of 1.1 at the working grounds.

William Shofus

ad'g. Chief, ~~Division of Tides and Currents.~~
Tides Branch

U. S. GOVERNMENT PRINTING OFFICE 756675

DIVISION OF CHARTS

REVIEW SECTION - NAUTICAL CHART BRANCH

REVIEW OF HYDROGRAPHIC SURVEY

REGISTRY NO. H-8090 FIELD NO. ECFP-05153

New Hampshire, Portsmouth, Portsmouth Harbor

Project No. CS-355

Surveyed - June 1953 - June 1955 Scale 1:5,000

Soundings: Control:

808 Fathometer
Hand lead
Pole

Sextant fixes on shore signals

Chief of Party - C. R. Reed and M. T. Paulson
Surveyed by - R. B. Noble, C. E. Horne and C. W. Tupper
Protracted by - A. K. Schugeld
Soundings plotted by - A. K. Schugeld
Verified and inked by - C. F. Kupiec
Reviewed by - T. A. Dinsmore 15 October 1956
Inspected by - R. H. Carstens

1. Shoreline and Signals

The shoreline originates principally with an advance copy of unreviewed air-photographic survey T-11168 (1952). Some shoreline together with revisions in shoreline, ledge symbolization and additional rocks were added from correction overlays (reviewed) of air-photographic surveys T-11143 and T-11144 (1952).

The origin of the signals is given in the Descriptive Report. Attention is directed to paragraph 7 of this review, wherein weakness of the photogrammetric control is discussed.

2. Sounding Line Crossings

Depths at crossings are in good agreement considering the irregularities in the bottom

3. Depth Curves and Bottom Configuration

The usual depth curves are adequately delineated. Air-photographs were utilized to aid in delineating small boat channels in some mud flat areas.

Protruding ledge and offlying rocky shoals fringe much of the deep-water area and contribute to the irregularities in the bottom. Conspicuous shoals too numerous to specifically identify are apparent on the survey smooth sheet. Except for the mud-flat areas, the bottom is generally irregular. Depths along the axis of the natural channel of the Piscataqua River range from 36 to 80 ft.

4. Junctions with Contemporary Surveys

Adequate junctions were effected with H-7795 (1950) on the south. The junctions with H-8092 (1953-54) on the north, east, south and west will be considered in the review of that survey.

5. Comparison with Prior Surveys

a. H-2360 (1898) and H-2656 (1903) 1:10,000

These prior surveys, taken together cover the area of the present survey. A comparison of the prior and present surveys reveals radical changes in the extent and shape of Seavey Island. These changes are the result of the filling-in of adjacent shoal areas, dredging of berthing areas and extensive harbor improvements generally. Except for the artificial causes, no important changes in bottom are noted elsewhere throughout the surveyed area. However, the closer development on the large-scale present survey reveals much critical information not disclosed by the sparse development on the smaller-scale prior surveys.

The following discrepancies are specifically noted:

(1) The 2-ft. sounding charted in lat. 43°04.99', long. 70°45.41', from H-2656 should be disregarded. Falling in present depths of 8 ft., the prior sounding is probably 1 fm. in error. Present development is adequate to discredit the prior sounding.

(2) The 18-ft. sounding charted in lat. 43°04.81', long. 70°44.96', from H-2656 falls in present depths of 25 - 30 ft. The present survey together with recent Navy surveys indicate this area has been dredged. The 18 should be disregarded.

(3) The 25.ft. sounding charted in lat. 43°04.72', long. 70°45.05', from H-2656 should be disregarded. Falling in present depths of about 40 ft. on a steep slope, the prior sounding is considered to be out of position and should actually fall about 40 meters southwestward where comparable depths were obtained on the present survey.

(4) The 43-ft. sounding charted in lat. 43°04.48', long. 70°43.44', from H-2656 should be disregarded. This unsupported sounding falling in depths of 58 - 60 ft. on both the prior and present surveys is considered to be erroneous. The present development adequately discredits the prior sounding.

In areas of unchangeable bottom, several bottom characteristics have been retained from the prior surveys. With these additions, the present survey is adequate to supersede the prior surveys within the common area.

b. H-3976 W.D. (1917) 1:10,000

Present depths are in harmony with the effective wire-drag depths in the common area. Three soundings (charted) have been retained from the wire-drag survey to supplement present survey coverage in the entrance area.

6. Comparison with Chart 329 (latest print date 11/14/55)

A. Hydrography

Charted hydrography originates principally with the previously discussed surveys which need no further consideration. Supplementary information has been added to the chart from U. S. Navy surveys, various chart letters and partial application of the present survey prior to verification and review. Numerous revisions of 1 - 2 ft. have been made to smooth-sheet soundings during verification.

The following discrepancies are noted:

(1) The rock awash charted in lat. 43°04.48', long. 70°44.49', from an advance print of T-8532 (1943) should be disregarded. A thorough search of the locality on the present survey failed to reveal any indication of a rock. T-8532 does not now show the rock. The rock awash charted 100 meters northwestward of the above position, also originating with an advance print of T-8532, was determined on the present survey to be actually the north tip of a ledge making out from Pierces Island.

(2) The 9-ft. sounding charted in lat. 43°04.59', long. 70°43.65', originates with advance information of the present survey shown on blueprint 51181 (copy of the boat sheet). The smooth-sheet depth at the above position is now determined to be 11 ft.

(3) The 12-ft. sounding charted in lat. 43°04.77', long. 70°42.53', from the present survey before verification should be disregarded. The 12 was found to be erroneously scanned from the fathogram or recorded in error and was revised during verification to 15 ft.

(4) The 34-ft. sounding charted in lat. 43°04.33', long. 70°42.17', originates with an advance report (C. L. 203, 1917) of a hang on H-3976 W.D. (1917). The wire-drag survey in its final plotting shows only a 37-ft. tender sounding about 50 meters south. The present survey shows a 35-ft. sounding about 15 meters southeast of the above position. The present survey depth is considered adequate for charting and it is recommended that the doubtful 34-ft. sounding (hang) be disregarded.

(5) The hydrographer states in the Descriptive Report of the 1954 work that the bridge connecting Frame Point and Marvin Island was rebuilt in 1953-54 and the structure presently charted on the north side of the bridge no longer exists.

The compilers attention is directed to paragraph 7c, of this review. Because of the revised positions of signals See, Far and Sue during verification, some shoal soundings, rocks and detached positions of fixed objects may have to be slightly altered in position on large-scale chart 329.

The present survey supersedes the charted information.

B. Aids to Navigation

The marker located in lat. 43°05.04', long. 70°43.73', on the present survey is not charted. *charted on new inset of 211 -4/*

The buoys charted in lat. 43°04.41', long. 70°43.96', and lat. 43°03.66', long. 70°42.10', are located 80 meters westward and 60 meters southwestward, respectively, on the present survey. The charted positions appear to adequately serve the purpose intended.

The buoy charted in lat. 43°04.74', long. 70°43.32', is located 65 meters northeastward on the present survey. The survey position preferably serves the purpose intended.

Except as noted, the aids to navigation located on the present survey are in substantial agreement with the charted aids and adequately mark the features intended.

7. Condition of Survey

a. The sounding records are complete; the Descriptive Report covers most matters of importance.

b. The smooth plotting was generally accurate. The cause for revising 250 positions during verification is discussed in the following paragraph.

c. The verification time on this survey was appreciably increased because of the weak photo-hydro control. Numerous conflicts between the photogrammetric location and the hydrographic location of identical features indicated a weakness in the positioning of the photo-hydro stations. Positioning differences amounting to 4 millimeters on the smooth sheet revealed that three signals were erroneously positioned relative to other details by about two millimeters. These signals located by a photogrammetrist in the field were repositioned by the verifier by combining the photogrammetric, the hydrographic, and planetable cuts. Although hydrography dependent on other signals appeared weak also, only a minimum number of revisions were made. The weakness of the photogrammetric control is not discussed by the field party as requested in the Project Instructions. It is considered that the photogrammetric control of the type used on T-11168 is not adequate for the control of large-scale hydrographic surveys. Graphic control location of all signals on 1:5,000 scales, as subsequently required in the area northward of this survey would probably have provided more accurate location of the signals. The weakness in the positioning of the photo-hydro signals is attributable to the excessive enlargement of the basic photographic material. T-11168 originates with 1:20,000 single-lens photographs enlarged to 1:5,000 and is dependent on control identification of 1943 on 1:20,000 photographs. The photo-hydro signals were located by radial plot and planetable sheets dependent on photogrammetric points.

d. The sounding volumes for the area resurveyed in 1955 ("a" and "b" days, purple) were processed, protracted and plotted in the Washington Office. This work which replaced rejected "b" day's work of 1953 lies generally between Hicks Rocks and Fort Point and junctions satisfactorily with the 1953 hydrography. Instructions for the resurvey were issued when smooth plotting of the original work revealed crossing discrepancies of 2 - 4 ft. which could not be resolved.

8. Compliance with Project Instructions

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

9. Additional Field Work

With the retention of several soundings from the prior surveys, the present survey is considered basic for the area covered and no additional field work is required.

Examined and Approved:

Max G. Ricketts
Chief, Nautical Chart Branch

Charles A. Schanck
Chief, Chart Division

Karl B. Jeffers
Chief, Hydrography Branch

Samuel B. Grenell
Chief, Division of Coastal Surveys

8090- Ad. Wk.

NAUTICAL CHARTS BRANCH

SURVEY NO. 8090 Add'l. Work June 6-7, 1955

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
9-6-55	329	R. K. de Lawder	Partially applied Before ~~After~~ Verification and Review three boat sheet
			Only dolo, piles & wreck added per instr. from G.H.S.
4-10-56	1205	F. M. Albert	Examined for dangers. Nothing added. Before ~~After~~ Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review
			Before After Verification and Review

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.

NAUTICAL CHARTS BRANCH

SURVEY NO. H-8090

Record of Application to Charts

DATE	CHART	CARTOGRAPHER	REMARKS
16 May 55	1206	[illegible]	Before ~~After~~ Verification and Review Partial Application
8/3/55	329	Walker & DeLaunder	Before ~~After~~ Verification and Review Partially
4-10-56	1205	J.M. Albert	Before ~~After~~ Verification and Review Via 1206 dwg #12
4 June 57	212	H.E. MacEwen	~~Before~~ After Verification and Review
6/12/57	229	HEM - JPW	~~Before~~ After Verification and Review Partially
9/9/57	211	H.E. MacEwen	~~Before~~ After Verification and Review
6-21-59	1205 dwg 14	R.K. DeLaunder	~~Before~~ After Verification and Review thru Ch 211
5/15/61	211 Inset	CHelmer	~~Before~~ After Verification and Review Applied to new 1/10,000 inset
10-11-61	1106	R.E. Elkins	~~Before~~ After Verification and Review Fully applied thru chart 1106 dwg #14.
5-3-62	~~1206~~ ↑Not	O. Svendsen applied at this	~~Before~~ After Verification and Review No corr. time REE 11-2-62
4-23-64	1206	H. Radden	After V & R App'd thru Cht. 211
5-9-64	1205	H. Radden	After V&R app'd thru Chts. 1206 & 211 to make agree

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.