9012

Diag. Cht. No. 1207-2

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. PE-5-2-68

Office No. H-9012

LOCALITY

State MASSACHUSETTS

General Locality SOUTHWEST OF CAPE ANN

Locality MARBLEHEAD HARBOR AND APPROACHES

1968

CHIEF OF PARTY

C.K. Townsend, J.A. Yeager

LIBRARY & ARCHIVES

DATE December 16, 1974

☆ U.S. GOV. PRINTING OFFICE: 1975—668-353

9012

9012

original

Diag. Cht. No. 1207-2.

FORM C&GS-504

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. PE-5-2-68 Office No. H-9012

LOCALITY

State Massachusetts

General locality ~~locality~~ Southwest of Cape Ann

Locality Marblehead Harbor and Approaches

19 68

CHIEF OF PARTY

LCDR J. Austin Yeager

LIBRARY & ARCHIVES

DATE 12-16-74

USCOMM-DC 87022-P66

Chart
241
240
1207
1106

9012

FORM C&GS-537 (6-16-59)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

REGISTER NO.

H-9012

HYDROGRAPHIC TITLE SHEET

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

FIELD NO.

PE-5-2-68

State: Massachusetts

General locality: Southwest of Cape Ann

Locality: Marblehead Harbor and ~~Vicinity~~ Approaches

Scale: 1:5,000 Date of survey: April-August, 1968

Instructions dated: 26 March, 1968 Project No.: OPR 473

Vessel: Launches and Skiffs of USC&GSS PEIRCE

Chief of party: LCDR C. K. Townsend / LCDR J. Austin Yeager

Surveyed by: LT ASKEW, LT SHEAHAN, LTJG OLACK, ENS P.A. SIGLEY, ENS P.L. MOSTUE

Soundings taken by echo sounder, hand lead, pole: Echo Sounder, Hand Lead and Pole

Graphic record scaled by: Ship Personnel

Graphic record checked by: Ship Personnel

Protracted by: ~~Ship Personnel~~ Automated Plot by PMC - Gerber Digital Plotter

Soundings penciled by: ~~Ship Personnel~~ verified by H.R. Smith (AMC)

Soundings in ~~fathoms~~ feet at MLW ~~MLLW~~: Feet at MLW

REMARKS: Amended Project Instructions dated 26 March, 1968, superseded all previous instructions.

This survey is complete.

Applied to chts 1/29/75 CB

USCOMM-DC 6272-P62

DESCRIPTIVE REPORT

TO ACCOMPANY

HYDROGRAPHIC SURVEY PE 05-02-68

1968 FIELD SEASON

USC&GSS PEIRCE	SCALE 1:5,000
CHARLES K. TOWNSEND, LCDR USESSA	CHIEF OF PARTY
J. AUSTIN YEAGER, LCDR USESSA	CHIEF OF PARTY

A. PROJECT

This survey was accomplished under Project OPR-473, Cape Ann to Cape Cod, Massachusetts. Amended Instructions dated March 26, 1968 supercede all previous instructions.

B. AREA SURVEYED

The area of this survey is enclosed by the following boundaries: On the north by latitude 42° 31' 30"; on the east by a line extending from the point of latitude 42° 31' 30", longitude 70° 42' 20" to the point of latitude 42° 29' 20", longitude 70° 48' 15" W; on the south by latitude 42° 29' 20" N; on the west by the shores of Marblehead Neck and Marblehead; on the northwest corner by longitude 70° 51' 15" W.

Hydrography was extended inshore to the low water line. Junctions with other surveys include Contemporary Survey PE 05-3-68(H-9010) on the northwest corner, Contemporary Survey PE 05-4-68, (9846) currently incomplete) on the north, and H-9094 on the east and south

Hydrography commenced in this area on April 24, 1968 and was completed on August 28, 1968.

C. SOUNDING VESSEL

Hydrography in this survey was performed by launch and skiff. Position numbers from launch PE-1 work were denoted by blue colored position numbers. Work from launch PE-2 was denoted by red colored position numbers. All skiff work was denoted with green inked position numbers.

D. SOUNDING EQUIPMENT

Two Raytheon, type 723, fathometers were used in this survey. Launch PE-1 used fathometer number 242 and launch PE-2 used fathometer number 260. Echo soundings were taken in depths of down to 98 feet. A 16 foot sounding pole or leadline was used for shallow water skiff work.

Settlement and Squat correctors were determined previously and a constant value of -0.1 of a foot was used. This value and its explanation is given in Appendix D.

Bar checks were taken as often as weather permitted. The results were tabulated in groups according to vessel and time of year. Explanation of this procedure is given in Appendix B. A mean fathometer error for each depth was calculated ommiting bar checks which varied greatly from the mean. These results were placed in tables and placed in Appendix B. Values for these tables were in 0.2 foot increments as according to the Hydrography Manual.

The initial on the fathograms was held at 2.0 feet for this survey. Exceptions to this are supplied in Appendix D. Also included in the initial is a reduction of one foot from the actual transducer draft (three feet) as per memorandum from the Chief, Instrument Division dated October 1, 1962.
Bar checks will reflect corrections for draft settings

Any draft correction because of fuel consumption is negligible as explained in Appendix D.

It was found that there was phase correction necessary on both fathometers during this survey when changing from scale A to B. Fathometer 242 (launch PE-1) required a phase correction of -0.7 feet until day 156. Starting with day 156, there is a phase correction of -0.3 foot when switching from A to B scale. Repairs to the fathometer probably caused the phase correction difference on the same fathometer. Fathometer 260 (launch PE-2) required a phase correction of -0.6 foot when switching from A to B scale.

E. SMOOTH SHEET

The smooth sheet will be plotted automatically at the Pacific Marine Center, Seattle, Washington by the Gerber Plotter. Field records were encoded on punched tapes designed for computer use. Two tapes were made from the field records - a "position" tape providing position information obtained from three-point visual fixes, and a "sounding" tape providing depths and data required to reduce these depths to final, correct values. The two tapes will be intergrated with corrector tapes by the computer to provide data for the Gerber Plotter.

F. CONTROL

Visual control was used for the entire survey. Three-point sextant fixes were utilized on triangulation and photogrammetric points, and the fixes were plotted by three-arm protractor.

Photogrammetric signals were located from compilations furnished in accordance with instructions (Job PH-6601, Shoreline Mapping) contained in letters from the Chief, Photogrammetry Division to the Project Planning Staff Officer, Hydrography and Oceanography on April 28, 1966, July 11, 1966, February 23, 1968 and March 5, 1968.

The following photogrammetric compilations were used:

Incomplete Manuscript T-12976, compiled September 1967
Incomplete Manuscript T-12977, compiled August 1967

G. SHORELINE

Shoreline was transferred to the boat sheet from blue line manuscripts of the photogrammetric compilations listed in section F.

The high water line was inspected and verified by the hydrographer. The low water line was determined by taking the survey vessels as close to shore as possible during times of calm sea and high water. The low water line was also determined by walking shoal areas at low water. No changes in the low water line were significant.

H. CROSSLINES

Crosslines were run at 5.3% of the total mileage of sounding lines. Crossings were in good agreement. Inspection was made of some soundings that on the surface looked like there was possibly some disagreement, and it was always found that the difference was in the extremely rough bottom that this survey covers.

I. JUNCTIONS

The only junctions with recent surveys for this survey are with Contemporary Surveys PE 05-3-68(H-9010) and PE 05-4-68(started in 1968 by the PEIRCE but incomplete). These junctions were good and depth curves showed no discontinuity through the junctions.

J. COMPARISON WITH PRIOR SURVEYS

Pre-Survey Review Items are discussed as follows:

Pre-Survey Review Item #82 - The existance of a tank on Cat Island was verified. The tank is located at latitude 42° 30' 43.2"N, longitude 70° 48' 55.4"W. This tank would be visible from the open sea east and south of the island; the distance at which it could be seen would not exceed 3 miles. There are three buildings on the island which have been recommended on the Field Edit Ozalid #T-12977 as landmark buildings. The tank was not recommended; it should be considered a semi-permanent structure as compared to a building. Building placed on smooth sheet from T-sheet.

Pre-Survey Review Item #83 - Investigation was made on the existance of a privately maintained day beacon located at latitude 42° 30' 42.1"N, longitude 70° 50' 34.9"W. This beacon was verified. It consists of an open metal triangle placed on a ten foot piece of pipe on the south-south west extension of a ledge in the area known as "Little Harbor".

Pre-Survey Review Item #86 - The rock awash was investigated and was found at the following location: latitude 42° 29' 51.53"N, longitude 70° 51' 04.20"W. Investigation was made at low tide in a skiff where the rock was clearly visible. The minimum depth of the rock after predicted tides were applied was ~~2-1/2~~ 3 feet. The area was completely searched for other rocks visually in the skiff and in deeper water with a launch and fathometer.

Listed below are all the questionable soundings found on this survey. Note that all least depths found are soundings after only predicted tides were applied.

K. COMPARISON WITH THE CHARTS

Comparison was made with two charts covering the area of the survey; C&GS 240 and 241. The following remarks are made of this comparison. (Note: depths have been corrected with predicted tides only).

CHARTS 240 and 241

Seven foot sounding at Pitman Rock was investigated for one hour. The least corrected depth found was ~~6~~ 6 feet (pos. #8106), at latitude 42° 31'15"N, longitude 70° 50' 48"W.

The "rock awash" at Inner Endeavors was investigated for 1/4 hour and the least corrected depth found was ~~2~~ 6 feet (pos. #6580), at latitude 42° 31' 16.8"N, longitude 70° 50' 38.~~5~~6"W.

The 5 foot sounding at Outer Endeavors was investigated for 3/4 hour and the least corrected depth found was ~~7-1/2~~ feet at latitude 42° 31' 22"N, longitude 70° 50' 38.6"W.

The largest slip at the public dock in Marblehead, Mass. harbor, latitude 42° 30' 13.5"N, longitude 70° 50' 50.3"W., has been filled in since ~~aerial~~ photography was flown in 1965.

The 23 foot sounding located at latitude 42° 30' 54.6"N, longitude 70° 48' 43"W was investigated and not found. The minimum corrected depth in the area was 35 feet.

The area shown ~~bare~~ at low water, latitude 42° 30' 43"N, longitude 70° 49' 10"W. is actually an island.

Questionable sounding depth	Least depth found	NEW POSITION of least depth found Latitude			Longitude			Remarks (Including length of search and how)
✓11 ft.	9½ ft.	42°	31'	24"	70°	51'	04"	Regular sounding line 9 on chart
✓13	13½	42	31	26.3	70	50	50.5	Regular sounding line 11 found 52.5 m N.E.
✓18	13 7	42	31	27.5	70	50	~~33~~ 25.3	Regular sounding line 7 found 123 m to the East
✓15	7 8	42	31	27	70	49	05	Regular sounding line, much kelp in area 7ft 15m SE.
not indicated on S.S 7	14	42	31	10	70	50	29	Regular sounding line, shoal area indicated investigation on chart 241 by this 7' was not found inconclusive Retain 7 and add 14 as noted on present survey ?
✓8	17	42	31	10	70	50	19.5	Regular sounding line
This should have been a 6ft sounding from H-2197 6	7.8	42	31	10.7	70	49	49	Regular sounding line 7ft sounding good
✓30	26	42	31	06.8 ok	70	48	42.8	Regular sounding line 24 ft sounding approx 10m W of 30
6	~~26~~	42	30	56.6	70	50	33	and 22ft 12 m NW Regular sounding line (30 located 60m to the North)
✓29	26	42	30	50.2	70	48	40.8	20 meter sounding lines
✓14	16½	42	30	45.7	70	50	19.5	1½ hour search including a radial pattern as well as 10-15 meter sounding lines ok
✓18	19	42	30	49.3	70	50	09	Regular sounding line, shoal area evident ok
This is on 1BRK on the prior survey ✓18	21	42	30	45.6	70	50	06	Regular sounding line, shoal area evident 18ft sounding found 17m south west
✓13	11½	~~42~~ 32	30	34.3	70	49	03	Regular sounding line 11 already charted
✓16	~~15~~ 14	42	30	27.5	70	48	47.7	1¼ hour search including a radial pattern as well as 10-15 meter sounding lines Search accepted on word of hydrog.
✓6	7 8	42	29	45.5	70	50	50.5	1 hour search including a radial pattern as well as 10-15 meter sounding lines Search accepted on word of hydrog.
✓9	9 10½	42	30	01	70	50	39	Combined search for 1½ hours using 11ft sounding 18 m NE.
✓10	~~12~~ 13	42	30	02.6	70	50	37.5	10-15 meter sounding lines and 9 RK pbk 16 m SW from H-2200
✱23	24	42	30	45.7	70	50	22	1½ hour search including a radial pattern as well as 10-15 meter sounding lines
✓14	13½	42	30	17.2	70	49	42.2	3/4 hour search including a radial pattern as well as 10-15 meter sounding lines is accepted
✓25 W.D	29	42	30	12.6	70	49	46.4	3/4 hour search including a radial pattern as well as 10-15 meter sounding lines 25 as W.D sounding
✓9 W.D	11	42	30	11	70	49	41	1 hour search including a radial pattern as well as 10-15 meter sounding lines 9 as from W.D
✓39	~~40~~ 41	42	30	02.5	70	49	31	Regular sounding lines found 15 m to the S.E.
✓33	33	42	30	05.5	70	49	06.6	Regular sounding lines
✓35	34	42	30	02.8	70	49	06	Regular sounding lines
✓18	~~18~~ 19½ 20	42	29	22.6	70	50	07.7	Regular sounding lines
✓24	24	42	29	24.2	70	49	50	Regular sounding lines

✱ PSR does not show a 23' questionable sounding at this position

Questionable sounding depth	Least depth found	NEW POSITION of least depth found Latitude			Longitude			Remarks
~~25~~	~~26~~	42	29	22	70	49	44	Regular sounding lines concur
~~24~~	~~25~~	42	29	38.7	70	49	17.5	20 meter sounding lines concur
~~24~~	~~27~~ 18	42	29	40.5	70	49	11.6	20 meter sounding lines concur
~~29~~	~~29~~	42	29	39.3	70	49	05.2	20 meter sounding lines confirms shoal from 2200
~~49~~	~~47~~	42	29	56.3	70	48	22.3	Regular sounding lines 47 confirms existing shoal
~~44~~	~~44~~	42	29	53.3	70	48	21.3	20 meter sounding lines-44 from WD - reconfirmed
~~18~~	~~19~~	42	29	28.4	70	49	34	1 hour search including a radial pattern 18 from WD as well as 10-15 meter sounding lines 19 falls 20m N.W.
~~66~~	~~62~~ 63	42	29	26.2	70	48	27.2	Regular sounding lines concur

The shoal labeled as questionable soundings located on chart 241 at lat. 42° 31' 24", long. 70° 50' 19" exists; ~~however, the depths were different. The following least depths were found (note again that these are soundings after only predicted tides were applied):~~

~~11 feet lat. 42° 31' 26", long. 70° 50' 23.8"~~
~~10 feet lat. 42° 31' 19", long. 70° 50' 24.8"~~
~~12 feet lat. 42° 31' 17", long. 70° 50' 24.0"~~
~~9 feet lat. 42° 31' 19" long. 70° 50' 20.0"~~

Positions at these locations do not agree with the hydrographic data.

The shoal labeled as questionable soundings located on chart 241 at lat. 42° 30' 57", concur long. 70° 48' 50" exists. The least depths (after predicted tides) marking the northeast edge and the southwest edge are respectively:

~~11~~ 12 feet lat. 42°30' 58.4, long. 70° 48' 49.3"
~~13~~ 12 feet lat. 42° 30' 56.3, long. 70° 48' 51.7"

The area shown as "rock awash" at latitude 42° 30' 40"N, longitude 70° 49' 01.5"W. is actually an island. concur

There exists a rock awash at latitude 42° 30' 43"N, longitude 70° 49' 04.6"W. (pos. #6725), having a least corrected depth of 0.5 foot. concur *(3)

There exists a rock awash at latitude 42° 30' 38.8"N, longitude 70° 49' 04"W. (pos. #6724), having a least corrected depth of -0.5 foot. awash MT MLW concur

There exists a rock awash at the eastern edge of a ledge located at latitude 42° 30' 39.8"N, longitude 70° 48' 40.2"W. having a least corrected depth of 0.5 foot. concur plot as *(2)

There exists a rock at latitude 42° 30' 36"N, longitude 70° 48' 51"W (pos. #7834), having a least corrected depth of ~~-3~~ feet. *(4)

A 13 foot sounding was investigated with 20 meter sounding lines and was not found. A least corrected depth of ~~18~~ 18-1/2 feet was found at latitude 42° 29' 46"N, longitude 70° 49' 44"W. in the area. insufficient investigation

A 14 foot sounding was investigaged with 20 meter sounding lines and was not found. A least corrected depth of ~~18~~ 17 feet was located in the area, (latitude 42° 29' 36.5"N, longitude 70° 49' 29.4"W). insufficient investigation

CHART 240

There exists a 45 foot sounding at latitude 42° 29' 28.8"N, longitude 70° 48' 15.5"W. concur

There exists a 6 foot sounding on the ledge off the north part of Satan's Rock at latitude 42° 30' 40.3"N, longitude 70° 48' 05"W. concur

L. ADEQUACY OF SURVEY

This survey is complete and adequate to supercede prior surveys of the area.

M. AIDS TO NAVIGATION

A total of 13 floating aids to navigation were located in the form of buoys. All positions agreed well with charted positions on charts 240 and 241. An abstract of these buoys is contained in Appendix H - Hydrographic Data Located on the Survey.

N. STATISTICS

	No.of Pos.	Naut.Mi. Sdg.Line	Bottom Samples	Area Surveyed Sq. Mi.
Launch PE-1	2799	202.9	10	6.9
Launch PE-2	1209	77.1	60	
Skiff	1070	17.5	41	0.6
Totals	5078	297.5	111	7.5

O. MISCELLANEOUS

The current study proposed in the Project Instructions was performed using Geodyne photo-type current meters. Station #16 was located at latitude 42° 30.6'N, longitude 70° 49.6'W. It was established on August 15, 1968 and taken up on September 3, 1968. The station failed to gather data. Station #17 was located at latitude 42° 30.6'N, longitude 70° 48.4'W. It was established on August 16, 1968 and taken up on September 3, 1968. The meter recorded data for the full seventeen days it was on station. The film and field records of the study were forwarded to Chief, Tides and Currents. Processing of the data is not complete so results are not yet available.

Nansen cast #1 was taken at latitude 42° 28.82'N, longitude 70° 46.76'W. on July 24, 1968 for comparison with the extension of velocity corrections for PE 05-2-68. All data was calculated by ship's personnel.

At 0001 hours, April 28, 1968 the PEIRCE switched all shipboard clocks to Eastern Daylight Saving Time. All hydrography performed previous to this time must be reduced to the 75° West time meridian. All hydro after this time is based on the 60° West time meridian.

P. RECOMMENDATIONS

None.

Q. REFERENCES TO REPORTS

Report on Landmarks for Charts and Fixed Aids to Navigation, USC&GSS PEIRCE, 1968 Field Season.

Coast Pilot Report, USC&GSS PEIRCE, 1968 Field Season.

Season's Report, USC&GSS PEIRCE, 1968 Field Season.

Respectfully submitted,

Kenneth W. Sigley

Kenneth W. Sigley
LTJG USESSA

APPROVED AND FORWARDED

J. Austin Yeager

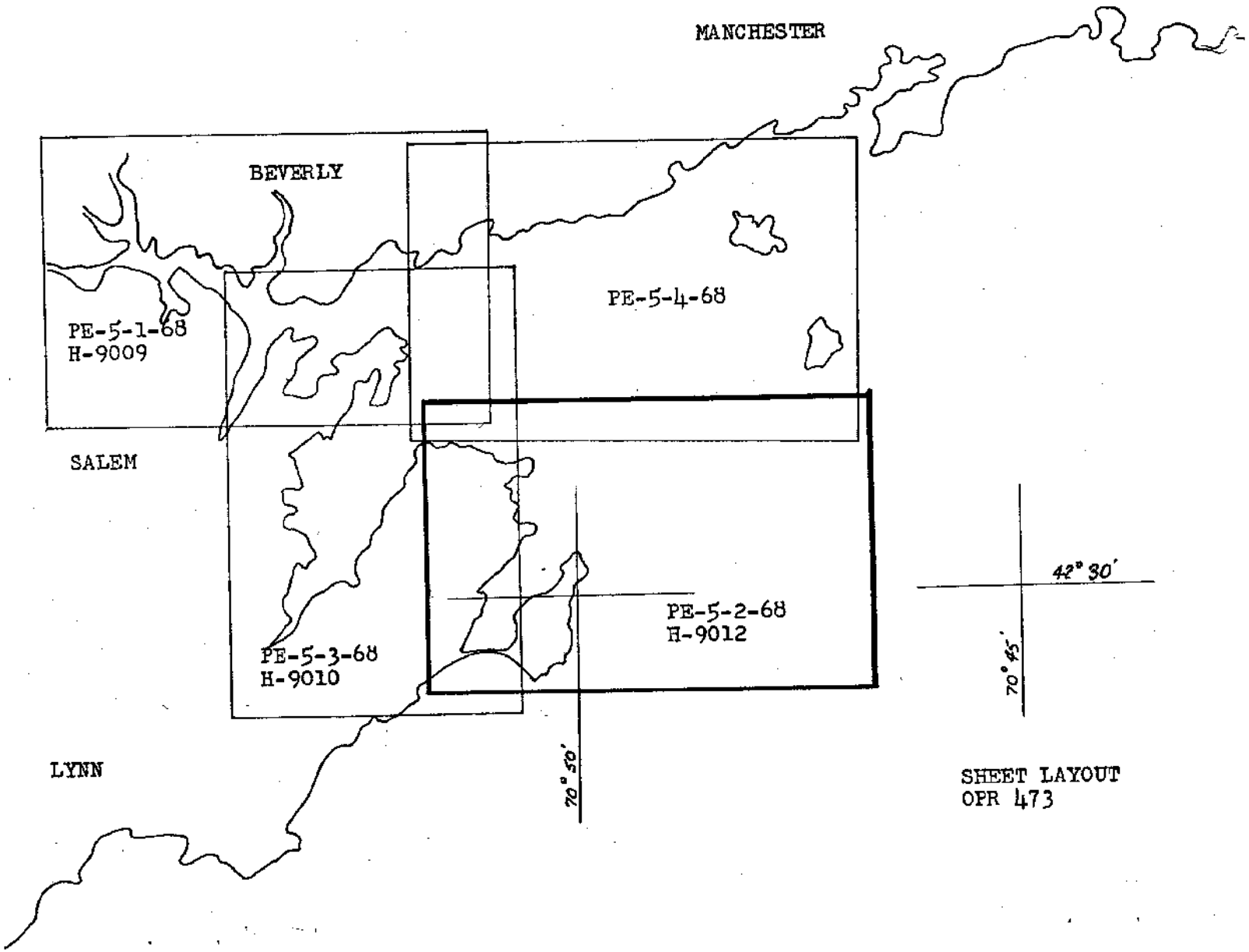
J. Austin Yeager
LCDR USESSA
Chief of Party

APPROVAL SHEET

FIELD NUMBER PE 05-2-68

The field work from this hydrographic survey was under the immediate, daily supervision of LCDR Charles K. Townsend and LCDR J. Austin Yeager. The boat sheet and all records have been reviewed and are approved. It is believed this survey is completely adequate to supercede all prior survays and no additional field work is recommended.

J. Austin Yeager
J. Austin Yeager
LCDR USESSA
Chief of Party


MANCHESTER
BEVERLY
PE-5-1-68
H-9009
PE-5-4-68
SALEM
PE-5-3-68
H-9010
PE-5-2-68
H-9012
LYNN
70° 50'
42° 30'
70° 45'
SHEET LAYOUT
OPR 473

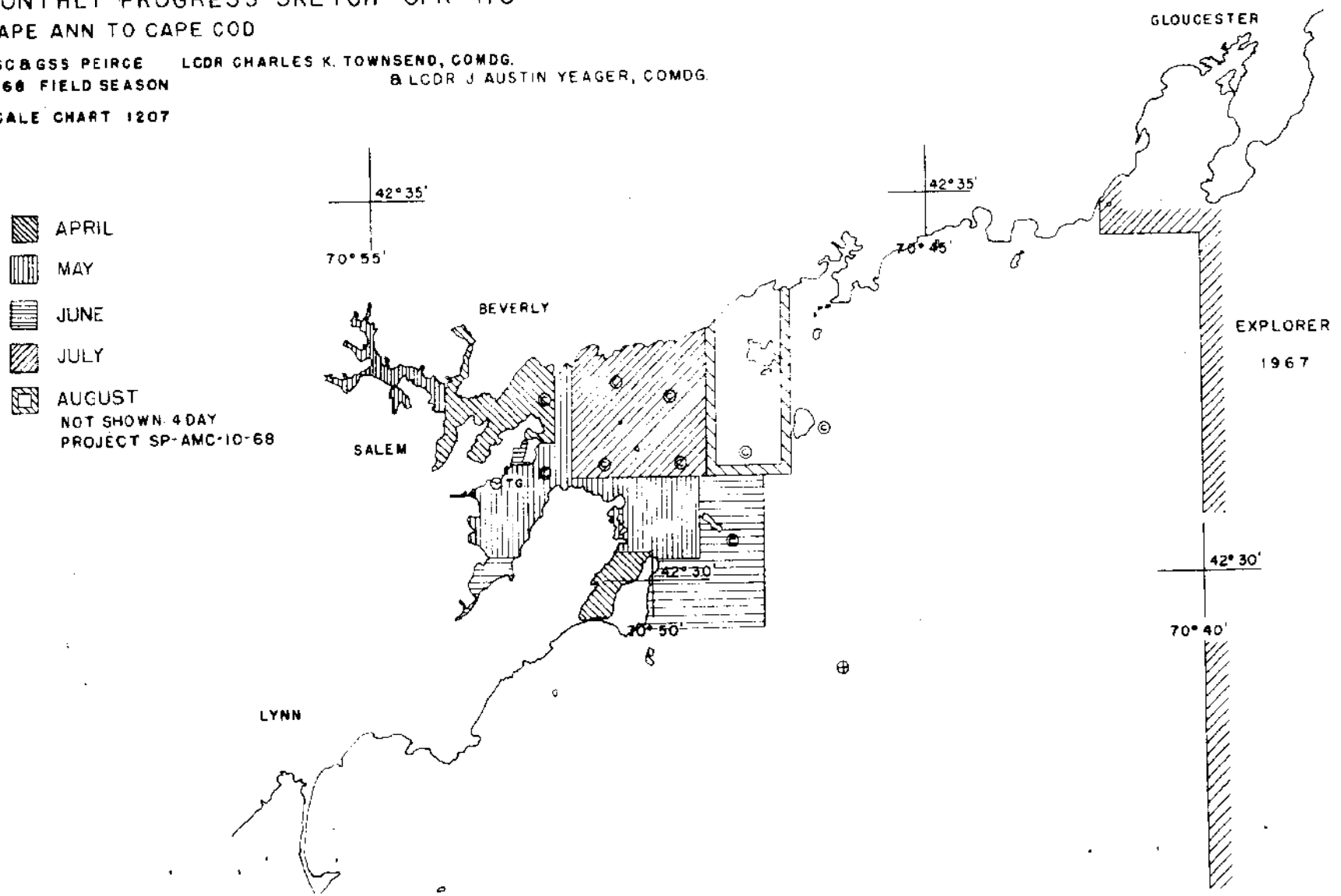
COAST & GEODETIC SURVEY - JAMES C. TISON, DIRECTOR

MONTHLY PROGRESS SKETCH - OPR-473

CAPE ANN TO CAPE COD

USC&GSS PEIRCE LCDR CHARLES K. TOWNSEND, COMDG.
1968 FIELD SEASON & LCDR J AUSTIN YEAGER, COMDG.

SCALE CHART 1207



FORM # 1 FIG. 15

PARAMETERS FOR DIGITAL COMPUTING
POLYCONIC PROJECTION

(1) PROJECT No. OPR 473
(2) H No. H-9012
(3) FIELD No. PE-5-2-68
(4) REQUESTED BY PMC
(5) SHIP OR OFFICE Peirce
(6) DATE REQUIRED ASAP
(7) VISUAL ☒
(8) ELECTRONIC ☐ (FILL OUT FORM #3)

(10) XKN (SP 5) DISTANCE FROM CMER TO EAST EDGE (NYX = 1) OR WEST EDGE (NYX = 0). 3,447.8 METERS

(11) YKN (SP 241) DISTANCE FROM EQUATOR TO SOUTH EDGE OF SHEET. 4,705,418.777 METERS

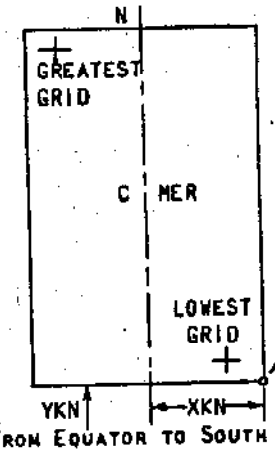
(12) CENTRAL MERIDIAN 70 ° 49 ' 23 "

(13) SURVEY SCALE 1: 5000

(14) SIZE OF SHEET (CHECK ONE) 36x54 ☒ 42x60 ☐ OTHER ____ ☐

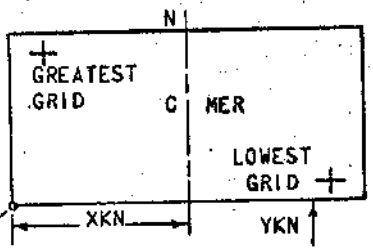
(15) NYX, ORIENTATION OF SHEET (CHECK ONE)

NYX = 1 ☐



FROM EQUATOR TO SOUTH EDGE OF SHEET

NYX = 0 ☒



FROM EQUATOR TO SOUTH EDGE OF SHEET

(9) PLOTTER ORIGIN (CORNER OF SHEET)

LATITUDE 42 ° 29 ' 10 "
LONGITUDE 70 ° 51 ' 54 "

LIST G.P. OF ALL STATIONS TO BE PLOTTED ON THIS PROJECTION ON THE BACK OF THIS FORM. (DEG., MIN., METERS)

GRID LIMITS

(16) GREATEST LATITUDE 42 ° 31 ' 30 " (PROJECTION LINE
(17) LOWEST LATITUDE 42 ° 29 ' 15 " INTERVAL, PAGE 4
(18) DIFFERENCE 0 ° 2 ' 15 " HYDRO MANUAL)
(19) 0 ' 15 "
(20) 9 YSN

(21) GREATEST LONGITUDE 70 ° 51 ' 45 "
(22) LOWEST LONGITUDE 70 ° 47 ' 00 "
(23) DIFFERENCE 0 ° 4 ' 45 "
(24) 0 ' 15 "
(25) 19 XSN

SEPARATES FOLLOWING TEXT:

APPENDIX A. TIDAL NOTE

B. ABSTRACT OF CORRECTIONS TO ECHO SOUNDINGS

C. ABSTRACT OF CORRECTIONS TO DISTANCE MEASUREMENTS

D. ABSTRACT OF TRA CORRECTORS

E. ABSTRACT OF DAILY CONSECUTIVE POSITION NUMBERS BY VESSEL

F. LIST OF SIGNALS

G. ABSTRACT OF STANDARD FORMAT COLUMN HEADINGS

H. ABSTRACT OF HYDROGRAPHIC DATA LOCATED ON THE SURVEY

Coast and Geodetic Survey

Commanding Officer
USCGSS PEIRCE

November 21, 1969

C331W-201-CSS

Tides and Currents Branch
Oceanography Division

Verification of tides

Enclosed are the tide tape printouts for H.S. 9012 and 9046. Reducers for certain days on H.S. 9012 have been rectified so as to be in agreement with the corrections on H.S. 9046.

It should be noted that additional remarks have been added to Form 712 for H.S. 9009-013.

Mean low water on the 1968 tide staff at Salem, Massachusetts, is 6.5 feet.

L. C. Wharton

3 Enclosures

cc:
Chief, Hydrographic Processing Br., AMC

FORM C&GS-712
(10-67)

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

February 26, 1969

Atlantic Marine Center

Plane of reference approved

for

HYDROGRAPHIC SHEETS 9009-9013

Locality: Salem Harbor, Massachusetts

Chief of Party: J. A. Yeager, 1968

Plane of reference is mean low water

Tide Station Used (Form C&GS-681):

Salem
Boston

at the working grounds

Height of Mean High Water above Plane of Reference is as follows:

Zone 1 = 9.0 feet
Zone 2 = 8.1 "
Salem = 8.8 "

Remarks

Tide reducers for Day No. 149, H.S. 9009 have been revised and verified. Tide reducers for Julian Days 199, 200, 212 and 219 have been revised as shown on the tide tape printouts. (H-9012)

JMS

J. M. Symons
Chief, Tides and Currents Branch

APPENDIX A

TIDAL NOTE

Tidal heights for this survey were obtained from marigrams at the portable tide gage the USC&GSS PEIRCE established at Salem, Massachusetts harbor (latitude 42° 31' 18"N, longitude 70° 52' 46"W.). Hourly heights were picked off marigrams and verified by the Tides and Currents Branch. Tides for the periods of time when hydrography was run but no marigrams were obtained were supplied directly from the Tides and Currents Branch. All waters in this survey use the same tide zone established at the portable gage in Salem, Mass. All times for the portable tide station and the hydrography itself were on 75° West time zone until 2400 hours, April 27, (Day 118). All times for the tide station and times for hydrography done after the above date(April 27, Day 118), were of the 60° West time zone. This procedure was followed because of national observance of Daylight Saving Time. Tides were placed on a separate tape because several vessels did hydrography at the same time.

MEAN LOW WATER ON THE STAFF AT PORTABLE GAGE SALEM, MASS IS 6.5 ft. JWR

Abstract of Tides follows as a copy of the Tide Tape Printout because of the length of the document.

It is printed according to the standard tide tape format as detailed in Appendix F - Standard Format Column Headings.

TIDE CORRECTIONS
H-9012

DAY 117

1026	to	14:39
1024		14:42
1022		14:49
1020		14:55
1018		15:02
1016		15:10
1014		15:18
1012		15:25

DAY 178

1080	to	13:10
1078		13:25
1076		13:42
1074		13:54
1072		14:07
1070		14:18
1068		14:30
1066		14:39
1064		14:48
1062		14:58
1060		15:06

Sent to EDAT
on 12/3/69

DAY 198

1068	to	15:20
1070		15:31
1072		15:38
1074		15:46

Days 115, 116, 117 are on 75° med time zone
all other days are on 60° med time zone

APPENDIX B

ABSTRACT OF CORRECTIONS TO ECHO SOUNDINGS

All velocity corrections for this survey were obtained through bar checks taken daily as weather permitted. The velocity corrections were tabulated in tables which are supplied later in this appendix and also placed on a special corrector tape.

Each vessel established its own correctors and sometimes it became necessary to break the velocity corrections of each vessel down further into tables for different times of the work year. The water temperature changed sufficiently during the course of the survey to necessitate this breakdown. The results of the bar checks were placed on graphs and values were picked off the graph in 0.2 foot increments for enclosure in the velocity tables and tapes mentioned above. When it became necessary to extend the graph of velocity corrections beyond the values obtained in the bar check, the results of Nansen cast No. 1 (taken at latitude 42° 28' 49.2"N, longitude 70° 46' 45.6"W) were used to extend the graph.

Raytheon, type 723 fathometers were used in the launches for this survey. Launch PE-1 used fathometer #242; Launch PE-2 used fathometer #260. Soundings in the skiff were obtained with either a sounding pole or a leadline.

In this survey, table one is used for Launch Pe-1 for all days until 2400 hours, May 2 (Day 123). Table two is used for Launch Pe-1 for all days after May 2 (Day 123). Table three is used for Launch Pe-2 for all days in this survey. Table five is used for the skiff for all days in this survey.

Table One

To depth	Correction
7.5	-0.8
20.0	-0.6
32.2	-0.4
36.5	-0.2
45.0	0.0
55.0	+0.2
65.2	+0.4
76.2	+0.6
93.5	+0.8
999.0	+1.0

Table Two

6.5	-0.6
11.0	-0.4
20.0	-0.2
39.3	0.0
47.5	+0.2
55.6	+0.4
63.6	+0.6
71.7	+0.8
81.2	+1.0
98.6	+1.2
999.0	+1.4

TABLE THREE

To depth	Correction
6.3	- 0.8
10.0	- 0.6
15.0	- 0.4
25.0	- 0.2
33.8	0.0
45.0	+ 0.2
51.0	+ 0.4
57.5	+ 0.6
63.8	+ 0.8
70.3	+ 1.0
77.0	+ 1.2
85.3	+ 1.4
96.0	+ 1.6
999.0	+ 1.8

TABLE FIVE

To depth	Correction
999.0	0.0

APPENDIX C.

ABSTRACT OF CORRECTIONS TO DISTANCE MEASUREMENTS

There are no distance measurement correctors as all hydrography on this survey was visually controlled.

APPENDIX D

ABSTRACT OF TRA CORRECTIONS

The TRA corrector is a combination of several below mentioned correctors that actually apply only to depths taken by electronic methods. Therefore, it should be noted that all skiff work has a zero TRA value and is logged as such. The TRA correctors are supplied in this descriptive report by the use of the T/VTI tape and tables.

TRA is defined as follows:

TRA = Transducer draft + Initial corrector
+ Instrumental error + Settlement & squat
+ Phase correction + Fathometer speed corrector

The components of the TRA corrector are as follows:

TRANSDUCER DRAFT

Transducer draft for both launches (PE-1 and PE-2) is supposedly 3 feet. This draft has been eliminated by the setting of the initial on the fathometers at 2 feet in accordance with the memorandum dated October 1, 1962, from the Chief, Instrument Division. Any difference between the actual transducer draft and this pre-set draft is absorbed by the velocity correctors determined by the bar checks. (We have negative velocity corrections at depths of 5 feet giving preliminary credence to an incorrect pre-set transducer draft. Again we emphasize that this makes no actual difference because this error is absorbed by the bar check). Also, there is no appreciable draft change because of fuel consumption. The launches are refueled at least every other day. Two days fuel loss is not enough change in weight to affect the draft. As a result of all these considerations, the transducer draft is negligible.

INSTRUMENTAL ERROR

Velocity corrections for both fathometers were obtained by bar checks, thus instrumental error is ~~non-existant.~~

PHASE CORRECTION

The following correctors are applied to the indicated days of work for each vessel:

TABLE OF PHASE CORRECTIONS

LAUNCH PE-1 (FATHOMETER # 242)

LEGEND: "A" SCALE = 0.0
"B" SCALE = -0.7

DAY	TIME FROM	CORRECTION
115	000000	0.0
116	000000	0.0
117	000000	0.0
118	000000	0.0
119	000000	0.0
120	000000	0.0
121	000000	0.0
	110415	- 0.7
	112945	0.0
	132900	- 0.7
	133015	0.0
	140000	- 0.7
	140230	0.0
122	000000	0.0
	084100	- 0.7
	085930	0.0
	092415	- 0.7
	093500	0.0
	111415	- 0.7
	111900	0.0
	113545	- 0.7
	114415	0.0
	134330	- 0.7
	134945	0.0
	143615	- 0.7
	144630	0.0
	144815	- 0.7
123	000000	0.0
	093700	- 0.7
	094000	0.0
	104815	- 0.7
	105930	0.0
	110545	- 0.7
	111145	0.0
	114315	- 0.7
	115100	0.0
	132330	- 0.7
	134700	0.0
	134800	- 0.7
	135315	0.0
	144400	- 0.7
	144530	0.0
	151500	- 0.7

DAY	TIME FROM	CORRECTION
123	151700	0.0
	152530	- 0.7
134	000000	0.0
	114030	- 0.7
	114215	0.0
	114230	- 0.7
137	000000	0.0
	150515	- 0.7
	150715	0.0
	154630	- 0.7
	154730	0.0
143	000000	0.0
	094015	- 0.7
	102800	0.0
	102945	- 0.7
	103615	0.0
	103815	- 0.7
	104200	0.0
	104800	- 0.7
	105130	0.0
	112415	- 0.7
	112745	0.0
	113215	- 0.7
	113630	0.0
	114230	- 0.7
	114430	0.0
	115215	- 0.7
	115515	0.0
	124015	- 0.7
	124300	0.0
	125045	- 0.7
	125230	0.0
	125515	- 0.7
	125630	0.0
	130615	- 0.7
	130800	0.0
	135315	- 0.7
	135545	0.0
	144645	- 0.7
	144815	0.0
144	000000	0.0
	091130	- 0.7
	091245	0.0

LAUNCH PE-1 (FATHOMETER # 242)

LEGEND: "A" SCALE = 0.0
"B" SCALE = -0.7

DAY	TIME FROM	CORRECTION
144	092615	- 0.7
	095230	0.0
	095330	- 0.7
	095530	0.0
	100930	- 0.7
	102000	0.0
	103030	- 0.7
	105815	0.0
	111145	- 0.7
	111300	0.0
	112730	- 0.7
	112815	0.0
	134500	- 0.7
	134515	0.0
	135545	- 0.7
	140000	0.0
	140430	- 0.7
	151000	0.0
145	000000	0.0
	131930	- 0.7
	132215	0.0
	141100	- 0.7
	141545	0.0
	144015	- 0.7
	144330	0.0
	145830	- 0.7
	150230	0.0
	152045	- 0.7
	152345	0.0
	152600	- 0.7
	152900	0.0

NOTE: Beginning with day 156 the value of correction for "B" scale changes to -0.3, "A" scale unchanged

LEGEND: "A" SCALE = 0.0
"B" SCALE = -0.3

156	000000	0.0
	103530	- 0.3
	104000	0.0
	105030	- 0.3
	105515	0.0

DAY	TIME FROM	CORRECTION
156	112545	- 0.3
	113115	0.0
	113945	- 0.3
	114415	0.0
	132145	- 0.3
	132615	0.0
	134215	- 0.3
	134715	0.0
	134915	- 0.3
	135045	0.0
	135400	- 0.3
	135545	0.0
	135715	- 0.3
	140100	0.0
157	000000	- 0.3
	094845	0.0
	094945	- 0.3
	095415	0.0
	101315	- 0.3
	101615	0.0
	101700	- 0.3
	105335	0.0
	105445	- 0.3
	105700	0.0
	112000	- 0.3
	112130	0.0
	112330	- 0.3
	112430	0.0
	114600	- 0.3
	114630	0.0
	114845	- 0.3
	115030	0.0
	131130	- 0.3
	131315	0.0
	131430	- 0.3
	131730	0.0
	134630	- 0.3
	134745	0.0
	135545	- 0.3
	135745	0.0
	135800	- 0.3
	135845	0.0
	140030	- 0.3
	140815	0.0
	150245	- 0.3
	150445	0.0
	150515	- 0.3

LAUNCH PE-1 (FATHOMETER # 242)

LEGEND: "A" SCALE = 0.0
"B" SCALE = -0.3

DAY	TIME FROM	CORRECTION
158	000000	- 0.3
	090900	0.0
	091045	- 0.3
	092100	0.0
	092245	- 0.3
	095530	0.0
	100430	- 0.3
	100500	0.0
	111445	- 0.3
	113345	0.0
	113645	- 0.3
	134530	0.0
	135015	- 0.3
	135115	0.0
	135230	- 0.3
	140345	0.0
	142030	- 0.3
	142345	0.0
	142415	- 0.3
	143645	0.0
	144100	- 0.3
	151015	0.0
	151415	- 0.3
	153015	0.0
159	000000	0.0
	090930	- 0.3
	091000	0.0
	092530	- 0.3
	093300	0.0
	093345	- 0.3
	104145	0.0
	111900	- 0.3
	112200	0.0
	112545	- 0.3
	114230	0.0
	131100	- 0.3
	131200	0.0
	131300	- 0.3
	131320	0.0
	131400	- 0.3
	135615	0.0
	140515	- 0.3
	141900	0.0
	150115	- 0.3
	150145	0.0
	151115	- 0.3

DAY	TIME FROM	CORRECTION
159	152430	0.0
160	000000	- 0.3
	090400	0.0
	091015	- 0.3
	091915	0.0
	111945	- 0.3
	113245	0.0
	113315	- 0.3
	133100	0.0
	134030	- 0.3
	134845	0.0
	134900	- 0.3
	135415	0.0
	151800	- 0.3
	152220	0.0
	152300	- 0.3
	153130	0.0
161	000000	0.0
	085945	- 0.3
	090230	0.0
	090515	- 0.3
	091930	0.0
	094100	- 0.3
	094245	0.0
	094715	- 0.3
	100145	0.0
	100500	- 0.3
	100915	0.0
	110015	- 0.3
	112130	0.0
	131800	- 0.3
	131930	0.0
	132500	- 0.3
	133015	0.0
	133100	- 0.3
	134030	0.0
	150045	- 0.3
	150845	0.0
	151000	- 0.3
	151430	0.0
162	000000	0.0
163	000000	0.0
	094945	- 0.3
	095730	0.0
	095820	- 0.3
	100330	0.0

LAUNCH PE-1 (FATHOMETER # 242)

LEGEND: "A" SCALE = 0.0
"B" SCALE = -0.3

DAY	TIME FROM	CORRECTION
163	100700	- 0.3
	101430	0.0
	102000	- 0.3
	110100	0.0
	111330	- 0.3
	114445	0.0
164	000000	0.0
165	000000	0.0
	140115	- 0.3
	140530	0.0
	141300	- 0.3
	141945	0.0
	142045	- 0.3
170	000000	- 0.3
	084100	0.0
	084430	- 0.3
	084630	0.0
	094730	- 0.3
	094745	0.0
	094900	- 0.3
	095015	0.0
	095145	- 0.3
	095230	0.0
	095245	- 0.3
	095330	0.0
	104400	- 0.3
	104445	0.0
	104530	- 0.3
	104545	0.0
	110200	- 0.3
	110245	0.0
	110300	- 0.3
	110315	0.0
	111445	- 0.3
	111615	0.0
	112700	- 0.3
	113400	0.0
	113430	- 0.3
	114000	0.0
	132345	- 0.3
	132400	0.0
	132500	- 0.3
	132530	0.0
	132630	- 0.3

DAY	TIME FROM	CORRECTION
170	132645	0.0
	132700	- 0.3
	132715	0.0
	132730	- 0.3
	132745	0.0
	132830	- 0.3
	133615	0.0
	133630	- 0.3
	134005	0.0
	134030	- 0.3
	134200	0.0
	135645	- 0.3
	135700	0.0
	145100	- 0.3
	145130	0.0
	145800	- 0.3
	151300	0.0
	151630	- 0.3
	152105	0.0
	152115	- 0.3
	152215	0.0
	152230	- 0.3
	152945	0.0
	153000	- 0.3
	153150	0.0
	153215	- 0.3
	153430	0.0
171	000000	0.0
	090300	- 0.3
	092000	0.0
	092030	- 0.3
	092745	0.0
	094400	- 0.3
	094545	0.0
	110615	- 0.3
	111100	0.0
	111200	- 0.3
	112400	0.0
	112500	- 0.3
	112600	0.0
	125300	- 0.3
	125415	0.0
	125500	- 0.3
	130900	0.0

LAUNCH PE-1 (FATHOMETER # 242)

LEGEND: "A" SCALE = 0.0
"B" SCALE = -0.3

DAY	TIME FROM	CORRECTION
171	130945	- 0.3
	131600	0.0
	132515	- 0.3
	133115	0.0
	133200	- 0.3
	134630	0.0
172	000000	0.0
	084100	- 0.3
	085530	0.0
	085615	- 0.3
	093915	0.0
	103500	- 0.3
	104215	0.0
	104230	- 0.3
	105700	0.0
	111915	- 0.3
174	000000	- 0.3
	084015	0.0
	084130	- 0.3
	084445	0.0
	100600	- 0.3
	101400	0.0
	112900	- 0.3
	112915	0.0
	120200	- 0.3
	133200	0.0
	133315	- 0.3
	133345	0.0
	133430	- 0.3
	133700	0.0
	133800	- 0.3
	133830	0.0
	135730	- 0.3
	141800	0.0
	141845	- 0.3
	142015	0.0
	142115	- 0.3

DAY	TIME FROM	CORRECTION
176	000000	0.0
	103400	- 0.3
	103530	0.0
	103615	- 0.3
	113945	0.0
	114115	- 0.3
	114200	0.0
	114230	- 0.3
	114445	0.0
	144630	- 0.3
241	000000	0.0
	093145	- 0.3
	093545	0.0
	094330	- 0.3
	114615	0.0
	114900	- 0.3
	114930	0.0
	115030	- 0.3

TABLE OF PHASE CORRECTIONS

LAUNCH PE-2 (FATHOMETER #260)

LEGEND: "A" SCALE = 0.0
"B" SCALE = -0.6

DAY	TIME FROM	CORRECTION
138	000000	0.0
	105500	- 0.6
	110400	0.0
	110745	- 0.6
	111630	0.0
	111900	- 0.6
	112900	0.0
	113315	- 0.6
	113715	0.0
	113930	- 0.6
	114015	0.0
	114115	- 0.6
	114500	0.0
	131230	- 0.6
	131600	0.0
	132315	- 0.6
	132430	0.0
	132615	- 0.6
	133015	0.0
	133130	- 0.6
	133215	0.0
	133730	- 0.6
	133915	0.0
	134015	- 0.6
	134215	0.0
	134330	- 0.6
	134515	0.0
	142300	- 0.6
	142500	0.0
	142945	- 0.6
	143315	0.0
	143345	- 0.6
	143400	0.0
	144115	- 0.6
	144800	0.0
	144830	- 0.6
	144945	0.0
	145115	- 0.6
	145230	0.0
	150130	- 0.6
	150235	0.0
	150330	- 0.6
138	151205	0.0
	151245	- 0.6
	151345	0.0
	152315	- 0.6
	152430	0.0
	152500	- 0.6
163	000000	0.0
	100330	- 0.6
	100830	0.0
	104600	- 0.6
	110815	0.0
	113400	- 0.6
165	000000	- 0.6
	134115	0.0
	142915	- 0.6
	145330	0.0
	151100	- 0.6
	151130	0.0
	153530	- 0.6
	153545	0.0
177	000000	- 0.6
	091700	0.0
	092115	- 0.6
	094430	0.0
	095500	- 0.6
	100445	0.0
	104015	- 0.6
	105030	0.0
	111130	- 0.6
	111415	0.0
	111500	- 0.6
	111645	0.0
	112315	- 0.6
	112700	0.0
	120445	- 0.6
	120600	0.0
178	000000	0.0
	124130	- 0.6
	124945	0.0
	125045	- 0.6
	130530	0.0
184	000000	0.0

LAUNCH PE-2 (FATHOMETER #260)

LEGEND: "A" SCALE = 0.0
"B" SCALE = -0.6

DAY	TIME FROM	CORRECTION
184	092200	- 0.6
	093300	0.0
	114600	- 0.6
	115700	0.0
	132800	- 0.6
	133800	0.0
	135000	- 0.6
185	000000	0.0
	093900	- 0.6
	095600	0.0
	115000	- 0.6
	120000	0.0
	131600	- 0.6
191	000000	- 0.6
	083615	0.0
	084500	- 0.6
	084545	0.0
	084700	- 0.6
	084915	0.0
	085145	- 0.6
	090900	0.0
	090945	- 0.6
	091100	0.0
	091200	- 0.6
	092100	0.0
	092345	- 0.6
	093800	0.0
	094500	- 0.6
	104115	0.0
	110530	- 0.6
	110715	0.0
	110730	- 0.6
	110830	0.0
	111400	- 0.6
	112045	0.0
	114245	- 0.6
	132000	0.0
	135300	- 0.6
	135700	0.0
	135730	- 0.6
	145500	0.0
	150645	- 0.6
	150705	0.0
	150845	- 0.6
	151845	0.0
192	000000	0.0

DAY	TIME FROM	CORRECTION
193	000000	0.0
	084700	- 0.6
	084945	0.0
	085045	- 0.6
	085200	0.0
	085315	- 0.6
	092815	0.0
194	000000	0.0
	133500	- 0.6
	133600	0.0
	143915	- 0.6
	145600	0.0
	152000	- 0.6
	152015	0.0
	152045	- 0.6
195	000000	0.0
	085430	- 0.6
	090000	0.0
	090050	- 0.6
	105545	0.0
	115615	- 0.6
	130730	0.0
197	000000	0.0
	085515	- 0.6
	085625	0.0
	085645	- 0.6
	105200	0.0
	105245	- 0.6
	111050	0.0
	111100	- 0.6
	112430	0.0
	112445	- 0.6
	114505	0.0
	114545	- 0.6
	115215	0.0
	115230	- 0.6
	132335	0.0
	132430	- 0.6
	134145	0.0
	134645	- 0.6
	135630	0.0
	140415	- 0.6
	140545	0.0
	141015	- 0.6
	141245	0.0
	150000	- 0.6

LAUNCH PE-2 (FATHOMETER #260)

LEGEND: "A" SCALE = 0.0
"B" SCALE = -0.6

DAY	TIME FROM	CORRECTION
197	151315	0.0
	151330	- 0.6
198	000000	0.0
	091200	- 0.6
	105000	0.0
	112400	- 0.6
	115645	0.0
	145130	- 0.6
	145200	0.0
	145315	- 0.6
	150415	0.0
	150530	- 0.6
	152830	0.0
	152845	- 0.6
	152905	0.0
	152930	- 0.6
	153015	0.0
199	000000	0.0
	112600	- 0.6
	112700	0.0
212	000000	0.0
219	000000	0.0
220	000000	0.0

DAY	TIME FROM	CORRECTION
221	000000	0.0
222	000000	-0.6
	143730	0.0
	150745	- 0.6
	151730	0.0
223	000000	0.0
	102015	- 0.6
	102145	0.0
	102700	- 0.6
	104100	0.0
	105600	- 0.6
	105730	0.0
	110500	- 0.6
	110515	0.0
	133300	- 0.6
	140000	0.0
	140430	- 0.6
	141215	0.0
	142315	- 0.6
	143130	0.0
	144145	- 0.6
224	000000	0.0
233	000000	0.0

Initial

The following corrections are applied to the indicated days of work for each vessel:

TABLE OF INITIAL CHANGES

LAUNCH PE-1

Day	Time from	Correction
115	000000	0.0
116	000000	0.0
	095430	+0.3
	110745	0.0
	112200	+0.3
	114400	0.0
117	000000	0.0
	090725	+0.3
	092500	0.0
	093030	+0.3
	093500	0.0
	104400	-0.3
	104745	0.0
	151400	-0.3
	151430	0.0
118	000000	0.0
119	000000	0.0
	130830	-0.3
	130945	0.0
	140030	-0.3
	144130	0.0
120	000000	0.0
	115600	-0.3
121	000000	0.0
122	000000	0.0
123	000000	0.0
134	000000	0.0
137	000000	0.0
143	000000	0.0
	104400	-0.3
	104545	0.0
	104945	-0.3
	105145	0.0
144	000000	0.0
145	000000	0.0
	133200	-0.3
	135200	0.0
156	000000	0.0
157	000000	0.0
158	000000	0.0
159	000000	0.0
	092230	-0.3
	093300	0.0
	105200	-0.3
	111900	0.0
	112500	-0.3
	114315	0.0
160	000000	0.0
	111100	+0.4
	111415	0.0
	143730	-0.3
	144100	0.0
161	000000	0.0
162	000000	0.0
	095300	-0.3
	105500	0.0
163	000000	0.0
164	000000	0.0
165	000000	0.0
170	000000	0.0
171	000000	0.0
	094400	+0.4
	095100	0.0
	152115	-0.2
172	000000	0.0

174	000000	0.0
	084000	-0.2
	084615	0.0
176	000000	0.0
241	000000	0.0

TABLE OF INITIAL CHANGES

LAUNCH PE-2

Day	Time from	Correction
138	000000	0.0
	142600	-0.2
	143445	0.0
	151700	-0.2
	151930	0.0
163	000000	0.0
165	000000	0.0
177	000000	0.0
178	000000	0.0
184	000000	0.0
185	000000	0.0
191	000000	0.0
192	000000	0.0
	104900	-0.2
	105645	0.0
193	000000	0.0
194	000000	0.0
195	000000	0.0
	104500	-0.2
	105545	0.0
	145845	-0.2
	150645	0.0
197	000000	0.0
	150000	-0.3
198	000000	0.0
199	000000	0.0
212	000000	0.0
219	000000	0.0
	110000	-0.2
	120400	0.0
220	000000	0.0
221	000000	0.0
222	000000	0.0
223	000000	0.0
	085615	-0.2
	090230	0.0
	090300	-0.2
	091030	0.0
	102015	+0.3
	102530	0.0
	133845	-0.3
	140000	0.0
	142200	-0.2
	142245	0.0
	143730	+0.3
	144115	0.0
224	000000	0.0
233	000000	0.0

SETTLEMENT AND SQUAT

Settlement and squat data was obtained for launch PE-2. Since launch PE-1 is identical, the same data applies for it also. This data is supplied below. The actual corrections for settlement and squat were obtained by noting the speed changes in the sounding volumes.

RPM	CORRECTOR IN TENTHS OF FEET	CORRECTOR IN INCHES
0000	0.0	0.0
500	0.0	0.0
1000	- 0.1	- 1.0
1200	- 0.1	- 1.0
1500	- 0.2	- 2.0
1800	- 0.2	- 2.0
2300	- 0.1	- 1.0

The Hydrographic Manual says that corrections for this type of survey should be in 0.2 foot increments plus or minus 0.1, therefore, we have set the settlement and squat corrector to be a constant value of - 0.1 so that at any speed used on the launches we would be within 0.1 as specified. Of course the skiff would have no settlement and squat corrector.

FATHOMETER SPEED CORRECTOR

The fathometers were maintained so that there was little speed corrector necessary. Any existing error was absorbed by the use of bar checks in obtaining velocity correctors.

Abstract of TRA corrections follows as a copy of the T/VTI tape printout because of the length of the document. It is printed according to the standard T/VTI tape format as detailed in Appendix F - Standard Format Column Headings.

APPENDIX E

ABSTRACT OF DAILY CONSECUTIVE POSITION NUMBERS BY VESSEL

The survey records were sent away before this Appendix could be tabulated.

NORFOLK HYDROGRAPHIC PROCESSING BRANCH
LIST OF
TRIANGULATION STATIONS
SURVEY H-9012

SIG. NO.	NAME.	TRIANGULATION STATIONS
203	COD	CODDON, 1834-1919
206	TAN	MARBLEHEAD, BLACK STANDPIPE, 1919-34
207	TOW	MARBLEHEAD, ABBOT TOWER, 1919-34
208	REG	MARBLEHEAD, FIRST CONG. CHURCH, 1919-35
401	VIC	MARBLEHEAD, WEATHER SERVICE, DISPLAY TR., 1914-35
404	NEC	MARBLEHEAD NECK, 1940
403	MAR	MARBLEHEAD, LIGHTHOUSE, 1848-77
407	ROC	MARBLEHEAD, ROCK BN., 1914
409	BOT	KETTLE BOTTOMS BN., 1914
408	TOM	TOM MOORES ROCK BN., 1914
402	ERK	PERKINS 2, 1943
445	CAT	CAT ISLAND BN., 1914
405	SAT	SATAN ROCKS BN., 1914
406	RIM	BRIMBLES BN., 1914
305	BER	N. GOOSEBERRY ISLAND, 1848-1916

TOWER

CONGREGATIONAL

APPENDIX F

LIST OF SIGNALS (PE-5-2-68)

NAME	SOURCE	EDP #
ACE	T-12976	410
ACT	976	435
AHA	976	456
AZO	976	429
BAG	976	457
BER	Geographic Position	305
BON	976	436
BOT	Geographic Position	409
BUM	976	430
CAT	Geographic Position	445
COD	Geographic Position	203
COO	976	458
CUR	976	437
DEB	976	411
DEL	976	432
DOC	976	459
DOG	977	446
DOT	976	438
EAT	976	412
EGG	976	439
EMO	976	433
EON	976	460
ERK	Geographic Position	402
FIN	976	440
FLO	976	461
FLY	976	413
GAL	976	442
GAS	976	414
GET	976	462
GUM	977	447
HOP	976	443
HUD	976	431
ICE	976	434
ION	976	444
IVY	976	415
JOY	976	416
KEN	976	417

APPENDIX F (CONT.)

NAME	SOURCE	EDP #
MAR	Geographic Position	403
MOO	T-12976	419
NED	976	420
ORB	976	421
PRO	977	448
PUP	976	422
RAT	976	423
REG	Geographic Position	208
REV	977	449
RIM	Geographic Position	406
ROC	Geographic Position	407
SAT	Geographic Position	405
SIR	976	424
SUB	976	450
TAN	Geographic Position	206
TAX	976	425
TEK	976	441
TIP	976	451
TOM	Geographic Position	408
TOW	Geographic Position	207
VAL	976	426
VEX	976	452
VIC	Geographic Position	401
WAR	976	427
WAX	976	453
YAK	976	454
ZIG	976	455
ZOO	976	428

HYDRO-SIGNAL CARDS 9012 31

EDP NO.	NO.	LATITUDE	LONGITUDE	NAME
09012	203	42305859	070511752	COD
09012	206	42295863	070514669	TAN
09012	207	42300885	070511108	TOW
09012	208	42302508	070505414	REG
09012	305	42313542	070473921	BER
09012	401	42303173	070503027	VIC
09012	402	42293688	070501213	ERK
09012	403	42301919	070500307	MAR
09012	404	42301747	070500061	NEC
09012	405	42303652	070480333	SAT
09012	406	42311617	070483027	RIM
09012	407	42301138	070493451	ROC
09012	408	42294126	070494870	TOM
09012	409	42310852	070501284	BOT
09012	410	42311277	070511170	ACE
09012	411	42310985	070510254	DEB
09012	412	42310823	070505713	EAT
09012	413	42310564	070504284	FLY
09012	414	42310784	070503763	GAS
09012	415	42305730	070503759	IVY
09012	416	42305947	070504113	JOY
09012	417	42305231	070504919	KEN
09012	419	42304965	070504262	MOO
09012	420	42304771	070504713	NEO
09012	421	42304670	070504367	ORB
09012	422	42304330	070503934	PUP
09012	423	42303912	070503088	RAT
09012	424	42303406	070504209	SIR
09012	425	42303244	070503916	TAX
09012	426	42300668	070510123	VAL
09012	427	42294638	070511165	WAR
09012	428	42292803	070512369	ZOO
09012	429	42293017	070504672	AZO
09012	430	42294881	070504195	BUM
09012	431	42295843	070502724	HUD
09012	432	42310596	070514157	DEL
09012	433	42303659	070512738	EMO
09012	434	42301701	070510438	ICE
09012	435	42293614	070500797	ACT
09012	436	42292648	070501029	BON
09012	437	42292693	070501655	CUR
09012	438	42292304	070502294	DOT
09012	439	42292029	070502478	EGG
09012	440	42291627	070503170	FIN
09012	441	42293183	070512023	TEK
09012	442	42292463	070503840	GAL

09012	443	42310075	070503137	HOP
09012	444	42291646	070514444	ION
09012	445	42303199	070484498	CAT
09012	446	42304320	070485528	DOG
09012	447	42313072	070484929	GUM
09012	448	42311990	070473124	PRO
09012	449	42301099	070495523	REV
09012	450	42300169	070500508	SUB
09012	451	42295774	070500657	TIP ? ch
09012	452	42294544	070500867	VEX
09012	453	42311364	070511533	WAX
09012	454	42311235	070511485	YAK
09012	455	42311170	070511306	ZIG
09012	456	42310959	070510859	AHA
09012	457	42310813	070510123	BAG
09012	458	42310917	070505717	COO
09012	459	42310444	070505125	DOC
09012	460	42310104	070504990	EON
09012	461	42310110	070504657	FLO
09012	462	42310379	070504499	GET

000

CORRECTIONS FOR VISUAL HYDRO. SIGNAL CONTROL DATA

H-9012

451	42 29 ~~1765~~ 36	070 50 0150	TIP
437	42 29 0831	070 50 0378	CUR
434	42 30 0525	070 51 0100	ICE
420	42 30 1472	070 50 1076	NEO
404	42 30 0539	070 50 0014	NEC

APPENDIX G

ABSTRACT OF STANDARD FORMAT COLUMN HEADINGS

Position Tape

Time			Pos#	Day	Left Angle	Right Angle	Left Obj.	Ctr Obj	Rt. Obj
135800	0	0000	5000	189	035470	045450	0245	345	321

Sounding Tape

Time	Ind	Sdg	Vel. Tab.	Day					Special Ind.
135100	1	0345	0002	189	000000	000000	0000	000	500

Tranducer/Velocity Table Indicator (T/VTI) Tape

Time		TRA		Day		
105200	0	1002	0000	195	000000	000000

Tide Tape

Time		Tide		Day		
090000	0	0080	0000	135	000000	000000

Velocity Table Tape

Depth		Vel. Corrn	Vel Table			
000100	0	0004	0003	000	000000	000000

Signal List Tape

EDP#	Latitude °	'	meters	Longitude °	'	meters	name
100	27	08	0899	080	09	0446	ANT

APPENDIX H

FIELD NUMBER PE-05-2-68

ABSTRACT OF HYDROGRAPHIC DATA LOCATED ON THE SURVEY

POSITION NUMBER	OBJECT
0609	black can buoy # 1
0610	red and black bell buoy
0611	black can buoy # 3
1162	red and black mid-channel buoy
1163	black buoy # 3
1164	red nun buoy # 8
2163	black can buoy RB
2225	gry M
2226	blk M
2227	blk M
2228	blk M
2229	blk M
2230	blk M
2231	fne brk Sh
2232 2233	blk M w brk Sh
2234	rks
2289	black can buoy # 7
2290	red nun buoy # 4
2291	red nun buoy # 6
2292	black lighted buoy # 9
6304	rks, blk S
6305	rks
6306	rks, gy S, brk Sh
6307	rks, brk Sh
6308	rks
6309	blk M
6310	rks
6311 N.P. Swinger	rks
6312 N.P. "	rks, gy M
6313	rks
6314	rks, gy M
6315	~~blk M~~ brk Sh
6316	gy S
6317	gy S
6318	rks
6319	gy S, rks
6320	gy M
6321	gy M, gy S
6322	br S, brk Sh, rks
6323	gy M, rks
6324	rks
6325	rks

6326	gy S, brk Sh
6327	fne brk Sh, gy S
6328	rks
6329	rks
6330	rks
6331	rks
6332	rks
6333	rks
6334	rks
6335	gy S
6336 - 6418	gy S, brk Sh — Prov. maint Bn, Vol 14. Day 171
6580	rks
6724	rk
6725	rk
7429	fne br S, blk M
7430	br S, brk Sh
7431	rk
7432	crs S, rks
7433	rk
7434	rk
7435	br S, brk Sh
7436	rk
7437	rks
7438	rks
7439	fne brk Sh, rks
7440	fne br S, brk Sh
7441	fne br S, rk
7442	fne br S, blk M
7443	fne br S, brk Sh
7444	rk
7445	fne br S, brk Sh
7446	rk
7447	rk
7448	rk
7449	rk
7450	med G
7451	fne br S, brk Sh
7452	br S, brk Sh, rk
7453	rk
7454	rk
7455	rk
7456	rks
7457	rks
7458	rks
7459	G, brk Sh
7460	rks
7461	rks
7462	rks
7463	rks
7464	rks, brk Sh

7465	rks
7466	brk Sh
7467	rks
7468	rks
7469	rks
7470	rks
7471	rks
7472	fne br S
7473	fne br S, rks
7474	rky
7718	rk
7834	rk
7982	red nun buoy # 2 ✓
7983	black and red can buoy ✓
7494	kelp
7495	rk
7496	rk
7497	rk
7984	~~rk~~, brk Sh
7985	rky
7986	br M
7987	rky
7988	rky
7989	G
7990	~~rk,~~ brk Sh
7991	rky
7992	rky
7993	rky
7994	
7995	R, kelp Rky
7996	Rky
7997	Rky
	Rky

VERIFICATION NOTES
SURVEY H-9012

GENERAL

This appears to be an excellent basic survey. Soundings are in good agreement at crossings and the depth curves adequately delineate the numerous features in this area of irregular bottom.

The charted 18 ft. sounding just to the east of can buoy "RB" was not found; however, the area is not sufficiently developed to disprove this depth.

There are many isolated controlling depths throughout the survey that were not developed to assert the least depth.

The positions listed below were processed and plotted in the conventional manner, and are not included in the automated data. They are detached positions around piers in very congested areas:

6000 thru 6019
6021
6022
6041 thru 6052
6054 thru 6057
6059 thru 6065
6067 thru 6079
6082 thru 6096
6111 thru 6116
6311
6312
6411 thru 6417

December 5, 1974
Norfolk, Virginia

William L. Jonns
Chief, Verification Branch
AMC

ATLANTIC MARINE CENTER
APPROVAL SHEET
FOR
AUTOMATED SURVEY H-9012

A. All revisions and additions made on the smooth sheet during verification have been entered in the magnetic tape records for this survey. A new final position printout ~~xxx~~/has not been made. A new final sounding printout ~~xxx~~/has not been made.

Date: Dec.4,1974

Signed: William L Jonns

William L.Jonns
Title: Chief, Verification Branch

B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the Hydrographic and AMC Manuals. Exceptions are listed in the verifier's report.

Date: Dec.4,1974

Signed: _____

C.Dale North,Jr.LCDR,NOAA
Title: Chief, Processing Division

H-9012
PE-5-2-68

Fig. 18.

DESCRIPTIVE REPORT DATA RECORD			
PART I SMOOTH SHEET PREPARATION		PREPARED BY/OPERATOR	DATE
A. PLOTTER OPERATOR			
B. DISTORTION MARKS PLOTTED		EDAT-PMC	
C. PROJECTION INTERSECTIONS PLOTTED		EDAT-PMC	
D. POINTS OF ELECTRONIC CONTROL ARCS PLOTTED		None	
E. OVERLAYS PREPARED BY			
1. POSITION NUMBER		EDAT-PMC	
2. EXCESS SOUNDINGS		EDAT-PMC	
3. PRELIMINARY SMOOTH PLOT			
4. LIST OTHERS			
A.			
B.			
F. SOUNDING SELECTION BY			
G. PLOTTER INPUT	PREPARED		
H.	CHECKED		
I. DESCRIPTIVE REPORT ADDENDUMS			
PART II SMOOTH SHEET COMPLETION			
		CARTOGRAPHER	DATE
A. DISTORTION SCALE TICKS IDENTIFIED BY NOTE		HRS	8-23-74
B. PROJECTION INTERSECTIONS VERIFIED BY		HRS	7-2-74
C. PROJECTION LINES RULED BY		HRS	7-8-74
D. ELECTRONIC CONTROL ARCS RULED AND LOCATION VERIFIED		None	
E. OVERLAYS COMPLETED BY			
1. POSITION NUMBER LEADERS ADDED		HRS	8-23-74
2. EXCESS SOUNDING OVERLAY COMPARED		FB HRS	1-16-70 7-15-74
3. PRELIMINARY SMOOTH PLOTS COMPARED		FB HRS	1-16-70 8-23-74
4. OTHERS UTILIZED			
A.			
B.			
F. DESCRIPTIVE REPORT ADDENDUM			
G. CONTROL STATIONS VERIFIED		WLJ	4-1-69
H. POSITIONS MANUALLY PLOTTED		HRS	8-6-74
I. MANUAL PLOT VERIFIED		HRS	8-23-74
J. SHORELINE APPLIED		HRS	8-23-74
K. BOTTOM CHARACTERISTICS ADDED		HRS	8-23-74
L. NOTES AND DEPTH CURVES ADDED		HRS	9-5-74

NOAA FORM 77-27
(9-72)
(PRESC BY HYDROGRAPHIC MANUAL 20-2, 6-94, 7-13)

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

HYDROGRAPHIC SURVEY STATISTICS

HYDROGRAPHIC SURVEY NO. H-9012 PE-5-2-68

RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET & 3-Overlays	1	BOAT SHEETS	1
DESCRIPTIVE REPORT	1	OVERLAYS (boat sheet)	6

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES						
CAHIERS	2					
VOLUMES	22					
BOXES			1			

T-SHEET PRINTS (*List*)

SPECIAL REPORTS (*List*)

OFFICE PROCESSING ACTIVITIES

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

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				5078
POSITIONS CHECKED		1000		
POSITIONS REVISED		300		
DEPTH SOUNDINGS REVISED		1800		
DEPTH SOUNDINGS ERRONEOUSLY SPACED				
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		5		
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		24 8	50	
JUNCTIONS			13	
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS	92	40	10	
SPECIAL ADJUSTMENTS	52			
ALL OTHER WORK		704	90	
TOTALS	144	776	163	

	BEGINNING DATE	ENDING DATE
PRE-VERIFICATION BY Fred Bean	6-6-69	1-16-70
VERIFICATION BY Harry R. Smith	7-2-74	9-5-74
REVIEW BY L Fountain	15 JUN 77	12 Sep 77

* U.S. G.P.O. 1972-769-562/439 REG.#6

VERIFIER: Fred Bean

Norfolk, Va.
June 11, 1969

AMC PLOTTER NOTE TO EDAT
SURVEY H-9012

1. This office has verified the position overlay for this survey.

2. There are approximately 160 position changes. We have relogged these changes and are forwarding a tape and printout.

3. Three areas of developement were not logged in the field. We have logged this work for incopporation into the survey, and are forwarding raw data sounding and position tapes and printouts, Tide, velocity and TC/TI tapes and printouts.

4. You will find about 75 positions marked "destroy". These are positions on detached soundings around piers which have congested the position overlay to the extent that the numbers are not legible. These positions and soundings will be plotted manually.

5. Due to the many changes and to the congestion on the present overlay, it is requested that we be furnished a new position overlay incorporating the above additions and deletions. When it has been verified we will notify you by phone to proceed with the sounding plot.

6. There is no indication in this office that the tides have been approved by the Tide Division.

Hugh L. Proffitt
Chief, Hydro Branch, AMC

VERIFIER: Fred Bean

Norfolk, Va.
March 20, 1970

AMC PLOTTER NOTE TO EDAT
SURVEY H-9012

This office has completed the verification of the preliminary sounding overlay for this sheet and we are returning the position and sounding printouts.

Five positional changes are to be made as shown on the position card printout in red pencil.

This is a congested inshore survey and you will find a great many changes indicated in red on the sounding card printout.

When the above changes have been made, please furnish this office a smooth sheet for this survey. Soundings fall rather close to the edges of the sheet so it should be plotted on 42 inch paper if the cloth backing does not extend to the edges of the paper. We will trim it to the proper size later.

Hugh L. Proffitt
Chief, Hydro Branch, AMC

VERIFIER: Harry R. Smith

Norfolk, Va.
Oct. 14, 1969

AMC PLOTTER NOTE TO EDAT
SURVEY H-9012

Positions on this survey have been verified and found to be correct except for changes listed on the attached sheet.

When these changes have been made, please furnish this office a sounding overlay.

Hugh L. Proffitt
Chief, Hydro Branch, AMC

GEOGRAPHIC NAMES H-9012

Name on Survey	A On chart no.	B On previous survey	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	
ARCHER ROCK									1
BODEN POINT									2
BODEN ROCKS									3
BRIMBLES									4
BROWN ISLAND									5
CASTLE ROCK									6
CAT ISLAND									7
CAT ISLAND CHAN.									8
CHAPPEL LEDGE									9
CONEY LEDGE									10
DOLLIBER COVE									11
DOLLIBER POINT									12
EAGLE ISLAND									13
ENDEAVORS INNER									14
ENDEAVORS OUTER									15
FLUEN POINT									16
GERRY ISLAND									17
GOOSEBERRY LEDGE									18
GORDAN ROCK									19
GRAYS ROCK									20
JACK POINT									21
KETTLEBOTTOM									22
LADYS COVE									23
LASQUE LEDGE									24
LITTLE HARBOR									25

GEOGRAPHIC NAMES

H-9012

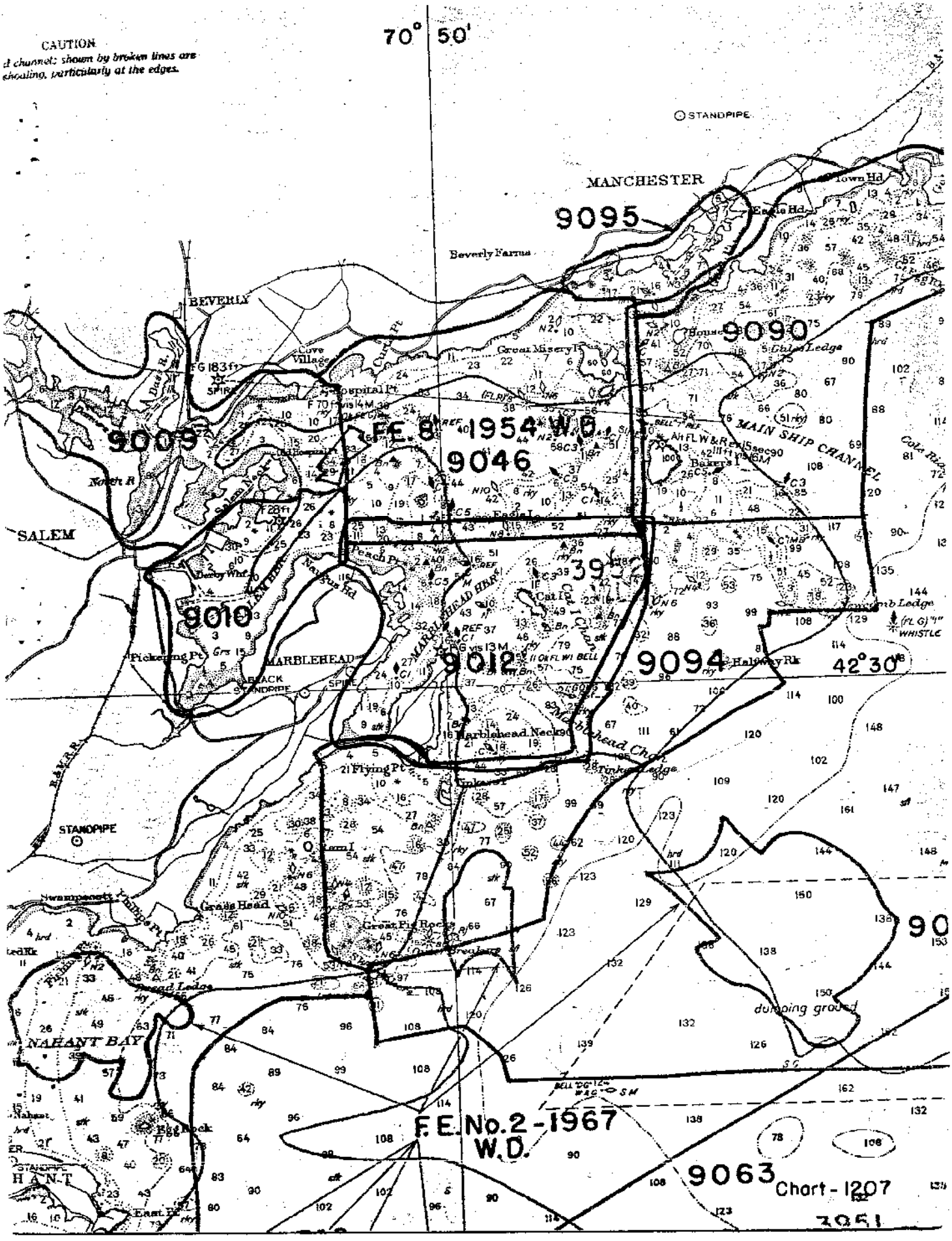
Name on Survey	A On Chart No.	B On Previous Survey No.	C On U.S. Quadrangle Maps	D From Local Information	E On Local Maps	F P.O. Guide or Map	G Rand McNally Atlas	H U.S. Light List	
Marblehead ✓									1
Marblehead Chan. ✓									2
Marblehead Harbor ✓									3
Marblehead Neck ✓									4
Marblehead Rock ✓									5
Martin Rock ✓									6
Massachusetts Bay ✓									7
Midchannel Rock ✓									8
Outer Point Rock ✓									9
Peach Point ✓									10
Pitman Rock ✓									11
Riverhead Beach ✓									12
Salem Sound ✓									13
Satan Rock ✓									14
Sellman Berth ✓									15
Skinner Head ✓									16
South Gooseberry I. ✓									17
Tom Moore Rock ✓									18
Triangle Rocks ✓									19
Volunteer Rock ✓									20
Wellman Ledge ✓									21
Williams Rock ✓									22
Back Beach									23
Crocker Park									24
Ft. Sewall									25

Approved
Chas. E. Harrington
Staff Geographer
14 March 1975

NOAA FORM 76-155, SUPERSEDES C&GS 197

Flying Point

U.S. G.P.O. 1972-769-565/516 REG. #6


CAUTION
d channel: shown by broken lines are
shoaling, particularly at the edges.
70° 50'
STANDPIPE
MANCHESTER
9095
Beverly Farms
BEVERLY
9090
9009
FE 8
1954
W.D.
9046
MAIN SHIP CHANNEL
SALEM
9010
9012
9094
MARBLEHEAD
42°30'
Marblehead Neck
Flying Pt
STANDPIPE
Great Pig Rock
NAHANT BAY
Egg Rock
F.E. No.2 - 1967
W.D.
9063
Chart - 1207
dumping ground

[illegible] Modified Review (Effective 4-21-75)

Review	✓	Remarks
1. Control and Shoreline (Review discussion satisfactory?)	✓	
A. T-sheets listed		12976 - T12977 (1965-73)
B. Check shoreline and topo features	✓	orange [illegible] - many ok [illegible]
C. Symbolization	✓	ok
D. Omission of features	✓	some
E. Harmony with hydro	✓	ledges extended [illegible]
F. Supplement with prior topo if necessary	✓	not necessary
2. Hydrography		
Sections A, B, and C adequately discussed in review?	✓	
3. Condition of Survey		
for items 2 and 3	✓	covered
A. Inspect smooth sheet block by block	✓	
(1) Curves	✓	incorrect in some places 90ft curve added
a. Brown when needed	✓	not used but needed
b. Charted curves	✓	90 ft curve added
c. Adequate inshore curves	✓	alright for most part
d. LWL not used where ledge is desired	✓	incorrect all over chart
B. Verify unsupported or questionable pinnacles	✓	
C. Inspect fathograms where interpretation is questionable (i.e., kelp or grass?) or other peculiarities (i.e., initial, phase, stylus length?)		ok
D. Cartographic symbols for clarity, correctness, proper annotation of offshore features	✓	
E. Description of prominent signals	✓	not done by verifier
F. Hand lettered notes proper; i.e., slanted or vertical	✓	~~not~~ added during review
4. Junctions		
A. Agreement of hydrography	✓	
B. Check soundings transferred during review	✓	some not transferred properly
C. Curve reconciliation in junctional areas	✓	inked junction but not accomplished

* Additional check list item for reviews dated prior

D. Year of junctional sheet and junction notes on smooth sheet ✓

(1) Compare verification dates of junctional surveys ✓

Comparison with Prior Surveys

A. Undetected depths or features to be retained? ✓ many brought forward

B. Bottom characteristics needed ✓ some brought forward

C. Soundings to supplement present survey if approp. ✓

D. Check accuracy of transfer of prior depths carried forward accomplished during rev

(1) Check prior survey records if soundings are retained ✓ done

6. Comparison with Chart

Proper chart numbers and current edition? ✓ 1207, 240, 241

A. Hydrography (adequately discussed in review?) ✓

B. Controlling depths (ditto) no channels

C. Aids to Navigation (ditto) OK

D. Charted info superseded by present survey or adequately disposed of in review furished

E. Check chart for items in conflict with present survey furished

7. Compliance with Instructions ✓

8. Additional Field Work ✓ recommendations made

9. (Separate sheet in revision) Items for Future Presurvey Review ✓

10. Nonreview Items

A. Check names after lettering

B. Adequacy of title

11. Nonmodified review item 1, Description of the Area

A. Discussion and location of survey adequate not needed

H-9012

Check junction between H-9012 and H-9094 - Statements in both reviews refer to other survey for discussion of junction. Make junction with H-9094 during review of H-9012 (written review, now reflects this).

Dates of photography and field edit are to be shown in review of hydro sheet for final reviewed photogrammetric manuscripts covering the same area.

Comment under Prior Survey Comparison - Pier from H-2200 shown on chart - no longer exists.

NOAA FORM 76-97
(2-72)
(PRES. BY HYDROGRAPHIC MANUAL, 6-94)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMIN.

VERIFIER'S REPORT

HYDROGRAPHIC SURVEY, H-9012 PE-5-2-68

INSTRUCTIONS - This form serves to identify items of a check list in verification together with items which are separately reported to the Reviewer. The form is not to be forwarded to the Reviewer. A report, which is prepared for the Reviewer, should identify items by number and letter and will be filed in the Descriptive Report until the survey is reviewed.

CL - Check List Items: should be checked as having been completed during the verification processes.

R - Report Item: This column refers to those items reported to the reviewer and is used to indicate the items discussed.

Part I - DESCRIPTIVE REPORT Note: The verifier should first read the Descriptive Report for general information and problems.	CL	R
1. The Descriptive Report was consulted, paragraphs checked if found satisfactory, and notations were made in soft black pencil regarding action taken. Remarks Required: -- None	X	
2. Soundings originating with the survey and mentioned in the Descriptive Report have been verified and checked in soft black pencil, including latitude and longitude, together with position identification. Remarks Required: -- None	X	
3. All reference to survey sheets mentioned in the Descriptive Report should include registry number and year. Remarks Required: -- None	X	
Part II - SHORELINE AND SIGNALS		
4. Source of shoreline signals Remarks Required: -- List all surveys a. Give earliest and latest dates of photographs T-12976, T-12977 b. Field inspection date Aug. 1965 c. Field Edit date none d. Reviewed-Unreviewed none	X	
5. The transfer of contemporary topographic information was carefully examined and reconciled with the hydrography. Remarks Required: -- Discuss remaining differences.	X	
6. The plotting of all triangulation stations, topographic stations and hydrographic signals has been checked and noted in processing stamp No. 42 on the smooth sheet. Remarks Required: -- None	X	
7. Objects on which signals are located and which fall outside of the high-water line have been described on the sheet. Remarks Required: -- List those signals still unidentified.	X	
Part III - JUNCTIONS Note: Make a cursory comparison preliminary to inking soundings in area of overlap.		
8. All junctions of contemporary or overlapping sheets were compared and overlapping curves were made identical. Remarks Required: -- None	X	
9. The notation in slanted lettering "JOINS H---- (19)" was added in colored ink for all verified contemporary adjoining or overlapping sheets. Those not verified are shown in pencil. Remarks Required: -- None	X	

Part III - JUNCTIONS (Continued)	CL	R
10. Junctions with contemporary surveys were satisfactory except as follows: Remarks Required: -- Consider conditions after adjustments have been made; note adjustments made. Make special notes of **Butt** junctions and areas which are **SUPERSEDED.**	X	
Part IV - VOLUMES		
11. All items affecting the plotting of the survey which are entered in the remarks columns of the sounding records were noted and check marked. In all cases appropriate action was taken and exceptions noted in the volumes. Remarks Required: -- None	X	
12. Condition of sounding records was satisfactory except as follows: Remarks Required: -- Mention deficiencies in completeness of notes or actions for the following: (a) rocks (b) line turns (c) position values of beginning and ending of lines (d) bar check or velocity correctors (e) time recording (f) notes or markings on fathograms (g) was reduction of soundings accurately done? (h) was scanning accurate? (i) were peaks at uneven intervals missed? (j) were stamps completed? (k) references to adjacent features	X	
Part V - MACHINE PLOTTING		
13. All positions verified instrumentally were check marked in color in the sounding records, and verifier initialed the processing stamp. Remarks Required: -- None	X	
14. The plotting of all unsatisfactory crossings was verified. Remarks Required: -- None	X	
15. All detached positions locating **critical** soundings, rocks, buoys, breakers, obstructions, kelp, etc., were verified and the position numbers are legible. Remarks Required: -- None	X	

Item	CL	R
Part V - PROTRACTING (Continued) **16.** The protracting was satisfactory except as follows: Remarks Required: -- Refers to protracting in general except for specific faults repeated often, or faults in control information, which required considerable replotting or adjustments.	X	
17. The protractor has been checked within the last three months. Remarks Required: -- Date of check, type of protractor and number.	X	
Part VI - SOUNDINGS **18.** All soundings are clear and legible, and critical soundings are a little larger than adjacent soundings. Remarks Required: -- None	X	
19. Sounding line crossings were satisfactory except as follows: Remarks Required: -- Discuss adjustments.	X	
20. The spacing of soundings as recorded in the records was closely followed; Remarks Required: -- None	X	
21. The scanning, reduction, spacing, plotting of questionable soundings have been verified. Remarks Required: -- None	X	
22. The smooth plotting of soundings was satisfactory except as follows: Remarks Required: — Refer to legibility, errors in spacing, and errors in numbers - but not to errors in scanning.	X	
Part VII - CURVES **23.** The depth curves have been inspected **before** inking. Remarks Required: -- By whom was the penciled curves inspected.	X	
24. The low-water line and delineation of shoal areas have been properly shown in accordance with the following: **a.** From T-Sheet in dotted black lines **b.** From soundings in orange **c.** Approximate position of sketched curve is dashed orange **d.** Approximate position of shoal area **not sounded** in black dashed Remarks Required: -- None	X	
25. Depth curves were satisfactory except as follows: (This statement should not refer to the manner in which the curves were drawn). Remarks Required: -- Indicate areas where curves could not be drawn completely because of lack of soundings. For some inshore areas a general statement is sufficient.	X	

Item	CL	R
Part VIII - AIDS TO NAVIGATION **26.** All fixed aids located together with those on the contemporary topographic sheets, have been shown on the survey. Remarks Required: -- Conflicts of any nature listed.	X	
27. All floating aids listed in the Descriptive Report should be verified and checked in soft black pencil, including latitude and longitude and position identification. Remarks Required: -- None	X	
Part IX - BOAT SHEET **28.** The boat sheet was constantly compared with the smooth sheet with reference to notes, position of sounding lines and supplemental information. Remarks Required: -- None	X	
29. Heights of rocks awash were correctly reduced and compared with topographic information. Remarks Required: -- Note excessive conflicts with topographic information.	X	
Part X - GENERAL **30.** All information on the sheet is shown in accordance with figures 82 and 83 in the Hydrographic Manual (Pub. 20-2). Remarks Required: -- None	X	
31. Unnecessary pencil notes have been removed from the sheet. Remarks Required: -- None	X	
32. Degree, minute values and symbols have been checked; also electronic distance arcs have been properly identified and checked on the smooth sheet. Remarks Required: -- None	X	
33. The bottom characteristics are adequately shown. Remarks Required: -- None	X	
Part XI - NOTES TO THE REVIEWER Rock elevation above MHW mistakenly shown in red instead of black should be left in red and a note added to smooth sheet RHS **34.** Unresolved discrepancies and questionable soundings.		
35. Notation of discrepancies with photogrammetric survey inserted in report of unreviewed photogrammetric survey or on copy.		
36. Supplemental information.		

Verified by	Date
Harry R. Smith (signature) Harry R. Smith	9-5-74

(3-25-63) NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9012

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
240	2-28-75	H. Ladden	~~Full~~ Part ~~Before~~ After Verification before Review Inspection Signed Via
13275			Drawing No. #25 critical corr's only
241	3-4-75	H. Ladden	~~Full~~ Part ~~Before~~ After Verification before Review Inspection Signed Via
13276			Drawing No. #18 critical corr's only
613-SC	3-4-75	H. Ladden	~~Full~~ Part ~~Before~~ After Verification before Review Inspection Signed Via
13274			Drawing No. #7 critical corr's only
1106	3-7-75	D.C. Cross	~~Full~~ Part ~~Before~~ After Verification before Review Inspection Signed Via
13260			Drawing No. #30 Critical corr's only.
1207	3-6-75	S.M. Hill	~~Full~~ Part ~~Before~~ After Verification before Review Inspection Signed Via
13267			Drawing No. 35 Critical Corr's only
13260	3-9-90	R Kennedy	~~Full Part Before~~ After Verification Added below Review Inspection Signed Via
			Drawing No. 39 Adequately applied
13267	4-16-91	D. Black	~~Full Part Before~~ After Verification ADEQUATELY BEFORE Review Inspection Signed Via
			Drawing No. 44
13276	6-22-94	John Barber	~~Full Part Before~~ After Verification Adequately Review Inspection Signed Via
			Drawing No. 27 Consider adequately appl'd - no further processing
13274'8'	6-22-94	John Barber	~~Full Part Before~~ After Verification Adequately Review Inspection Signed Via
			Drawing No. 20 Consider adequately appl'd thru chart 13275 13276 - no further processing
13275	6-23-94	John Barber	~~Full Part Before~~ After Verification Adequately Review Inspection Signed Via
			Drawing No. 36 Consider adequately appl'd - no further processing

FORM C&GS-8332 SUPERSEDES ALL EDITIONS OF FORM C&GS-975. USCOMM-DC 8958-P63