

9922

Diagrams 1222-4 & 1227-2

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic
Field No. MI-20-1-80
Office No..... H-9922

LOCALITY

State Virginia
General Locality Atlantic Ocean
Locality Cape Henry to Dam Neck

1980

CHIEF OF PARTY
CAPT. R.A. Trauschke

LIBRARY & ARCHIVES

DATE March 31, 1982

AREA 2

CHTS

80-12207

80-12208

80-12205A

80-12222

80-12221

80-12220

80-12200

*to sign off see
Records of Application*

HYDROGRAPHIC TITLE SHEET

H - 9922

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.
MI-20-1-80

State Virginia

General locality Delmarvanc, Atlantic Seaboard *Atlantic Ocean*

Locality Cape Henry to Dam Neck

Scale 1 : 20,000 Date of survey 22 Oct 1980 - ¹⁴ Nov 1980

Instructions dated 20 February 1980 Project No. OPR-D103-MI-80

Vessel NOAA Ship MT. MITCHELL (S-222) & Launches 1002 & 1004

Chief of party Captain Robert A. Trauschke

Surveyed by see remarks

Soundings taken by echo sounder, hand lead, pole Ross Model 5000 Fineline

Graphic record scaled by R.W., F.S., E.M., O.P., U.G.

Graphic record checked by R.W., F.S., E.M., O.P., U.G., Verification Branch (AMC)

Protracted by N/A Automated plot by Xynetics 1201 Plotter (AMC)
smooth sheet

Soundings ^{verified by} Verification Branch (AMC)
~~penciled by~~

Soundings in ~~X FATHOMS~~ feet at MLW ~~X METERS~~

REMARKS: LCDR JONES, LTJG SHEPARD, LTJG LONG, ENS. MOZGALA, ENS. ZABITCHUCK
ENS. HUMPHREY

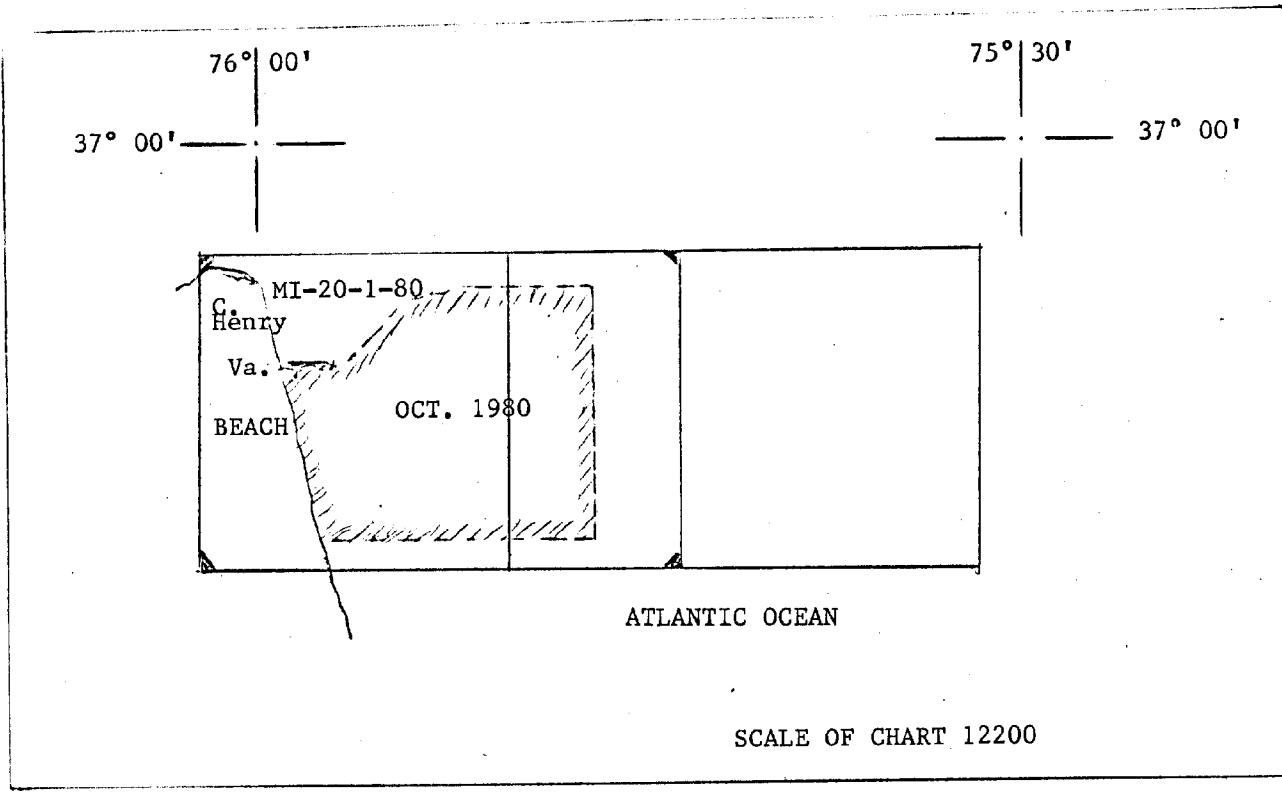
Changes in red ink made during verification

Misc data culled from the D.R. are filed with the survey records.

All times are based on GMT.

AWO15- 2/2/84 MJF

STANDARDS OPD 4-5-84



PROGRESS SKETCH
 HYDROGRAPHIC OPERATIONS
 NOAA SHIP MT. MITCHELL S-222
 ROBERT A. TRAUSCHKE, CAPT., NOAA
 COMMANDING OFFICER

OCTOBER 1980

SHEET 2 of 3

LEGEND

OCT.	NOV.	
219		LNM SOUNDING LINE (LAUNCH) (ELEC)
22		SNM SOUNDING AREA (LAUNCH) (ELEC)
26		LNM SOUNDING LINE (LAUNCH) (VIS.)
1		SNM SOUNDING AREA (LAUNCH) (VIS.)
661.5		LNM SOUNDING LINE (SHIP) (ELEC)
66		SNM SOUNDING AREA (SHIP) (ELEC)
2		NANSEN CAST (SAL./TEMP.)
35		BOTTOM SAMPLES

A. PROJECT

This survey was carried out in accordance with Project Instructions OPR-D103 MI/PE-80, Atlantic Seaboard Area Project, DELMARVANC phase issued 20 February 1980, and changes dated 27 March 1980; 8 May 1980; 23 June 1980; 12 August 1980; 15 August 1980.

B. AREA SURVEYED

This survey was conducted in the Atlantic Seaboard offshore of Cape Henry, Virginia. The limits of the survey are ^{very} roughly described by lines connecting the following points in a clockwise manner:

36° 48.8' N	76° 02.0' W
36° 56.3' N	75° 47.0' W
36° 56.3' N	75° 47.0' W
36° 46.5' N	75° 47.0' W

(Handwritten corrections: 73, 5 57.5, 76, 02.0, 75, 47.0, 75, 47.0)

This survey was conducted between 21² October 1980 (Julian Day 296⁶) and 14 November 1980 (Julian Day 319).

C. SOUNDING VESSELS

Soundings for the survey were obtained by the NOAA Ship MT. MITCHELL (VESNO 2220) and Survey Launches 1002 (VESNO 2225) and 1004 (VESNO 2223).

D. SOUNDING EQUIPMENT AND CORRECTIONS

The following equipment was used during the survey:

<u>EQUIPMENT, VESSEL NUMBER 2220</u>	<u>Serial Number</u>
Ross Model 5000 Fineline Depth Recorder	1050
Ross Model 4000 Transceiver	1050
Ross Model 6000 Digitizer	1087

<u>EQUIPMENT, VESSEL NUMBER 2223</u>	<u>Serial Number</u>
Ross Model 5000 Fineline Depth Recorder	1089
Ross Model 4000 Transceiver	1039
Ross Model 6000 Digitizer	1053

D. (continued)

<u>EQUIPMENT, VESSEL NUMBER 222⁵</u>	<u>Serial Number</u>
Ross Model 5000 Fineline Depth Recorder	3780
Ross Model 4000 Transceiver	1053
Ross Model 600 Digitizer	1039

All soundings obtained by the ship were taken with the skeg mounted transducer (antenna distance +32.0 M). All soundings obtained by the launches were taken with a transducer with an antenna distance of zero. All survey records were scanned by trained Survey Department personnel and checked by the officer in charge. Peaks and deeps considered significant that occurred between soundings were inserted and digitizing errors due to sea action were corrected on the electronic corrector tape.

Phase Calibration checks were made at frequent intervals and any necessary adjustments were made and noted in the sounding volume and on the fathograms. Any departures of the trace from the calibration due to phase differences were corrected during the scanning process.

Velocity corrections were obtained from one Nansen cast:

<u>Cast Number</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Date</u>
20-1	36°49.3'N	75°46.4'W	10/28/80

All velocity correctors were derived from this cast. Bar checks were taken as often as weather permitted and showed depth dependent variation with respect to the Nansen cast velocities. The Nansen cast velocities are assumed to be the more accurate and hence were used for generating the velocity correctors. The tables and printouts of velocity tapes explaining how sound velocities were derived are included in Appendix D.

See Verification Report, section 4.6. No bar checks taken on pres. survey.

Transducer depths as a function of ship draft readings were verified during the 1979-80 drydocking. A copy of this report is included.

A draft of 14.0 feet was applied to all soundings taken by the MT. MITCHELL during the on-line process. With the skeg transducer being 17.5 feet forward of the after draft marks, the transducer corrections were determined from draft readings taken at the beginning and end of each trip. The applied draft corrector for the ship was determined to be 0.0 feet for the period of this survey.

A draft correction of 1.6 feet was applied to all soundings taken by the launches during the on-line process and the smooth sheets. Daily changes in draft for the launches were insignificant.

Settlement and squat correctors for the ship were determined on 12 June 1978 at Galveston (Inner Bar Channel), Texas. No significant equipment changes which might have altered the 1978 results have been made to the time of this survey. Settlement and squat correctors for VESNO 2223 and VESNO 2225 were determined on 30 September 1980 in the harbor of

975

Little Creek Naval Amphibious Base. Copies of the field data and the correctors versus vessel RPM's are included in the survey support data. These correctors are incorporated in the TC/TI tapes with printouts of these tapes included in Appendix D.

This survey was conducted using predicted tides based on daily prediction of the Reference Station Hampton Roads (Sewells Point, VA) (#2353) and applied to the off-line data only. The on-line survey was run without tide correctors. It should be noted that predicted tides do not, historically, correspond well with actual tides in this area; thus, all junctions should be re-evaluated after smooth tides are applied. A copy of the request for actual tides in the survey area is included in Appendix B of this Report.

E. HYDROGRAPHIC SHEETS

This survey was plotted on 4 paper field sheets by the MT. MITCHELL HYDROPLOT System.

<u>Number of Sheets</u>	<u>Type</u>	<u>Skew</u>
4	Basic Survey	0,21,54

This survey was plotted off-line using an electronic corrector tape. Soundings on the field sheets are corrected for draft, predicted tides, initial and digitizing errors, and sound velocity. Sheets are not corrected for smooth tides or settlement or squat. The final smooth sheet will be plotted at the Atlantic Marine Center, Norfolk, VA. All field records and the following tapes have been forwarded to the Atlantic Marine Center.

- Master Hyperbolic Data Tapes
- Electronic Corrector Tapes
- Velocity Correction Tapes
- Parameter Tapes
- ASCII Signal Tapes
- TC/TI Tapes

F. CONTROL STATIONS

HYDROTRAC electronic control stations used for this survey were:

<u>Signal # and Name</u>	<u>Latitude</u>	<u>Longitude</u>
100; Gravity (slave 1)	36°40'31.453"N	75°54'56.471"W
200; Battery Cramer(Master)	36°55'04.200"N	75°59'44.489"W
300; H-8-VA-78 (slave 2)	37°51'46.270"N	75°22'03.968"W

F. (CONTROL STATIONS continued)

All stations were located by personnel from the Operations Division, Atlantic Marine Center. Electronic control stations were erected and maintained by ship's personnel.

The circle calibration station used for this survey was:

<u>Number</u>	<u>Signal Name</u>	<u>Latitude</u>	<u>Longitude</u>
29	Chesapeake Light Tower	36°54'16.158"N	75°42'47.123"W

Visual calibration stations used for this survey were:

<u>Number</u>	<u>Station Name</u>	<u>Latitude</u>	<u>Longitude</u>
03	Cape Henry Light House 1887	36°55'34.335"N	76°00'27.216"W
13	Cape Henry Light House, Old	36°55'32.330"N	76°00'30.516"W
14	Cavalier Hotel Cupola	36°52'08.381"N	75°59'02.012"W
30	Parcel C, Tower A	36°53'35.785"N	75°59'18.153"W

G. HYDROGRAPHIC POSITION CONTROL

An Odum offshore HYDROTRAC system operating at a frequency of 1718.590 KHz in hyperbolic mode was used to provide positioning control for this survey. The equipment serial numbers used aboard the vessels are as follows:

<u>Name</u>	<u>Equipment</u>	<u>Serial Number</u>
VESNO 2220	Receiver Model 700	328
	Sawtooth Recorder	8224
	Interface Model 900	103
	Power Supply	101
VESNO 2223	Receiver Model 700	327
	Sawtooth Recorder	13
	Interface Model 900	102
	Sola Power Supply	107
VESNO 2225	Receiver Model 700	326
	Sawtooth Recorder	A-175
	Interface Model 900	101
	Sola Power Supply	103

The equipment serial numbers used at the shore stations are as follows:

<u>Station</u>	<u>Equipment</u>	<u>Serial #</u>
100 (slave 1)	Slave Drive Unit	226
	Linear Transmitter	536
	Coupler	131
	Power Supply	752

G. (Equipment Serial Numbers Used At Shore Station Continued)

<u>Station</u>	<u>Equipment</u>	<u>Serial #</u>
200 (Master)	Master Drive Unit	122
	Linear Transmitter	537
	Master Coupler	130
	Power Supply	754
300 (slave 2)	Slave Drive Unit	214
	Linear Transmitter	538
	Coupler	133
	Power Supply	751

HYDROTRAC calibration was accomplished 3 times by the circling method, described on page 4-28 of the Hydrographic Manual, using Chesapeake Light Tower (Signal 29). The HYDROTRAC calibrations were checked once off Virginia Beach using a three-point sextant fix and comparing observed HYDROTRAC lane values with computed values obtained from the HYDROPLOT calibration Program RK 561. Only those fixes with an inverse of less than 5.0 meters were used on these calibrations.

HYDROTRAC calibration for VESNO 2223 and VESNO 2225 was accomplished off Virginia Beach using three-point sextant fixes and HYDROPLOT calibration Program RK 561 before and after hydrography. For plotting purposes, the final partial correctors were derived by averaging the morning and afternoon partials. While obtaining bottom samples on JD 304 and JD 305, VESNO 2223 calibrated by circling separation zone buoy "CBC" and comparing the average observed lane count to the average previously observed lane count.

Whenever using HYDROTRAC, the whole lane count was monitored by comparing the navigational interface readout with a running count on the sawtooth recorder. Any lane jumps detected on-line were corrected by entering the appropriate whole lane correctors into the HYDROPLOT controller as soon as possible. Off-line, the correctors were applied to all affected soundings via the electronic corrector tape. On JD 301, the HYDROPLOT controller on VESNO 2223 malfunctioned and caused what appeared to be lane jumps on the Master printout; although, the sawtooth recorder lane count showed no lane jumps. The problem was subsequently corrected and the proper correctors applied off-line.

On JD 319, a lane jump occurred while VESNO 2225 was running shoreline holidays but was laying to for a lunch break. One lane was added to channel P2 and remaining shoreline soundings were run. P1 appeared to have also lost one lane at the same time. The final calibration proved that only P2 lost a lane.

H. SHORELINE

Sounding lines were run parallel to the shore at the inshore limit of safe navigation of the sounding vessels. Several more lines were run farther offshore to allow a safe turning margin for the launches running main scheme lines toward the shore.

The shoreline details were transferred to the field sheets in blue from a blow-up of Chart 12207 because no photographic manuscripts were available and a Field Edit was not required. See Verification Report, Section 2. b.
Shoreline on the smooth sheet is a product of S.I. digitized from 1980 NOS color photos.

I. CROSSLINES

Crosslines were run approximately 60° to 90° to the main scheme sounding lines. Crossline mileage amounted to 8.3% of the main scheme lines. 95% of all crossline soundings agree within ± 1 feet of the main scheme soundings with the remaining 5% agreeing within ± 2 feet.
(predicted tides)
With final tides applied, crosslines are in agreement.

J. JUNCTIONS See Verification Report, section 5.

This survey junctions with the following surveys:

<u>Survey Number</u>	<u>Scale</u>	<u>Date</u>	
H-9098	1:10,000	1969*	H-9959 (1981) East Junction
H-9099 (prior survey)	1:10,000	1969*	H-9919 (1980) - N.E. Junction
PE-10-5-80, H-9905 (H-9701)	1:10,000 1:5,000	1980- 1977	N.W. - Butt Junction (Rudee Inlet Junction) H-9948 (1981) South Junction

The junctions between surveys H-9098 and H-9099 and this survey were good with 40% of all soundings agreeing with 1-2 feet, 50% to within 2-3 feet and 10% to within 3-4 feet. In all cases this survey soundings are shoaler than the previous surveys. **These are not junctional surveys. H-9098 was butt junctioned because of sdg. conflict. H-9099 is a prior survey.*

The comparison to H-9905 was made with Field Data only. The junction is good with 90% of all soundings agreeing to within 0-2 feet and 10% to within 2-3 feet with this survey sounding shoaler than H-9905.

K. COMPARISON WITH PRIOR SURVEYS

The following prior surveys were within the area of this survey:

<u>Survey Number</u>	<u>Scale</u>	<u>Date</u>
H-4286	1:40,000	1922
H-6595	1:40,000	1940

Comparison with H-4286 is good with all soundings agreeing within 1-3 feet, with this survey being shoaler, except in the dredge spoil dumpsite. H-6595 agrees within 1-3 feet, with this survey shoaler.
 See Verification Report, section 6

JPS
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 JPS

L. COMPARISON WITH THE CHART

<u>Chart Number</u>	<u>Edition</u>	<u>Date</u>	<u>Scale</u>
12207	14th	May 1979	1:80,000

Comparison with the chart is good, with 85% of the soundings agreeing to within ± 3 feet and the rest within ± 4 feet, except in the dredge spoil area where this survey has a least depth 11 feet shoaler than charted. See Verification Report, section 7.

Development #1:

X In the vicinity of lat. $36^{\circ}48.5'$, long. $75^{\circ}53.8'$ approx. 0.8 nm by 2.6 nm in area oriented N-S.

VESNO 2220 investigated the dredge spoil area as charted and developed the area with 100-meter line spacing. The area was found to be shoaler than charted with a least depth of 30^3 feet at the North end. At the South end there is a uniform slope across the spoil area. It is recommended that the area be retained as charted, but the charted depths should be replaced with current soundings. See Verification Report, section 6.a.

Position #s 879 to 1026 *chart depths in this area as shown on the pres. survey.*

Development #2

(source - 1957 wreck list) - On Chart 12221, 50th Ed., 7/18/81

Presurvey review (PSR) Item # 108 is a non-dangerous wreck, limited investigation Item (Latitude: $36^{\circ}50'24''$; Longitude: $75^{\circ}49'12''$). *Area is cleared to 48ft. on H-9871(1976) WD (Wk was not hung)*

VESNO 2220 investigated this area and developed the area with 100-meter line spacing parallel with the main scheme soundings lines. No obstruction was noted on the fathogram and the area was not developed further. It is recommended that it be removed from the chart. *Do not concur, chart wreck from 1957 wk. List.*

Development #3

PSR Item #102 is a non-dangerous wreck, limited investigation Item (Latitude: $36^{\circ}54'09''$; Longitude: $75^{\circ}51'30''$). VESNO 2220 investigated this area and developed the area with 100-meter line spacing parallel to the main scheme sounding lines. No indication of the obstruction was indicated on the fathogram and the area was not developed further. It is recommended that this item be removed from the chart. *Do not concur, retain as charted on N.C. 12221*

Development #4

(Item #5 on H-9871WD (1976))

PSR Item 100 is a non-dangerous wreck, limited investigation Item (Latitude: $36^{\circ}52'00''$; Longitude: $75^{\circ}55'00''$). VESNO 2220 investigated this area and developed the area with 100-meter line spacing parallel to the main scheme sounding lines. No indication of the obstruction was noted on the fathogram and the area was not developed further. It is recommended that this item be removed from the chart. *See Verification Report, section 6.b, page 6, (item 4)*

Presurvey Review Item #101 is a ^{charted subm} dangerous wreck, limited investigation Item (Latitude: $36^{\circ}50'12''$; Longitude: $75^{\circ}58'12''$). VESNO 2223 was unable to investigate the area with a fathometer because of the shoal water and a fish trap which was set up over the area. The wreck is reported to be in very shallow water and visible, but no visible indication of the wreck was observed by the personnel on VESNO 2223 and the area was unable to be investigated further. It is recommended that it be charted *concur* as a submerged dangerous wreck. *There was a privately maintained buoy in the area.*

See Section XI of this report *for buoy data.*

M. ADEQUACY OF THE SURVEY *See Verification Report*

This survey is considered completed and adequate to supersede prior surveys for charting.

N. AID TO NAVIGATION

A series of floating aids to navigation marking the South traffic separation zone were located in the following positions:

<u>Designation</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Light Characteristics</u>	<u>Position</u>
✓ CB <i>whistle</i>	36°51'21"N	75°50'56"W	GP FL (4) 20 Sec	6443
✓ CBA <i>Bell</i>	36°52'37"N	75°52'40"W	FL 4 Seconds	6442
✓ CBA <i>B Gong</i>	36°53'45"N	75°54'11"W	FL 10 Seconds	6444
CBC <i>Bell</i>	36°54'46"N	75°55'38"W	GP FL (4)	6445

*L. L. Vol. 1
1980
p. 17*

These buoys are white with orange vertical stripes. Buoys "CBA" and "CBC" are equipped with bells, buoy "CBB" is equipped with a gong, and "CB" with a whistle. *1980 CGLL lists these buoys as B&W vertical stripes. 1981 CGLL lists these same buoys as orange & white horizontally banded. Compiler please check with U.S.C.G.*

A floating aid to navigation was located at Latitude: 36°55'02"N and 75°58'00"W (Pos 6446). The aid is a black can buoy with the designation '1' and is not lighted. *166 L.L. 1980 Vol. 1 p. 309*

A floating aid to navigation was located at Latitude: 36°50'09"N and 75°58'10"W (Pos 6476, 6477). The aid is a white cylindrical buoy marked with an orange diamond and the word "DANGER". *(late 1980s)* The buoy is 1.5 feet high, is not lighted and is privately maintained. The buoy is in the vicinity of PSR Item 101 but no indication of the wreck was observed. The buoy is anchored in 5.2 feet of water (see section "L" above). *(not found in USCGLL) considered to mark the ch'd wk.*

A buoy described as orange float buoy (pos. 6476, 6477) Lat. 36°50'46.31", Long. 75°58'19.02" was located above. This is considered to mark the subm. experimental sand trap placed by "VIMS" and erroneously ch'd as a bk w. in ruins, visible at MHW.

O. STATISTICS

	<u>Ship</u>	<u>Launch</u>	<u>Total</u>
Linear Nautical Miles of Hydrography	562.1	155.5	717.6
Linear Nautical Miles of Crosslines	59.1	26.5	85.6
Linear Nautical Miles of Developments	62.5	-----	62.5
Total Linear Miles of Hydrography	683.7	182.0	865.7
Total Miscellaneous Miles	314.5	190.5	505
Total Miles Run	998.2	372.5	1370.7
Square Miles of Hydrography	-----	-----	92.66
Total Number of Positions	2282	740	3022
Nansen Casts	1	0	1
Bottom Samples	145	40	185

2/25

P. MISCELLANEOUS

On JD 301 at 232000 (Pos 804) the Master HYDROTRAC station (Sta 200) at Fort Story went off the air. The station was getting power from a nearby building and the power was inadvertently secured sometime during the day and the storage batteries supplied power until 232000. The watch at the Explosive Ordinance Disposal Building was contacted and power was restored. VESNO 2220 then recalibrated by circling Chesapeake Light Tower and continued with operations.

On the smooth field sheets there is 1-2 foot difference at the junction between ship and launch work. This difference is attributed to the errors in predicted tides and should be re-evaluated after smooth tides have been applied. *appear reasonable*

The Marigram from the Chesapeake Bay Lighthouse Tide Gage (sta. 260-0000 re-established for the period of the survey), was not annotated after the original starting time (1230 E.S.T. 22 October 1980, Julian Day 296). The clock ran until JD 301 when from a slash on the Marigram, it appears that the clock was rewound. The clock then ran until it stopped around 0500 12 November 1980, JD 317, a total of 22 days. It appears that the clock was rewound during the 5th day (JD 301) and at least one other undetermined time due to the length of the time it ran. At the completion of the survey, the gage was removed from the light tower and returned to the MT. MITCHELL, where the clock was tested. The clock was fully wound and allowed to run at similar operating conditions. The clock proved to be quite accurate, gaining 3-4 minutes in a 6-day span. The period of hydrography was 16 days (JD 296-312), excluding bottom samples and JD 319 when VESNO 2225 filled in holiday in the shoreline hydrography judging from the test, the clock would have gained approximately 10 minutes over the 16-day span.

The Marigram is deemed adequate for this survey as a tidal range record. Hourly heights were scaled from the Marigram but no attempt was made to adjust the time. The proper scale paper was unavailable, so 0-20' paper was used in a 0-10' gage.

Many problems were encountered that made observation of the tide gage very difficult. The Coast Guard was in the final stage of fully automating the light and removing all personnel from the light. Arrangements were made for the Coast Guard to observe the gage while they were still stationed on the Lighthouse with the idea that personnel from the MT. MITCHELL would check the gage as often as possible. Because of bad weather, no observations could be made by the MT. MITCHELL while the Light Tower was manned and the Coast Guard observer failed to annotate the records as instructed. The MT. MITCHELL planned to observe the gage when the Lighttower was unmanned, but for security reasons, the Coast Guard would not supply a key that would allow access to the tower and the gage.

P. (Miscellaneous continued)

The existing tubing and orifice was used when the gage was re-established and there is a possibility that the orifice is partially plugged, judging from the trace. The condition of the orifice was not checked, but care was taken not to over-dampen the trace when the gage was started.

O. RECOMMENDATIONS

None

R. AUTOMATED DATA PROCESSING

The following HYDROPLOT Programs were used to acquire and process the survey data:

RK 110	HYPERBOLIC Real Time Plot	1/30/76
RK 201	Grid, Signal and Lattice Plot	4/18/75
RK 210	HYPERBOLIC Non-Real Time Plot	1/15/76
RK 300	Utility Computations	2/05/76
RK 330	Data Reformat Check	5/04/76
RK 360	Electronic Corrector Tape Abstract	2/20/76
RK 500	Predicted Tide Generator	11/10/72
RK 530	Velocity Correction Computations	5/10/76
RK 561	IH/R Geodetic Calibration	5/19/76
RK 602	Extended Line Oriented Editor	5/20/75

S. REFERENCE TO REPORTS

None

APPROVAL SHEET

The field work on this Hydrographic Survey was under my daily supervision. The boat sheet and records have been reviewed and approved by me.



CAPT NOAA
Commanding Officer

Prepared and submitted by: James Long
James Long, LTJG, NOAA

H-9922

DEL MARVANC - CHES. BAY

OPR- D103 - MI - 80

MASTER SIGNAL NOUN NAME

29 OCT 80

SIGNAL NAME TAPE

STA. #	NAME
001	FEN, 1960
002	LITTLE CREEK, 1929
003	CAPE HENRY LIGHTHOUSE 1887
004	LYNNHAVEN DAY BEACON #2
005	CAPE HENRY LIGHTHOUSE ECC. SW (DEL NORTE STA.)
006	H-51-VA-80
007	H-52-VA-80
008	H-53-VA-80
009	H-54-VA-80
010	H-55-VA-80
011	SHORE DRIVE STAND PIPE
012	H-50-VA-80
013	CAPE HENRY LIGHTHOUSE, OLD
014	CAVALIER HOTEL CUPOLA
015	LITTLE CREEK AMPHIB BASE TANK
016	LITTLE CREEK NAD DESERT COVE TANK
017	LITTLE CREEK NAV. AMPH. BASE TANK
018	H-6-VA-77 (ISLAND #4)
019	2-75 RAYDIST (ARGO)
020	CAPE CHARLES LIGHT
021	OCEAN VIEW TANK
022	BRIDGE TUNNEL CALIBRATION POINT
023	CAPE CHARLES 771ST AN/FPS N
024	" " " " S
025	H-56-VA
026	FISH ISLAND SHORAN
027	" " TANK
028	" " TOWER
029	CHESAPEAKE LIGHT TOWER
030	PARCEL C TOWER A (LOOKOUT TOWER) USE, 1939
031	DAM NECK MILLS NAVY TANK G-10217
032	VIRGINIA BEACH MUNICIPAL TANK G-10217
100	SANDBRIDGE HYDROTRAC SITE
200	BATTERY CRAMER (FT. STORY) HYDROTRAC SITE 1980
300	CHINCOTEAGUE HYDROTRAC SITE

Stations lined out not used on this survey.

H-9922

DEL MAR VANC - CHES. BAY

OPR - D103 - MI - 80

MASTER SIGNAL LIST

29 OCT 80

001	7	37	05	36243	075	58	17556	250	0050	000000
002	7	36	55	57125	076	10	35961	250	0070	000000
003	3	36	55	34335	076	00	27216	250	0050	000000
004	3	36	54	58985	076	05	23774	139	0000	000000
005	4	36	55	34302	076	00	27323	250	0050	000000
006	6	36	55	49332	076	01	03347	250	0001	000000
007	6	36	55	49573	076	01	54070	250	0000	000000
008	6	36	55	31272	076	02	39211	250	0000	000000
009	6	36	54	59010	076	03	32751	250	0000	000000
010	6	36	54	30153	076	05	51095	250	0000	000000
011	6	36	54	17009	076	07	14013	139	0000	000000
012	6	36	55	14934	075	59	46481	250	0001	000000
013	6	36	55	32330	076	00	30516	139	0000	000000
014	6	36	52	08381	075	59	02012	139	0000	000000
015	3	36	55	06190	076	11	22544	139	0000	000000
016	3	36	55	14382	076	09	42063	139	0000	000000
017	3	36	54	31740	076	08	53000	139	0000	000000
018	3	37	02	44530	076	03	46565	250	0000	000000
019	3	36	55	49585	076	01	01393	250	0000	000000
020	3	37	07	22007	075	54	24576	250	0000	000000
021	3	36	56	51663	076	15	33886	250	0000	000000
022	3	36	59	51427	076	05	59605	250	0000	000000
023	3	37	08	03976	075	57	04192	250	0000	000000
024	3	37	08	02246	075	57	04291	250	0000	000000
025	3	37	01	26366	076	17	49680	250	0000	000000
026	3	37	05	51122	075	58	45459	250	0000	000000
027	3	37	06	04124	075	58	43436	250	0000	000000
028	3	37	05	57891	075	58	45131	250	0000	000000
029	3	36	54	16158	075	42	47123	139	0039	000000
030	3	36	53	35785	075	59	18153	139	0033	000000
031	3	36	46	13694	075	57	51981	139	0040	000000
032	3	36	50	31980	075	59	23523	139	0040	000000
100	4	36	40	31453	075	54	56471	250	0004	171859
200	4	36	55	04200	075	59	44489	250	0004	171859
300	4	37	51	46270	075	22	03968	250	0004	171859

LANDMARKS FOR CHARTS

All charted landmarks were evaluated from sea and were found to be adequate. Landmarks with exact geographic positions were used for the calibration of electronic positioning equipment. This, in effect, verified the position of those landmarks. *See Verification Report.*

APPENDIX "I"

VELOCITY CORRECTION TABLE OPTIONS:

- 0) NO TABLE
- 1) IN FEET
- 2) IN FATHOMS
- 3) IN METERS

1
DRAFT = 14.0

Ship

ACTUAL DEPTH (SURFACE) MINUS VELOCITY CORRECTION (FT)	VELOCITY CORRECTION (FT)
0001.64	0000.00
0003.28	0000.00
0004.92	0000.00
0006.56	0000.00
0008.20	0000.00
0009.84	0000.00
0011.48	0000.00
0013.12	0000.00
0014.74	0000.03
0016.32	0000.08
0017.90	0000.14
0019.49	0000.20
0021.07	0000.26
0022.65	0000.31
0024.24	0000.37
0025.82	0000.43
0027.40	0000.49
0028.98	0000.54
0030.57	0000.60
0032.15	0000.66
0033.73	0000.72
0035.32	0000.77
0036.90	0000.83
0038.48	0000.89
0040.07	0000.95
0041.65	0001.00
0043.23	0001.06
0044.81	0001.12
0046.40	0001.17
0047.98	0001.23
0049.56	0001.29
0051.15	0001.35
0052.73	0001.41

0054.31
0055.89
0057.48
0059.06
0060.64
0062.23
0063.81

0001.46
0001.52
0001.58
0001.64
0001.69
0001.75
0001.81

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

CORRECTIONS IN FEET

VESNO: 2220

NOAA FORM 75-21
(10-72)

U.S. DEPARTMENT OF COMMERCE
NOAA
NATIONAL OCEAN SURVEY

VELOCITY CORRECTIONS

Ship NOAA Ship MT. MITCHELL

Captain R. A. Trauschke Comdg.

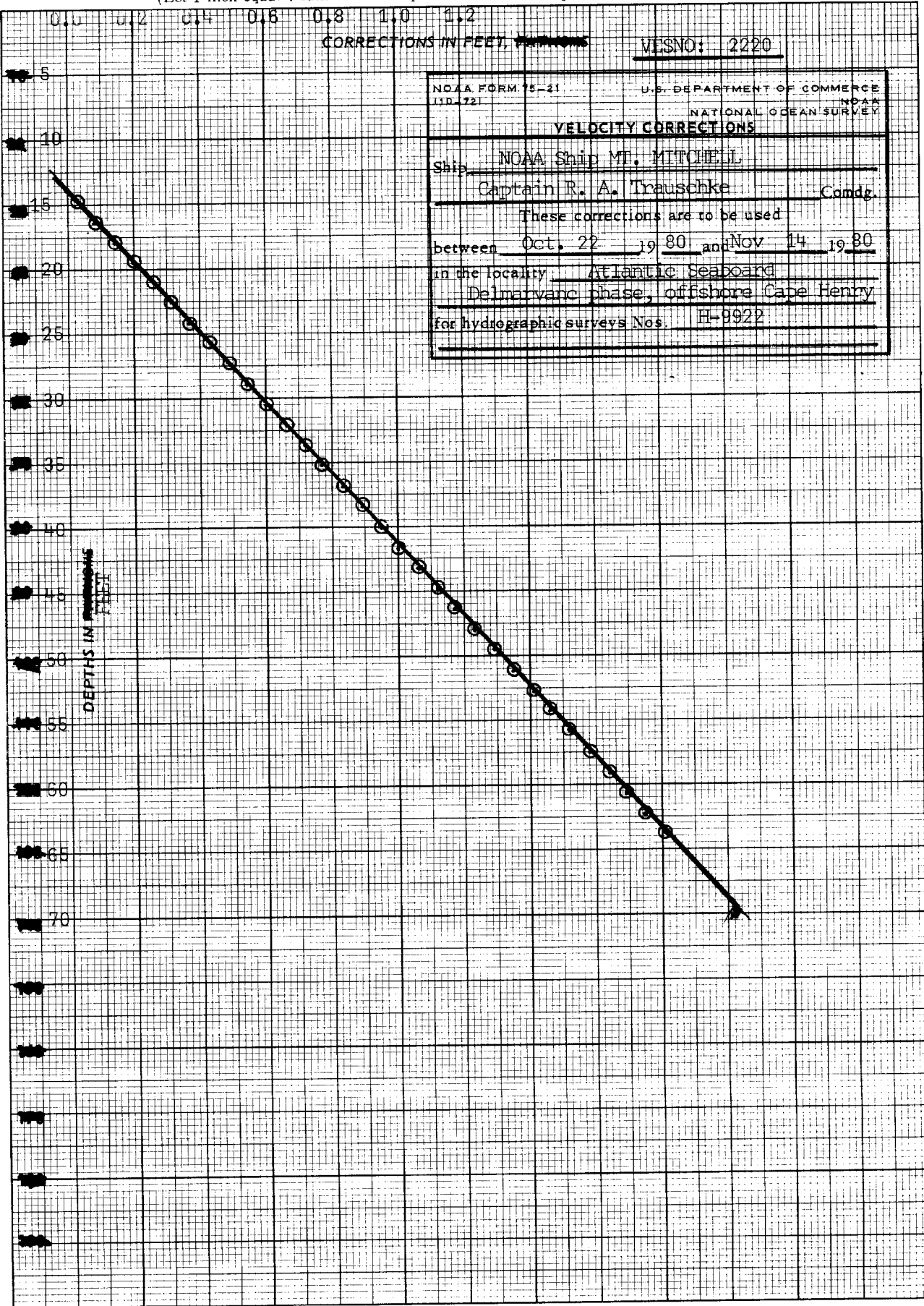
These corrections are to be used
between Oct. 22 1980 and Nov 14 1980

in the locality Atlantic Seaboard
Delmarvic phase, offshore Cape Henry

for hydrographic surveys Nos. H-9922

(For deep water, add a 0 to these figures)

DEPTHS IN FATHOMS
FEET



VELOCITY CORRECTION TABLE OPTIONS:

- 0) NO TABLE
- 1) IN FEET
- 2) IN FATHOMS
- 3) IN METERS

1
DRAFT = 1.6

Launches

ACTUAL DEPTH (SURFACE)
MINUS VELOCITY
CORRECTION
(FT)

VELOCITY
CORRECTION
(FT)

0001.64	0000.00
0003.22	0000.06
0004.81	0000.12
0006.39	0000.17
0007.97	0000.23
0009.55	0000.29
0011.14	0000.35
0012.72	0000.40
0014.30	0000.46
0015.89	0000.52
0017.47	0000.58
0019.05	0000.63
0020.64	0000.69
0022.22	0000.75
0023.80	0000.80
0025.38	0000.86
0026.97	0000.92
0028.55	0000.98
→ 0030.13	0001.03
0031.72	0001.09
0033.30	0001.15
0034.88	0001.21
0036.47	0001.26
0038.05	0001.32
0039.63	0001.38
0041.21	0001.44
0042.80	0001.49
0044.38	0001.55
0045.96	0001.61
0047.55	0001.67
0049.13	0001.72
0050.71	0001.78
0052.29	0001.84

0053.88
0055.46
0057.04
0058.63
0060.21
0061.79
0063.37

0001.90
0001.95
0002.01
0002.07
0002.13
0002.18
0002.24

0.0

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

CORRECTIONS IN FEET ~~XXXXXXXX~~ VESNO: 2223, 2225

NOAA FORM 75-21
(10-73)

U.S. DEPARTMENT OF COMMERCE
NOAA
NATIONAL OCEAN SURVEY

VELOCITY CORRECTIONS

Ship: NOAA Ship MT. MITCHELL

Captain R. A. Trauschke

Comdg.

These corrections are to be used

between Oct. 22, 1930 and Nov. 14, 1930

in the locality Atlantic Seaboard

Delmarvanc phase, offshore Cape Henry

for hydrographic surveys Nos. H-8922

(For deep water add a 0 to these figures)

DEPTHS IN FEET



SETTLEMENT AND SQUAT
NOAA SHIP MT. MITCHELL 1980 FIELD SEASON

Settlement and squat tests were run for NOAA Ship MT MITCHELL launches 1004, 1002 and the Monark (Vessel #2223, 2225 and 2227 respectively) on 30 September 1980 from Pier 56 at the Naval Amphibious Base, Little Creek Virginia. Corrections were determined with a Zeiss Ni2 level (Serial Number 142936) positioned at the end of the pier and a Philadelphia rod positioned directly above the transducer on the port and starboard sides of each launch. In vessel 2227, the leveling rod was positioned amidships on the centerline.

The tide level was observed before and after each vessel was tested. Observations on the tide level were taken from the tide gage station (#863-8776) on Pier 1 (Special Warfare Piers), NAB, Little Creek. During the first test with vessel 2227, no tidal change was observed. During the second test with vessel 2223 and the third test with vessel 2225 changes in observed water level readings were +0.5ft and +0.2ft respectively. Corrections for water level differences were applied to the calculations for each launch.

Seven sets of high and low rod readings were recorded for each launch at each speed (one set on the port side, one set on the starboard side), and the average reading of each set was then calculated. The final corrector was determined by taking the mean of the averages of both sets. A maximum difference of 0.2ft was observed between high and low readings. The distance for the sightings was approximately 60-100 meters from the pier.

Readings from the leveling rod were taken on vessels 2223 and 2225 as each launch passed the pier at 600, 1200, 1800, 2000, 2200 and 2400 rpms. For vessel 2227 readings were taken as the vessel passed the pier at 800, 1400 and 2000 rpms. Measurements were also made with each vessel laying to (before and after the tests). All launches carried a crew of three, full fuel tanks, and all hydrographic survey equipment normally used on each vessel.

Attached is an abstract of the data obtained including a graph for each vessel's draft corrections (feet) versus speed (engine rpms).

Respectfully submitted,

Marlene Mozgala

Marlene Mozgala
Ensign, NOAA

SETTLEMENT AND SQUAT CORRECTIONS

MOUNT MITCHELL 1980 FIELD SEASON

RPMS	JENSEN #1004 VESNO 2223	JENSEN #1002 VESNO 2225	MONARK VESNO 2227
0	---	---	---
500	+0.05	0.0	+0.005
600	+0.05	0.0	+0.009
700	+0.06	+0.01	+0.014
800	+0.06	+0.02	+0.02
900	+0.07	+0.04	+0.03
1000	+0.08	+0.05	+0.04
1100	+0.11	+0.07	+0.05
1200	+0.14	+0.10	+0.07
1300	+0.18	+0.12	+0.08
1400	+0.20	+0.14	+0.10
1500	+0.21	+0.16	+0.11
1600	+0.21	+0.18	+0.13
1700	+0.19	+0.20	+0.15
1800	+0.17	+0.21	+0.16
1900	+0.13	+0.19	+0.18
2000	+0.08	+0.12	+0.21
2100	+0.03	+0.05	
2200	-0.03	-0.03	
2300	-0.09	-0.13	
2400	-0.15	-0.23	

FIELD TIDE NOTE

Field tide reduction of soundings were based on predicted tides from Hampton Roads, VA, (Sewells Point), corrected to area per Project Instructions and were interpolated on a PDP8/E Computer utilizing program AM500. All times of both predicted and recorded tides are GMT.

The number and type of tide gages installed, their geographic locations, dates of installation/removal, leveling, plane of reference and period of operation are appended to this note, along with a copy of a letter to C331 requesting verified hourly heights of tides from gages listed in this report.

Contact with respective tide gage observers was made in person by Mt. Mitchell personnel upon arrival in the project area, There after, observers were contacted during inport periods to ascertain the status of the respective gages.

The respective gages reportedly operated properly during this project, with any exceptions listed under "Remarks" on the appended tide gage sheets.

APPENDIX "B"

FIELD TIDE NOTE
TIDE GAGE REPORT

NOS TIDE TABLE NUMBER: _____ TIME MERIDIAN 075^o W
GEOGRAPHIC LOCALE: Chesapeake Light Tower, offshore Ches. Bay Entrance
NAME: Chesapeake Light Tower STATION NUMBER: 260-0000
LATITUDE: 36° 54.3' N, LONGITUDE: 075° 42.8' W
TYPE OF GAGE: ADR, BUBBLER, OTHER (_____)
PLANE OF REFERENCE: MLW, MLLW, GCLWD, OTHER, CORRESPONDS
TO _____ FEET ON THE TIDE STAFF FOR THE PERIOD 295 TO 313
DATED INSTALLED: 10/7/80 BY: MT MITCHELL
DATE REMOVED: _____ BY: _____
DATE LEVELED: _____ BY: _____

REMARKS: Relocated gage to an accessible position on maintenance
deck of light tower. Used same orifice and tubing.

FIELD TIDE NOTE
TIDE GAGE REPORT

NOS TIDE TABLE NUMBER: _____ TIME MERIDIAN 075^o W

GEOGRAPHIC LOCALE: VA Beach Saltwater Pumping House, Pier

NAME: Temporary, Sandbridge Beach, VA STATION NUMBER: 863-9428

LATITUDE: 36° 41.5' N, LONGITUDE: 75° 55.2' W

TYPE OF GAGE: ___ ADR, X BUBBLER, ___ OTHER (_____)

PLANE OF REFERENCE: X MLW, ___ MLLW, ___ GCLWD, ___ OTHER, CORRESPONDS

TO _____ FEET ON THE TIDE STAFF FOR THE PERIOD 295 TO 320

DATED INSTALLED: _____ BY: _____

DATE REMOVED: _____ BY: _____

DATE LEVELED: _____ BY: _____

REMARKS: Installed and maintained by NOAA Ship PIERCE



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SURVEY

Date : 25 NOV 1980
To : Chief, Tides and Water Levels Branch, C331
From : *RAH*
Commanding Officer
NOAA Ship Mt. Mitchell S-222
Subj : Tidal Data for Hydrographic Survey H-9922, OPR-D103-MI-80,
Atlantic Seaboard Area Project, DELMARVANC Phase.

It is requested that verified hourly heights of Tides, using Greenwich Mean Time, from the operating tide gages listed below, be forwarded to the Processing Division (CAM3), Atlantic Marine Center, Norfolk, VA. 23510

<u>GAGE NAME</u>	<u>NUMBER</u>	<u>LATITUDE</u>	<u>LONGITUDE</u>
Hampton Roads (Sewells Pt. VA.)	863-8610	36° 56.8'N	76° 19.9'W
Chesapeake Light Tower	260-0000	36° 54.5'N	75° 42.8'W

It is requested that the Time and Height Correctors for each gage be Zoned as per Project Instructions for the area described within the following points;

LATITUDE 36° 46.5'N, 36° 56.3'N, 36° 56.3'N, 36° 46.5'N
LONGITUDE 76° 02.0'W, 76° 02.0'W, 75° 43.4'W, 75° 43.4'W

This information is requested for the following Time Periods;
0000 GMT JD295, thru 2359 GMT JD319



APPROVAL SHEET
FOR
SURVEY H-9922

- 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 has/~~XXXXXX~~ been made. A new final sounding printout has/~~XXXXXX~~ been made.
- B. The verified smooth sheet has been inspected, is complete, and meets the requirements of the HYDROGRAPHIC MANUAL. Exceptions are listed in the Verification Report.

Date: Mar 12, 1982

R. H. Smucker
Chief, Verification Branch

U.S. DEPARTMENT OF COMMERCE
May 18, 1981 NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Atlantic Marine Center:

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): 863-8863 Chesapeake Bay Bridge Tunnel, VA

Period: October 12, - November 14, 1980

HYDROGRAPHIC SHEET: H-9922

OPR: D103

Locality: Chesapeake Bay

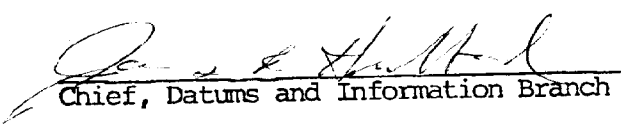
Plane of reference (mean ~~lower~~ low water): 24.75 ft.

Height of Mean High Water above Plane of Reference is 2.62 ft.

REMARKS: Recommended Zoning:

From 76°02.0' east to 75°57.0' apply -25 minute time correction
and x1.26 range ratio.

From 75°57.0' east to 75°43.5' apply -35 minute time correction
and x1.34 range ratio.


Chief, Datums and Information Branch

GEOGRAPHIC NAMES

Name on Survey	Source of Name										
	A	B	C	D	E	F	G	H	K		
ATLANTIC OCEAN	12207										1
CAPE HENRY	12222										2
CRYSTAL LAKE	12222										3
DAM NECK X	12207										4
LAKE RUDEE	12207										5
(locality) X NORTH VIRGINIA BEACH	12207										6
RUDEE INLET X	12207										7
SEASHORE STATE PARK	12222										8
VIRGINIA	12222										9
X VIRGINIA BEACH (locality)	12222										10
X CROATAN BEACH (locality)	TR0069										11
											12
											13
											14
											15
											16
											17
											18
											19
											20
											21
											22
											23
											24
											25

Approved:

Chas. E. Harrington
Chief Engineer - N/C 2x5

21 JAN 1983

HYDROGRAPHIC SURVEY STATISTICS

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT	
SMOOTH SHEET		1	BOAT SHEETS & PRELIMINARY OVERLAYS		4	
DESCRIPTIVE REPORT		1	SMOOTH OVERLAYS: POS. ARC, EXCESS		3	
DESCRIP-TION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/SOURCE DOCUMENTS
ENVELOPES	X					
CAHIERS			2 Raw data & Fatho.			
VOLUMES	3					
BOXES			2 - unv. Misc 3 Sound Vol. on Plo			

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	TOTALS
POSITIONS ON SHEET			3022
POSITIONS CHECKED		20	
POSITIONS REVISED		5	
SOUNDINGS REVISED		30	
SOUNDINGS ERRONEOUSLY SPACED			
SIGNALS (CONTROL) ERRONEOUSLY PLOTTED			
	TIME - HOURS		
CRITIQUE OF FIELD DATA PACKAGE (PRE-VERIFICATION)	6		
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS		92	
VERIFICATION OF SOUNDINGS		172	
COMPILATION OF SMOOTH SHEET		92	
APPLICATION OF TOPOGRAPHY		5	
APPLICATION OF PHOTOBATHYMETRY			
JUNCTIONS		22	
COMPARISON WITH PRIOR SURVEYS & CHARTS		77	
VERIFIER'S REPORT		32	
OTHER			
TOTALS	6	492	498

Pre-Verification by	HRS	Beginning Date	2/3/81	Ending Date	2/3/81
Verification by	JL, RLK, CCM, JSB, LGC	Beginning Date	4/15/81	Ending Date	2/24/82
Verification Check by	Harry R. Smith	Time (Hours)	22	Date	11/30/81
Marine Center Inspection by	HIT	Time (Hours)	20	Date	3/1/82
Quality Control Inspection by	F.P. Saulsbury	Time (Hours)	136	Date	1-19-83
Requirements Evaluation by		Time (Hours)		Date	

M. Meyers 6/8/83 8 hours

REGISTRY NO. H-9922

The magnetic tape containing the data for this survey has not been corrected to reflect the changes made during evaluation and review.

When the magnetic tape has been updated to reflect the final results of the survey, the following shall be completed:

MAGNETIC TAPE CORRECTED

DATE _____ TIME REQUIRED _____ INITIALS _____

REMARKS:

ATLANTIC MARINE CENTER
VERIFICATION REPORT

REGISTRY NO.: H-9922

FIELD NO.: MI-20-1-80

VIRGINIA, ATLANTIC OCEAN, Cape Henry to Dam Neck

SURVEYED: October 22 through November ~~8~~¹⁴, 1980

SCALE: 1:20,000

PROJECT NO.: OPR-D103

SOUNDINGS: Ross Digital Echo Sounder

CONTROL: HYDROTRAC
(hyperbolic)

Chief of Party	R. A. Trauschke
Surveyed by	R. W. Jones
.....	M. Mozgala
.....	J. Zabitchuck
.....	J. W. Humphrey, Jr.
.....	J. L. Long
Automated Plot by	Xynetics 1201 Plotter (AMC)

1. INTRODUCTION

- a. There were no unusual problems encountered on this survey. ✓
- b. Notes and changes were made in the Descriptive Report during verification. ✓

2. CONTROL AND SHORELINE

- a. The source of control is adequately described in sections F and G of the Descriptive Report.

In the area of Rudee Inlet and the fishing pier at Virginia Beach the field unit experienced control problems. The field rejected some data due to this problem and during verification it was determined that some additional data was faulty. This problem could have been the result of attenuation of the signal. The rejected data, by the field and verification, does not detract from the survey as enough satisfactory data were run in these areas. For additional information see section 4.a. of this report. ✓

- b. No contemporary shoreline manuscripts as such were available for this survey as outlined in section 4.1. of the Project Instructions. However, there was a product available called: "Shoreline Movement Study Maps", with a 1980 National Ocean Survey compilation date. This shoreline was shown in black ink on the smooth sheet, for orientation purposes only. (S.L. was digitized from 1980 NOS color photos)

3. HYDROGRAPHY

- a. The agreement at crossings on this survey is adequate; depths agree within the limits prescribed by the Hydrographic Manual. ✓
- b. The standard depth curves could be drawn in their entirety.
The low water curve, which is the state boundary, is not shown because of a lack of hydrography.

The charted 36-ft. curve and brown curves were added to the survey to provide better delineation of the bottom configuration. *The 36ft curve is charted & is required to be shown on the smooth sheet.*

c. The development of the bottom configuration and investigations of least depths is considered adequate with the exceptions discussed under section 7.a. of this report. ✓

4. CONDITION OF SURVEY

The smooth sheet and accompanying overlays, hydrographer's records and reports comply with the Hydrographic Manual with the exceptions listed below.

a. Sounding lines supposedly run in Rudee Inlet between the two jetties (Position numbers 8060 to 8069) were plotted more than 200 meters east of the jetties. No attempt was made to contour 4, 6, 7, and 9-ft. depths that fell between the 18-ft. and 24-ft. contours on the field sheet identifying this as misplotted data. A similar problem occurred in the area of the Virginia Beach Fishing Pier. Due to the density of the development in this area it was not as noticeable on the field sheet. These lines were rejected during verification. ✓

b. Bar checks were not taken in accordance with sections 1.5.2. and 4.9.5.1.1. of the Hydrographic Manual. In fact the records of this survey show that no bar checks were taken and none were attempted. ✓

c. The report on landmarks was not submitted in accordance with section 5.5.1 of the Hydrographic Manual. ✓

d. The field tide note was not submitted using the proper format. The correct format is in section 5.3.5 (B) of the Hydrographic Manual. ✓

e. The geographic names were not submitted nor investigated in accordance with sections 5.3.5. and 5.7. of the Hydrographic Manual. ✓

f. The methods of locating fixed aids to navigation was not in compliance with sections 1.6.5. and 4.5.13. of the Hydrographic Manual. The hydrographer while running a sounding line called a detached position while passing a fixed aid. There was also no estimate of distance from the aid. ✓

g. The "Aids to Navigation", section (N) of the Descriptive Report had no adequacy statement as prescribed by section 5.3.4. of the Hydrographic Manual. ✓

5. JUNCTIONS *The aids are in agreement with their charted positions, and adequately mark their intended features.*

H-9701 (1977) to the west *A butt junction was effected with H-9701 pres. survey, superimposed on H-9701 in overlap area.*
 H-9905 (1980) to the north and northwest *junction is adequate.*
 H-9919 (1980) to the north *1' differences are common - depending on MLLW vs. MLLW on H-9922.*
 H-9948 (1981) to the south *- not in Rockville Office 1-18-83.*
 H-9959 (1981) to the east *- not in Rockville Office 1-18-83.*

The junctions with H-9905, H-9919, H-9948 and H-9959 are complete and require no further work. *H-9948 & H-9959 are not yet in Rockville 1/18/83.* ✓

The junction with H-9701 (1977) will require work in the area of the 12 and 18-ft. curves. Mostly, it is just a matter of revising (on H-9701) the ends of these curves as indicated by the depths on H-9922 (1980). However, it should be noted that one 8-ft. depth (approximate position, Latitude $36^{\circ}49'52''$ Longitude $75^{\circ}58'02''$) on H-9922 exists in the area of 6-ft. depths on H-9907. There is a dredge positioned in the entrance all year long and it frequently pumps sand out of this inlet. An 8-ft. depth does exist on the present survey in this area and differences of one to two feet between these surveys is reasonable. *Because of these conflicts, a butt junction was effected with H-9701(1977). The pres. survey supersedes H-9701 within the common area.*

The surveys H-9098 (1969) and H-9099 (1969) were for field junctioning as specified in section 6.9 of the Project Instructions. They were not considered as contemporary junctional surveys at this time. They were considered and discussed under the comparison with Prior Surveys, section 6., of this report. *Because a project holiday would result without junctioning H-9098 (1969), a butt junction was effected during Q.C.I.*

6. COMPARISON WITH PRIOR SURVEYS

a.	H-4286	(1922)	1:40,000
	H-5990	(1935)	1:40,000
	H-6595	(1940)	1:40,000
	H-7703	(1948)	1:10,000
	H-9098	(1969)	1:10,000
	H-9099	(1969)	1:10,000

H-9099(1969) falls within the area of the present survey; because of this, it is a prior survey and is superseded by the present survey.

Taken together the above surveys are the most recent prior surveys providing coverage of the common area with the present survey. *concur*

In general the prior surveys later than 1922 agree within + 2-ft. Occasional differences up to 8-ft. were found. Prior survey H-4286 of 1922 is generally in agreement within + 3-ft. with this earlier survey generally deeper than the present survey depths. Significant shoaling was found in the vicinity of Latitude $36^{\circ}49.5'N$, Longitude $75^{\circ}54.0'W$ between H-4286 and the present survey. The present survey in this area was found to be up to 9-ft. shallower in depths of 35 to 45-ft. This area is identified as a dump site for dredged material on the chart. *concur*

There are six features on H-7703 (1948), that appear to be net stakes or some like feature, that are not charted. They are in the vicinity of Latitude $36^{\circ}52'30''$, Longitude $75^{\circ}58'55''$; Latitude $36^{\circ}51'20''$, Longitude $75^{\circ}58'30''$ and four in the vicinity of Latitude $36^{\circ}50'00''$, Longitude $75^{\circ}58'00''$. They were not located nor addressed by the hydrographer nor do they appear on the shoreline manuscript TP-00691. It would appear these items were removed from the chart from a source subsequent to this prior survey. Recommend the chart compiler ascertain the authority to ensure they were not inadvertently removed. *concur*

Overall the changes in the survey area may be attributed to improved survey methods, natural causes, and dumping of dredged material. *concur*

The present survey except as noted above is adequate to supersede the above prior surveys within the common area. *concur*

b. Wire Drag Surveys

F.E. 77 W.D.	(1949)	1:40,000 - <i>filed as FE 3 WD (1949)</i>
F.E. 225 W.D.	(1975)	1:40,000
H-6976 W.D.	(1945-47)	1:40,000
H-9293 W.D.	(1972)	1:20,000
H-9871 W.D.	(1976)	1:20,000

1) The comparison with H-6976 W.D. (1945-47) and the present survey revealed seven charted items that fall within the present survey area as discussed below:

- Recommend that the charting of this item be revised to a subm danger's wk symbol & labeled "rep 1919" and also labeled "cleared to 47 ft".*
- a) A 47-ft. wire drag clearance charted (12207) in Latitude $36^{\circ}54'41''$, Longitude $75^{\circ}54'00''$, which is a clearance on an unknown wreck from a 1957 Wreck List, item number 1332 (sunk in 1919). It is noted that the review report for survey H-9098 discusses this item. The object was not hung by H-6976 W.D. Recommend retention as charted as no wire drag survey to date has further investigated this item.
- Do not concur, N.M.A.S. 1949 rep. wk as dispersed. 46 ft. depth. The charted 44 ft. basket edg. This 46 ft. edg. is considered a spur from the charted 44 ft. was rejected during Q.C.I.*
- b) A hang at 41-ft., cleared by 40-ft. (obstruction) charted in Latitude $36^{\circ}54'29.9''$, Longitude $75^{\circ}52'30''$, on an unknown object was carried forward to the present survey. Recommend this item remain as charted. This item was brought forward to the present survey. *concur*
- c) A hang at 30-ft., cleared by 29-ft. (obstruction) charted in Latitude $36^{\circ}54'29.9''$, Longitude $75^{\circ}52'30''$, on an unknown object was carried forward to the present survey. Recommend this item remain as charted. *concur*
- d) A 44-ft. wire drag clearance depth charted in Latitude $36^{\circ}52'05''$, Longitude $75^{\circ}50'35''$, which is apparently on a wreck originating with Notice to Mariners No. 4 of 1944. Recommend this item remain as charted; however, the present survey found an indication of a feature with a least depth of 46-ft. approximately 600 meters east of this item. It is possible that this may be some part of the wreck as the Descriptive Report of survey H-6976 W.D. describes the item as being dispersed in 1944.
- Chart the obstr. as shown on H-9871 WD (1976)*
- e) A 43-ft. wire drag clearance depth charted in Latitude $36^{\circ}51'15''$, Longitude $75^{\circ}51'03''$. This location as charted is in conflict with the position (Latitude $36^{\circ}51.3'$; Longitude $75^{\circ}50.9'$) as stated in the report of survey H-6976 W.D. This item was found on a more recent survey (H-9871 W.D.) and its charting disposition will be discussed under that survey (Item #2). The item from survey H-9871 W.D. was brought forward to the present survey. It was hung at 45-ft. and cleared by 44-ft.
- May have originated with Navy wk List #1814*
- f) A 43-ft. wire drag survey clearance depth charted in Latitude $36^{\circ}50'34''$, Longitude $75^{\circ}51'25''$. This is an unknown object cleared by 43-ft. There is an apparent penciled notation on the A & D Sheet of survey H-6976 W.D. from which the authority for charting the cleared by 43-ft. may have originated. There is no recommendation in the Descriptive Report of survey H-6976 W.D. that the cleared 43-ft. depth in the referenced location be charted. Recommend deletion unless subsequent information in nautical charting reveals otherwise. *Do not concur, deferred to compilation for a charting resolution (basket edg.)*
- (.57)*
- g) A charted hang at 44-ft., cleared by 43-ft. on a wreck (KINGSTON CELONITE) charted in Latitude $36^{\circ}49'37''$, Longitude $75^{\circ}52'10''$. This item was relocated on survey F.E.-77 W.D. (1947) with the same cleared depth and was carried forward to the present survey from F.E.-77 W.D. Recommend this item remain as charted. *concur*
- FE-77WD (1949) hang at 45 ft & cleared at 43 ft. - 45' hang from FE-77 WD (1949) supersedes 44' hang in 1946 on H-6976 WD. (see next page) (41 ft)*

1) There were no conflicts between the present survey depths and the wire drag effective depths of survey H-6976 W.D. **concur**

2) The comparison with survey F.E.-77 W.D. (1949) and the present survey revealed two hangs on charted (Chart 12207) wrecks that fall within the limits of the present survey as discussed below:

a) The hang at 39-ft., cleared by 37-ft. on the wreck of the "SANTORE" charted in Latitude $36^{\circ}53'53''$, Longitude $75^{\circ}46'55''$. This wreck was ~~not~~ carried forward to the present survey, although it is on the extreme western edge of this survey's (H-9922) hydro limits. **Do not concur. Area containing wreck was swept & cleared with an effective drag depth of 41 ft on H-9871 (1976). Revise charted cleared depth to 41 ft.** Recommend this wreck be retained as charted. **because it is off limits of the pres. survey.**

b) The hang at 45-ft., cleared by 43-ft. on the wreck of the "KINGSTON CELONITE" charted in Latitude $36^{\circ}49'37''$, Longitude $75^{\circ}52'10''$. This item was also discussed in b.1)g) above. Recommend this item remain as charted. **b) concur (F.E. 3 W.D. 1949)**

There are no conflicts between the present survey depths and F.E.-77 wire drag survey effective depths. **concur**

3) The comparison with survey H-9293 W.D. (1972) revealed that there are a number of minor conflicts with the present survey (H-9922) depths and the wire drag effective depths. There are two general areas where these conflicts can be found; one is in the vicinity of Latitude $36^{\circ}52'20''$, Longitude $75^{\circ}56'45''$, and the other is in the vicinity of Latitude $36^{\circ}53'00''$, Longitude $75^{\circ}56'56''$. The wire drag effective depth in these areas is 29 feet and the present survey depths are 28 feet. The reduced depths range from 28.0 to 28.7 feet which means the actual conflict is from 1.0 to .3 of a foot. Given the nature of this area (possible currents with sand bottom) in the vicinity of Cape Henry and the 8 year difference in survey dates it is reasonable to attribute the amount of change to natural causes. Recommend charting the depths from survey H-9922 (1980) in the common area. It should be noted that this wire drag survey was processed in the same time period as the hydrographic survey and should be viewed in conjunction with that survey (H-9922). **concur**

4) The comparison with survey F.E.-225 W.D. (1975) revealed that there are a number of conflicts with the present survey (H-9922) and the wire drag effective depths. The conflicts are on a strip (F.E.-225 W.D.) cleared by 50 feet where the present survey (H-9922) has a number of 50-ft. depths, two 49-ft. and one 48-ft. depth. The least depth of 48 feet located in Latitude $36^{\circ}47'26.69''$, Longitude $75^{\circ}50'15.54''$, is a 48.5-ft. reduced depth which is in conflict with the 50-ft. wire drag effective depth by 1.5 feet. It is noted that the two 49-ft. depths from survey H-9922 (1980) are reduced depths of 49.7 feet which means they are in conflict by .4-ft. It is possible and or reasonable to attribute these differences to natural changes and to improved control methods. Recommend charting the depths from the present survey in the common area. **concur**

5) The comparison with survey H-9871 W.D. (1971) and the present survey H-9922 (1980) revealed 6 obstructions and or wrecks that fall within the present survey area as discussed below:

a) A 43-ft. wire drag clearance charted (12207) in Latitude $36^{\circ}51'15''$, Longitude $75^{\circ}51'03''$, which is a clearance on an obstruction believed to have originated with H.O. Notice to Mariners #7 of 1944. This item was cleared by 43 feet in 1945-47 by survey H-6976 W.D. and again in 1948. H-9871 (1971) hung

E-Page 4

this obstruction (Item #2) at 45 feet and cleared it at 44 feet. This information was carried forward to the present survey. A diver investigation of this item revealed it to be, "a large round metal casing, possible remains of navigation Buoy". Recommend charting this item per location and cleared depth (44 feet) from H-9871 W.D. (1971). *concur*

b) An uncharted obstruction, hung at 43 feet and cleared by 42 feet, in Latitude $36^{\circ}51'39.24''$, Longitude $75^{\circ}54'12.05''$, was carried forward to the present survey. This obstruction (buoy counter weight) is discussed under Item #5 in the Descriptive Report for H-9871 W.D. Recommend charting this as an obstruction with a cleared depth of 43 feet from H-9871 W.D. (1971). *concur*

12221
142

c) An uncharted obstruction, hung at 31 feet and cleared by 29 feet, in Latitude $36^{\circ}52'40''$, Longitude $75^{\circ}56'32''$, was carried forward to the present survey. This obstruction (anchor fluke) is discussed under Items 5 and 6 in the Descriptive Report for H-9871 W.D. Recommend charting this item as an obstruction with a cleared depth of 29 feet from H-9871 W.D. (1971). *concur*

12221

29

d) An uncharted obstruction, hung at 32 feet and cleared by 29 feet, in Latitude $36^{\circ}53'08''$, Longitude $75^{\circ}56'39''$, was carried forward to the present survey. This obstruction (anchor fluke) is discussed under Item 6 in the Descriptive Report for H-9871 W.D. Recommend charting this item as an obstruction with a cleared depth of 29 feet from H-9871 W.D. (1971). *concur*

12221

29

e) A charted wreck (STORMY) with a least depth of 53 feet by Bryson Gauge, charted in Latitude $36^{\circ}51'48''$, Longitude $75^{\circ}47'04''$, was carried forward to the present survey. This is an intact wreck of the fishing vessel "STORMY", approximately 40 feet in length (diver's estimate). The wreck, charted with a cleared depth of 55 feet, may have originated with a Notice to Mariners placed by this unit (wire-drag vessels) at the time of this survey (H-9871 W.D.). Recommend revising the charted 55-ft. now on the chart to a 53-ft. depth from H-9871 W.D. (1971). *concur*

12221

LNM 16/76

53 WK

f) An obstruction, hung at 51 feet and cleared by 51 feet, at Latitude $36^{\circ}52'59''$, Longitude $75^{\circ}48'12''$, was carried forward to the present survey. This item was a temporary hang not investigated by divers. There were no charted obstructions or wrecks in the area. Recommend charting the 49-ft. cleared depth with obstruction note from H-9871 W.D. (1971). *Grounding? - 51 temp hang falls between 52' and 54' depths. This may be a grounding, decision on labeling 51' an obstr is deferred to compilation.*

51

This survey (H-9871 W.D.) investigated three additional items that were in the present survey area that were not found as discussed below.

g) A non-dangerous sunken wreck, charted in Latitude $36^{\circ}53'05''$, Longitude $75^{\circ}47'00''$, on Chart 12221, 50th Edition, July 18, 1981, originates with a 1957 Wreck List, sunk in 1914. There was no indication of this wreck on the present survey (H-9922). H-9871 W.D. (1971) cleared the area and did not hang the wreck. Consult H-9871 W.D. (1971) for charting disposition and status of the wreck. This wreck is not shown on Chart 12207, 14th Edition, May 5, 1979. *Retain the charted non-dangerous wreck, add label "cleared to 54ft. as shown on H-9871 WD (1976)"*

h) Presurvey Review Item #100, a non-dangerous sunken wreck, charted in Latitude $36^{\circ}52'00''$, Longitude $75^{\circ}55'00''$, on Chart 12221, 50th Edition, July 18, 1981, originates with Chart Letter 584 of 1925 and the 1957 Wreck List. There was no indication of this wreck or obstruction on the present survey (H-9922);

(Item #5, pgs 485 of V.R. H-9871 WD)

therefore, it is not considered verified nor disproved by H-9922. However, Chart Letter 584 of 1925 reported that a ship with a 23 to 27-foot draft met an obstruction in depths of 42 to 48 feet. Present survey depths at the reported location are approximately 43 feet which are consistent with the prior survey depths in this area. A concluding note in the Chart Letter stated the area may have shoaled to the draft of the vessel during a storm. An examination of the prior surveys conclude, that shoaling to 27 feet or less due to a storm in these depths is very unlikely. Survey H-9871 W.D. cleared the area sufficiently to disprove an obstruction extending to the vessel draft. The existence of the reported wreck or obstruction in this location is very doubtful. It is probable that the vessel was not at the reported location when it met a reported obstruction. Consult H-9871 W.D. (1977) for charting disposition and status of the wreck. This wreck is not shown on Chart 12207, 14th Edition, May 5, 1979.

(See also D.R. pg 7
devel. #4)

12221

ED (cleared 41 ft)

For now add
ED and (clearance 41 ft)
50% of 41 ft

(cleared to 41 ft)
Recommended on
H-9871 W.D. (1977)
that obstruct by
wreck be purged from
the chart.
QC concurs

i) Presurvey Review Item Number 108, a non-dangerous sunken wreck, charted in Latitude $36^{\circ}50'24''$, Longitude $75^{\circ}49'12''$, on Chart 12221, 50th Edition, July 18, 1981, originates with the 1957 Wreck List Number 1312, sunk in 1942. There is no indication of this wreck on the present survey (H-9922); therefore, it is not considered verified or disproved by H-9922. H-9871 W.D. (1977) cleared the area and did not hang the wreck. Consult H-9871 W.D. for charting disposition and status of the wreck. This wreck is not shown on Chart 12207, 14th Edition, May 5, 1979.

Also addressed
on pg. 7, D.R. #2
in the D.R.

Chart the wreck
from its origin
1957 W.L. 1312 &

add label "Area
cleared to 48 ft"
as indicated on H-9871
(1977) W.D.

A comparison with H-9871 W.D. (1977) revealed there are minor conflicts with the wire drag effective depths and the present survey (H-9922) depths. The conflicts seem to occur mainly in the northeastern area common to both surveys and are in the range of from .5-ft. to 1-ft. Given the nature of this area (possible currents with sand bottom) in the vicinity of Cape Henry and the 1 year difference in survey dates it is reasonable to attribute the amount of change to natural causes. Recommend charting the bottom configuration and depths from H-9922 (1980) except in areas of clearance depths over wrecks, obstructions and the like indicated above. **CONCUR**

(Area within
lat. $36^{\circ}51.30'$ to
 $36^{\circ}53.20' N$
& long. $75^{\circ}38.70'$
to $75^{\circ}57.00' W$)

c. Shoreline Manuscripts

T-11706	(1962-63)	1:10,000
T-11709	(1962-63)	1:10,000
TP-00691	(1975-77)	1:5,000

In general, some differences up to 70 meters were noted between shoreline from the 1962-63 manuscripts in the northeastern area on the present survey. The greatest amount of change appears to be occurring from the tip of Cape Henry to approximately one mile south of the Cape. This area has built up by the above stated amount.

Accretion of S.L.
is general throughout
the survey
area & is
considered
a man made
change.

There are some conflicts noted between the shoreline, shown on the smooth sheet (from "Shoreline Movement Study Maps") and the prior shoreline manuscripts as discussed below.

1) The charted pier ruins, in Latitude $36^{\circ}49'51''$, Longitude $75^{\circ}58'09''$, which are shown on TP-00691 do not appear on the Shoreline Movement Study Maps nor were they addressed by the hydrographer. Recommend these ruins be charted as submerged ruins from this prior shoreline manuscript. The city of Virginia Beach was contacted and it was stated that the (steel beams) have been cut down to below the surface of the sand numerous times but due to erosion they surface again.

Chart as subm. ruins
as shown on the present
survey during Q.C.I.

2) A pile, in Latitude $36^{\circ}50'09''$, Longitude $75^{\circ}58'14''$, originating with shoreline map TP-00691 (1975-77) does not appear on the shoreline movement study maps. This item will be discussed under Section 7.a.1) of this report. This item was carried forward to the present survey. *Brought fwd as a pile covered at MNW from C.L. 685 (1972)*

3) The "Bkw", charted in the vicinity of Latitude $36^{\circ}50'48''$, Longitude $75^{\circ}58'24''$, is discussed in the Descriptive Report for TP-00691 under the Field Edit Report section dated June 13, 1977. This object does not appear on the shoreline movement study maps nor was it verified or disproved by the hydrographer on the present survey. This object is a steel "A" frame structure used to control erosion along Virginia Beach. This office contacted the Virginia Beach Erosion Control Board and they stated the structures are still in place. Recommend this item be retained as charted. *Do not concur. This charted Bkw is a subm. sand trap accor. ing to the Dir. of TP-00691 (1975-77) Perhaps a label. Obstr (slanted lettering) would be more appropriate.*

4) A fence, shown in Latitude $36^{\circ}49'07''$, Longitude $75^{\circ}58'01.5''$, on TP-00691 was not shown on the shoreline movement study maps. The hydrographer did not discuss this item. This item will be discussed under Section 7.a.2) of this report. *Retain the dashed line delimitation charted from CL-685 (1972) & revise the charted label.*

Add in a Danger Curve. The dashed line is lost in 60' curve on 1:80000 scale 6/26/84

7. COMPARISON WITH CHARTS #12207 (14th Edition, May 5, 1979)
 #12222 (24th Edition, May 8, 1980)
 #12200 (32nd Edition, November 10, 1979)
 #12221 (48th Edition, April 19, 1980)

a. Hydrography

The charted hydrography (85%) originates with the previously discussed prior surveys which need no further discussion. The remaining soundings from unascertainable sources appear to agree with the present survey by from 1 to 3-ft. generally, with the present survey being deeper by that amount. There are differences of up to ± 4 feet in several instances.

A problem was encountered when comparing the present survey with these charts. The problem was that not all the charted wreck information exists on any one chart common with the survey area. It was necessary to transfer five charted wrecks from Chart 12200 to Chart Number 12207 in order to centralize all the wreck information on one chart that covers the present survey area.

Attention is directed to the following items:

1) A pile, in Latitude $36^{\circ}50'09''$, Longitude $75^{\circ}58'14''$, originates with shoreline map TP-00691 (1975-77). This item is not charted but is in the same location as a charted jetty or groin (12207) which originated with Chart Letter Number 540 of 1950. Recommend the jetty or groin be deleted from the chart and this pile be charted, as the shoreline map was field edited. This item carried forward to the smooth sheet. *concur*

2) A line of pipes, charted in Latitude $36^{\circ}49'07''$, Longitude $75^{\circ}58'01.5''$, was not located or addressed by the hydrographer. This line of pipes is shown on the shoreline manuscript (TP-00691) as being a fence. The charting source for this item originates with Chart Letter Number 634 of 1963. This office contacted the U. S. Army Corps of Engineers on this item. They issued a permit to Virginia Institute of Marine Sciences to put 30 odd pipes in this area for a wave gage study. The permit was issued in 1963 and was based upon the condition these pipes would be removed at the end of one year. Recommend the fence be charted in this area as shown on TP-00691 of 1975-77. *Do not concur. Because of S.L. accretion in this area the offshore end of the fence now falls at the MNW line (present S.L.) Expunge the charted pipes.*

3) Presurvey Review Item Number 102, is a charted non-dangerous sunken wreck (not shown on Chart 12207), in Latitude $36^{\circ}54'08''$, Longitude $75^{\circ}51'30''$. The source of this wreck is, an unknown obstruction originating with the "1957 Wreck List, Number 1330 reported in 1947. The field investigated this item, however, 100 meter line spacing is not considered sufficient to disprove this item; therefore, it is not considered verified nor disproved by H-9922. Recommend retaining this item as charted (12221). **CONCUR**

Also addressed on pg. 7 (devel #3) of D.R.

4) Presurvey Review Item No. 101 is a charted non-dangerous sunken wreck, in Latitude $36^{\circ}50'12''$, Longitude $75^{\circ}58'12''$. The source of this wreck is an unknown wreck number 1000 sunk in 1950 reported in 1954 originating with the 1957 Wreck List. The field discussed this item in the Descriptive Report under Section L. development Number 4. The only further discussion necessary is that a private maintained (state) aid to navigation as located by the field may mark the remains of this wreck (see page 8, Section N. of the Descriptive Report). **Retain the sunken dangerous wreck as (area is cleared to 41 ft, not 42 ft) charted.**

5) A 42-ft. clearance is charted in Latitude $36^{\circ}47'28''$, Longitude $75^{\circ}51'06''$. This item was investigated by wire drag survey FE 225 W.D. (1975). At that time this item was an obstruction originating with an unknown source. This wire drag survey cleared the item to 41 feet which may be the source of the now charted 42-ft. cleared depth. There is a Quality Control Report dated September 11, 1980 that applies to the survey FE 225 W.D. that recommends this item be deleted from the chart. This hydrographic survey (H-9922) did not investigate this item. The general depths in the area of the 42-ft. clearance is 45 to 48 feet. Recommend this item be deleted from the chart as per Quality Control Report dated September 11, 1980 of survey FE 225 W.D.

Do not concur. Depths charted in the area at the time of the FE-225 QCI were not have been the actual depths in the area. (now 48-49 ft. on H-9922. Recommend "obstr reported" with appended label "cleared to 41 ft"

6) A 46-ft. depth, charted at Latitude $36^{\circ}49.8'$, Longitude $75^{\circ}48.8'$, originates with an unascertainable source. This depth is six feet shallower than present survey depths. The bottom configuration and the development of the present survey is adequate to disprove the existence of this shoal depth. An area of shoaling to 49 feet approximately 600 meters to the southwest is evident on the present survey. **CONCUR**

miscellaneous

7) A 47-ft. depth, charted at Latitude $36^{\circ}50.6'$, Longitude $75^{\circ}50.5'$, originates with an unascertainable source. This depth is 5 to 7 feet shallower than present survey depths at this location. A shoal depth of 49 feet was found approximately 400 meters to the west by the present survey. It is doubtful that the 47-ft. depth exists evidenced by the present survey's bottom configuration. It is recommended that it be deleted from the chart. **CONCUR**

miscellaneous

Except as indicated above and discussed elsewhere in this report the present survey is adequate to supersede the charted hydrography in the common area. **CONCUR**

b. Aids to Navigation

The aids to navigation adequately mark the intended features on this survey. It is noted that the field failed to adequately locate the two fixed aids: Rudee Inlet Jetty Lights 1 and 2. These aids were shown on the smooth sheet from photogrammetrically located positions on shoreline manuscript TP-00691 of 1975-77. The other aids to navigation are adequately discussed in the Descriptive Report Section N. **CONCUR**

See also section N of the D.R.

8. COMPLIANCE WITH INSTRUCTIONS

This survey adequately complies with the Project Instructions with the excepts listed in Sections 4 and 7 of this report and the following: Section 4.2.1. "Shoreline and Charted Detail", Section 4.2.2. "Landmarks", Section 4.2.3. "Non-floating Aids to Navigation", Section 4.2.4. "Geographic Names", Section 6.10.1. "Prior Surveys", and Section 6.10.2. "Comparison with Charts". ✓

9. ADDITIONAL FIELD WORK

This is considered an adequate basic survey; however, additional work by wire drag survey methods may be desirable to resolve items noted in this report. **CONCUR**

absent

J. Scott Bradford
Cartographer Technician
Verification of Data

Harry R. Smith

Harry R. Smith
Senior Cartographic Technician
Verification Check

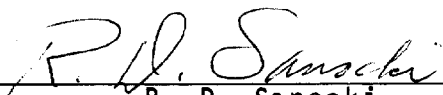
Leroy G. Cram
Leroy G. Cram
Cartographer
Evaluation & Analysis
24 February 1982

INSPECTION REPORT
H-9922

The completed survey has been inspected by the Hydrographic Inspection Team with regard to survey coverage, delineation of depth contours, development of critical depths, cartographic symbolization, and verification or disproval of charted data. The Verification Report has presented the facts accurately and properly, the procedures used were appropriate, and the recommendations are logical and justifiable. The survey complies with National Ocean Survey requirements except as noted in the Verification Report. The survey records comply with NOS requirements except where noted in the Verification Report. The Hydrographic Inspection Team concurs with the verifier's findings, actions, and recommendations.

Exceptions, noted during QCI, are appended to items throughout the D.R.

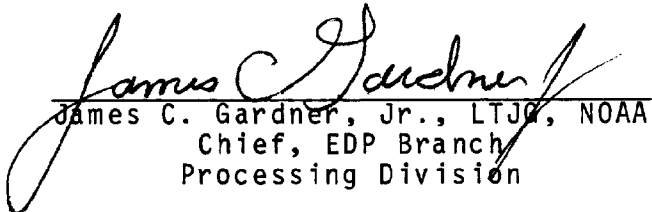
Examined and Approved
Hydrographic Inspection Team



R. D. Sanocki
Chief, Verification Branch
Processing Division

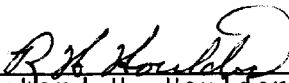


Evelyn J. Fields, LT, NOAA
Field Procedures Officer
Operations Division



James C. Gardner, Jr., LTJG, NOAA
Chief, EDP Branch
Processing Division

Approved/Forwarded
March 8, 1982



Richard H. Houlder, RADM, NOAA
Director, Atlantic Marine Center



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
CHARTING AND GEODETIC SERVICES
Rockville, Md. 20852

N/CG242:FPS

January 19, 1984

TO: Roy K. Matsushige *RKM*
Chief, Hydrographic Surveys Branch

THRU: Chief, Standards Section *jm*

FROM: F. P. Saulsbury *F. P. Saulsbury*
Quality Evaluator

SUBJECT: Quality Control Report for Survey H-9922 (1980), Virginia, Atlantic Ocean, Cape Henry to Dam Neck

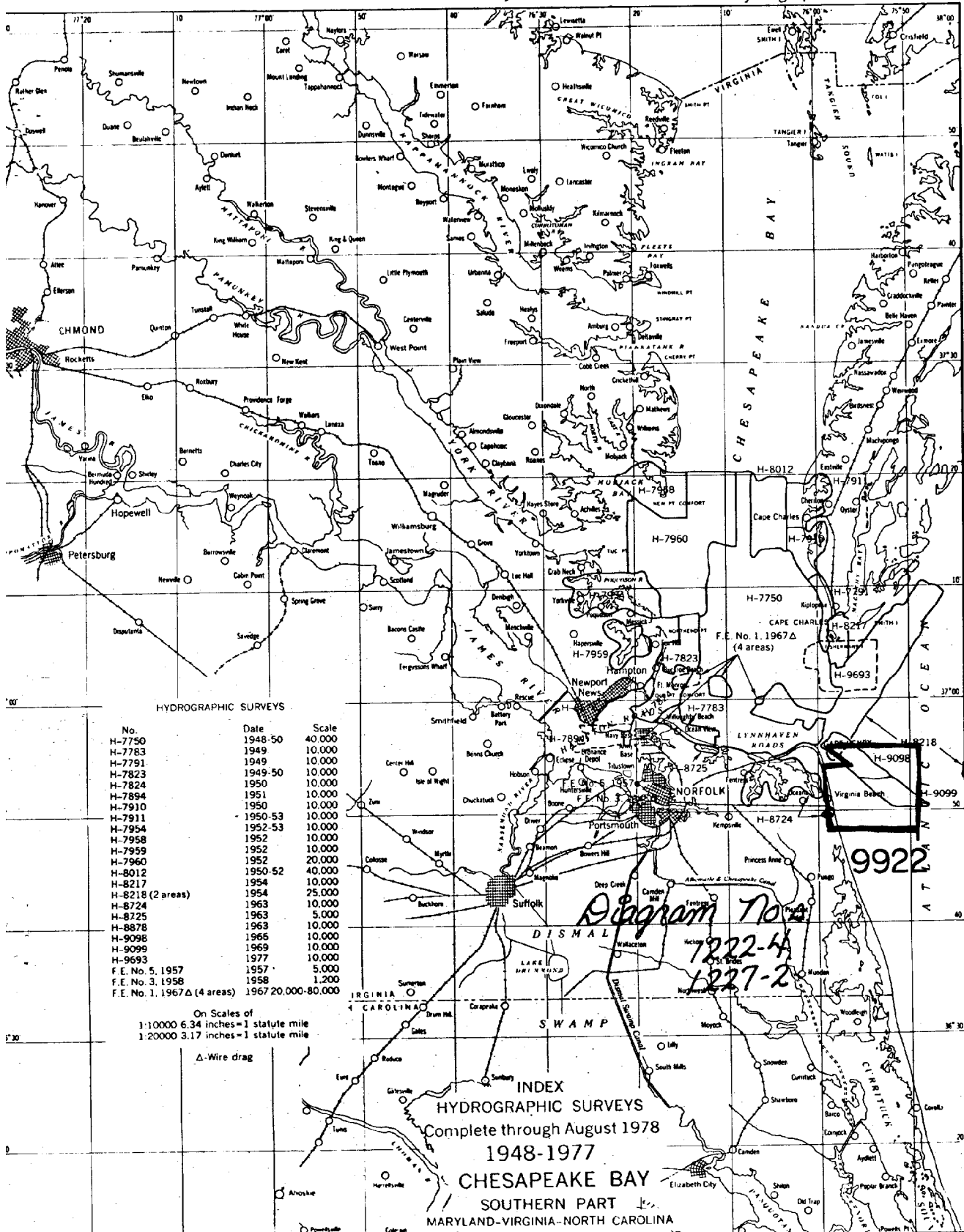
A quality control inspection of survey H-9922 was accomplished to monitor the survey for adequacy with respect to data acquisition, delineation of the bottom, determination of least depths, navigational hazards, junctions, sounding line crossings, smooth plotting, shoreline transfer, decisions made and actions taken by the verifier, and the cartographic presentation of data. Revisions and additions to the smooth sheet, plus helpful comments made to the verifier, are identified on a one-half scale copy of the survey to be furnished the verifier. In general, the survey was found to conform to National Ocean Service standards and requirements except as stated and noted in the Verifier's Report and the HIT Report.

CC:
N/CG241



DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Survey
Rockville, Maryland

Hydrographic Index No. 70 M



HYDROGRAPHIC SURVEYS

No.	Date	Scale
H-7750	1948-50	40,000
H-7763	1949	10,000
H-7791	1949	10,000
H-7823	1949-50	10,000
H-7824	1950	10,000
H-7894	1951	10,000
H-7910	1950	10,000
H-7911	1950-53	10,000
H-7954	1952-53	10,000
H-7958	1952	10,000
H-7959	1952	10,000
H-7960	1952	20,000
H-8012	1950-52	40,000
H-8217	1954	10,000
H-8218 (2 areas)	1954	25,000
H-8724	1963	10,000
H-8725	1963	5,000
H-8878	1963	10,000
H-9098	1966	10,000
H-9099	1969	10,000
H-9693	1977	10,000
F. E. No. 5, 1957	1957	5,000
F. E. No. 3, 1958	1958	1,200
F. E. No. 1, 1967Δ (4 areas)	1967	20,000-80,000

On Scales of
1:10000 6.34 inches=1 statute mile
1:20000 3.17 inches=1 statute mile

Δ-Wire drag

INDEX
HYDROGRAPHIC SURVEYS
Complete through August 1978
1948-1977
CHESAPEAKE BAY
SOUTHERN PART
MARYLAND-VIRGINIA-NORTH CAROLINA

Diagram No. 7222-4
7227-2

9922



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
CHARTING AND GEODETIC SERVICES
Rockville, Md. 20852

MAR 2 1984

N/CG241:MJF

TO: N/MOA - Wesley V. Hull

FROM: *for* N/CG2 - C. William Hayes *Sign R. Peters*

SUBJECT: Report of Compliance for Survey H-9922

The smooth sheet and Descriptive Report for survey H-9922 (1980), Virginia, Atlantic Ocean, Cape Henry to Dam Neck, have been reviewed. This survey, except as noted in the Quality Control Report, dated January 19, 1984 (copy attached), and the Hydrographic Survey Inspection Team Report, dated March 8, 1982, is complete and adequate for the purposes intended and is in compliance with Project Instructions OPR-D103-MI-80, dated February 20, 1980.

Attachment

cc:
N/CG242 w/o att.



RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9922

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 <i>at Proof Stage</i>
12221 ✓	5-4-84	MARINA SOKIERA	Full Part Before After Verification Review Inspection Signed Via Drawing No. 81 ... examined for critical corrections through CHTS. 12205A & 12221 . APPLIED [at proof stage]
		<i>Jo'e</i>	
12205 ✓	5-4-84	MARINA SOKIERA	Full Part Before After Verification Review Inspection Signed Via Drawing No. 18 ... examined for critical corrections through CHT 12205 - 12221. APPLIED [at proof stage]
12220 ✓	8-21-84	<i>D. C. Harpise</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. 51 Critical Corrections only
12207 ✓	9-13-84	<i>D. Harpise</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. 24 Critical Corrections only
12081 ✓	10-1-85	<i>J. Graham</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>Prototype</i>
12222	6-18-86	<i>Russell P. Kennedy</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. 31
12221	7-19-86	<i>Russell P. Kennedy</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. 83
12208	5-12-88	<i>Ernest V. Monte</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>App'd Sdgs in Disposal Area Limits</i>
12207 ✓	5-17-88	<i>Ernest V. Monte</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>Re App'd Sdgs, date within Disposal Site through 12208</i>
12205A ✓	5-18-88	<i>Ernest V. Monte</i>	Full Part Before After Verification Review Inspection Signed Via Drawing No. <i>Re App'd Sdgs, date within Disposal Site through 12208, 12207</i>
12220 ✓	5-18-88	<i>Ernest V. Monte</i>	Part Before <i>Re App'd Hydro & date within Disposal Site through 12207</i>
12200 ✓	5-18-88	<i>Ernest V. Monte</i>	Part Before <i>App'd Hydro in Disposal site through 12220</i>
12221 ✓	5-19-88	<i>Ernest V. Monte</i>	Part Before <i>Revised Hydro in Disposal Site through 12207 & date</i> <i>CIC. FULL APPLIED J GRAHAM 10-1-85</i>

12221 ✓ 11-7-89 *John Pierce* Full Applied after Inspection
 Dwg. No. 85
 12220 ✓ 12-21-89 *John Pierce* Fully Applied after Inspection to Dwg. 53
 - look on back side -

12207 2-22-90 Fully Applied AFTER INSPECTION THRU CHART 12221 DWG #85

12205 2-28-90 ELEN SPENCER FULL APPLICATION AFTER REVIEW INSPECTION
DRAWING NO. 21 (Applied thru. 12207-same scale)

12208 11/18/91 Fully applied
J. ROBINSON Drawing #11 Reconstruction