WARNING
The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

Nautical Miles
Yards

NOTE S
Regulations for ocean dumping sites are contained in 40 CFR, Parts 220-229. Additional information concerning the regulations and requirements for use of the sites may be obtained from the Environmental Protection Agency (EPA). See U.S. Coast Pilots appendix for addresses of EPA offices.

SUPPLEMENTAL INFORMATION
Consult U.S. Coast Pilots 3 and 4 for important supplemental information.

HYDROGRAPHY
The most recent basic hydrographic survey used in the compilation of hydrography in the vicinity of the Mr. Nautilus Shoal was accomplished by the U.S. Coast Survey vessel, Pierce, commanded by Commander Carl W. Fisher in 1977.

Formerly C&GS 1222, 1st. Ed., Mar. 1913 G--1952-784

NOTE X
TERRITORIAL SEA AND CONTIGUOUS ZONE
The lines delimiting the territorial sea and contiguous zone represent an interdepartmental committee's interpretation of legal principles as applied to geographical information. The lines are subject to revision when required by correction of the geographic information shown or by reinterpretation of the legal principles involved. Where differences occur between adjacent or overlapping charts, the lines shown on the most recent chart issue take precedence.

RADAR REFLECTORS
Radar reflectors have been placed on many floating aids to navigation. Individual radar reflector identification on these aids has been omitted from this chart.

SOUNDINGS IN FEET

Nautical Chart Catalog No. 1, Panels D, E

76° 25' (CONTINUED ON CHART 12238) 20' 15' 10' (JOINS CHART 12225) 05' 76° 55' 50' 45' 40' (JOINS CHART 12210) 35' 75° 30'
37° 20' 15' 10' 05' 36° 55' 50'

LORAN-C GENERAL EXPLANATION
LORAN-C FREQUENCY 100kHz
PULSE REPETITION INTERVAL
9960 ..... 99,600 Microseconds
STATION TYPE DESIGNATORS: (Not individual station letter designators)
M ..... Master
W ..... Secondary
X ..... Secondary
Y ..... Secondary
Z ..... Secondary
EXAMPLE: 9960-X

RATES ON THIS CHART
9960-W 9960-X 9960-Y 9960-Z

The Loran-C lines of position overprinted on this chart have been prepared for use with ground wave signals and are presently compensated only for normal propagation delays which have not yet been verified by observed data. Mariners are cautioned to rely on sky wave only for fixes in inshore waters. Sky wave corrections are not provided.

LORAN LINEAR INTERPOLATOR
MICROSECONDS

LORAN-A SOUTH BAY GENERAL EXPLANATION
FREQUENCY CHANNEL (preceding Hz) ..... 1850 kHz
BASIC PULSE RECURRENCE RATE ..... 13 pulses per second
SPECIFIC RECURRENCE RATES assigned for station identification (following H)
EXAMPLE: 3H4
RATES ON THIS CHART
3H4 3H5
CAUTION
Sky waves should not be used in determining loran lines of position on this chart.

NOTE B
YORK SPIT CHANNEL
Depths entering from seaward
Surveys of Nov-Dec 1978
Left outside quarter ..... 42.2 ft.
Left inside quarter ..... 43.7 ft.
Right inside quarter ..... 43.4 ft.
Right outside quarter ..... 42.8 ft.
"The use of this channel shall be restricted to vessels operating in connection with the work of the Chesapeake Bay and vessels engaged in such other watercraft shall cross the channel or enter it at any point other than at its ends and in the direction of its axis. Any vessel having entered the channel shall follow the course thereof for its entire length.

CAUTION
Mariners are warned to stay clear of the protective riprap surrounding navigational light structures shown thus:

NOTE A
Navigation regulations are published in Chapter 2, U.S. Coast Pilot 3 and 4, or weekly Notice to Mariners which include new or revised regulations. Information concerning the regulations may be obtained at the Office of the District Engineer, Corps of Engineers in Norfolk, Virginia.
Anchorage regulations may be obtained at the Office of the Commander, 5th Coast Guard District in Portsmouth, Virginia.
Refer to section numbers shown with area designation.

RACING BUOYS
Racing buoys within the limits of this chart are not shown hereon. Information may be obtained from the U.S. Coast Guard District Offices as racing and other privately maintained buoys are not all listed in the U.S. Coast Guard Light List.

NOTE C
HAMPTON ROADS TUNNEL APPROACH SPANS
HOR. CL 45 FT. AUTH.
VERT. CL 10 FT.

NOTE D
DANGER AREA
Area is open to unrestricted surface navigation but all vessels are cautioned neither to anchor, dredge, trawl, lay cables, bottom, nor conduct any other similar type of operation because of residual danger from mines on the bottom.

NOTE E
Chesapeake Bay Bridge & Tunnel
(Privately maintained lights)
Trestles A and B - In each trestle section the fixed navigation openings for small craft consists of a group of 3 spans. A fixed green light marks centerline of each span and fixed red lights mark outermost bridge support piling on each side of the openings. North Channel & Fisherman Inlet Bridges - A fixed green light marks each mid-channel span. Fixed red lights marking channel limits. Fixed red obstruction lights mark each pier in Trestles C and D.

LYNNHAVEN INLET
Lynnhaven Inlet is subject to continual change.
HEIGHTS
Heights in feet above Mean High Water.

NOTE F
CAUTION
The Chesapeake Bay Bridge Tunnel complex has several times suffered damage from vessels due to adverse weather conditions. Currents in excess of three knots can be expected in the area. Mariners transiting this area are urged to be particularly alert in regards to the weather situation. The National Weather Service provides 24 hour weather broadcasting on 162.55 MHz. The local Marine operator also broadcasts weather information on VHF-FM channel 26 (130.9 MHz) on the hour and 20 minutes after the hour. Operating times on 2538 and 2430 kHz. Transmitting schedules are subject to change, see Notice to Mariners. Maneuvering in close proximity of the bridge-tunnel complex is discouraged.

NOTE G
TRAFFIC SEPARATION SCHEME
The RECOMMENDED route for entering and departing from Chesapeake Bay is marked by a broad purple line centered on a line of bearing from which separates the courses of inbound and outbound vessels. Vessels should leave all buoys on their port hand. The pilotage area is marked by a broken purple band. Traffic within the precautionary area may consist of vessels operating between the Chesapeake Bay entrance and ports on either side of the established traffic lanes. Mariners are advised to exercise extreme care in navigating within this area.
The traffic separation scheme has been designed to act in the prevention of collisions of ships approaches to Chesapeake Bay but is not intended in any way to supersede or alter the applicable Rules of the Road.

TIDAL INFORMATION

Place	Height referred to datum of soundings (MLW)			
	Mean High Water	Mean High Water Lunar	Mean Low Water	Extreme Low Water
	feet	feet	feet	feet
Great Machipongo Inlet	3.9	1.9	0.0	−2.5
Cape Charles	3.0	1.5	0.0	−2.5
Old Point Comfort	2.5	1.2	0.0	−1.5
Tue Marshes Light	2.2	1.1	0.0	−1.5
Wolf Trap Light	1.6	0.8	0.0	−1.0

(277)

TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS-REPORTS TO MARCH, 1978

CHANNEL	CONTROLLING DEPTHS FROM SOUNDING IN FEET AT MEAN LOW WATER (MLW)					PROJECT DIMENSIONS		
NAME OF CHANNEL	LEFT HALF OUTSIDE QUARTER	LEFT HALF INSIDE QUARTER	RIGHT HALF INSIDE QUARTER	RIGHT HALF OUTSIDE QUARTER	DATE OF SURVEY	WIDTH (FEET)	LENGTH (MILES)	DEPTH (FEET)
TWINING SHOAL CHANNEL, A	40.3	41.3	41.3	40.4	10-77	1000	9.4	42
NORTH AUXILIARY CHANNEL	32.5	32.8	31.5	30.8	10-77	450	8.9	42
SOUTH AUXILIARY CHANNEL	28.1	28.0	28.8	30.0	10-77	450	9.1	42

A THE CHANNEL IS RESTRICTED TO EXCLUDE VESSELS AND TOWS DRAWING LESS THAN 20 FEET. THERE IS NO RESTRICTION TO PASSENGER SHIPS.
NOTE-CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION

PRODUCED BY COMPUTER ASSISTED METHODS

POLLUTION REPORTS
Report all spills of oil and hazardous substances to the National Response Center via 800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

CAUTION
Improved channels shown by broken lines are subject to shoaling, particularly at the edges.

CAUTION
Temporary changes or defects in aids to navigation are not indicated on this chart. See Notice to Mariners.
During some winter months or when endangered by ice, certain aids to navigation are replaced by other types or removed. For details see U.S. Coast Guard Light List.

For Symbols and Abbreviations see Chart No. 1.
COLREGS: International Regulations for Preventing Collisions at Sea, 1972.
Demarcation lines are shown thus: ——

AUTHORITIES
Hydrography and topography by the National Ocean Survey (formerly the Coast and Geodetic Survey) with additional data from the Corps of Engineers and U.S. Coast Guard.

CAUTION
FISH TRAP AREAS AND STRUCTURES
Mariners are warned that numerous uncharted duck blinds and fishing structures, some submerged, may exist in the fish trap areas. Such structures are not charted unless known to be permanent.
Regulations to assure clear passage to and through dredged and natural channels and to established landings are prescribed by the Corps of Engineers in the Code of Federal Regulations.
Definite limits of fish trap areas have been established in some areas and those limits are shown thus:
Where definite limits have not been prescribed the location of fishing structures is restricted only by the regulations.

RACING BUOYS
Racing buoys within the limits of this chart are not shown hereon. Information may be obtained from the U.S. Coast Guard District Offices as racing and other privately maintained buoys are not all listed in the U.S. Coast Guard Light List.

POLLUTION REPORTS
Report all spills of oil and hazardous substances to the National Response Center via 800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).

CONSULT AIDS TO NAVIGATION
Consult U.S. Coast Guard Light List for supplemental information concerning aids to navigation.

NOAA VHF-FM WEATHER BROADCASTS
The National Weather Service station listed below provides continuous marine weather broadcasts. The range of reception is variable, but for most stations is usually 20 to 40 miles from the antenna site.
Norfolk, Va. KHB-37 162.55 MHz

CAUTION
Only marine radiobeacons have been calibrated for surface use. Limitations on the use of certain other radio signals as aids to marine navigation can be found in the U.S. Coast Guard Light Lists and Defense Mapping Agency publication "Radiogoniometric Fix Accuracy" (7.17.A.5).
Radio direction-finder bearings to commercial broadcasting stations are subject to error and should be used with caution.
Station positions are shown thus:
⊙(Accurate location) ⊙(Approximate location)

STORM WARNINGS
The National Weather Service displays storm warnings at the following approximate locations:
Cape Henry Lighthouse (36°55'42.8")
Weather Service Building Cape Henry (36°55.6'-76°00.4")
Fort Monroe (37°00.1'-76°18.8')
Oyster (37°17.2'-75°58.8')
Little Creek Va. (36°55.0'-76°10.8')

LOCAL MAGNETIC DISTURBANCE
Differences of as much as 6° from the normal variation have been observed within 3 miles of the charted area.

CAUTION
This chart has been corrected from the Notice to Mariners published weekly by the Defense Mapping Agency Hydrographic /Topographic Center and the Local Notice to Mariners issued periodically by each U.S. Coast Guard district to the print date shown in the lower left hand corner.

SOUNDINGS IN FEET

For LORAN-C rates 9930-W, Y and Z see reverse side

Nautical Miles
Yards

UNITED STATES — EAST COAST
VIRGINIA
CHESAPEAKE BAY ENTRANCE
Mercator Projection
Scale 1:80,000 at Lat. 37°05'
North American 1927 Datum
SOUNDINGS IN FEET
AT MEAN LOW WATER

Published at Washington, D.C.
U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

FATHOMS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17
FEET 6 12 18 24 30 36 42 48 54 60 66 72 78 84 90 96 102
METERS 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
SOUNDINGS IN FEET - SCALE 1:80,000

(Chesapeake Bay Entrance)

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