

U.S. Department
of Transportation

United States
Coast Guard



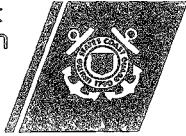
**Merchant Marine Deck
Examination Reference Material**

**Reprints from the
TIDE TABLES and
TIDAL CURRENT TABLES**

**This publication contains information to be used in
examinations for Merchant Marine Licenses**

NOT TO BE USED FOR NAVIGATION

COMDTPUB P16721.46



COMDTPUB P16721.46

AUG 16 1996

COMMANDANT PUBLICATION P16721.46

Subj: MERCHANT MARINE DECK EXAMINATION REFERENCE MATERIAL,
REPRINTS FROM THE TIDE TABLES AND TIDAL CURRENT TABLES

1. PURPOSE. This publication contains reference material for use during an examination for a merchant marine deck license. It contains excerpts from the Tide Tables and the Tidal Current Tables. This manual is current with the problems used in the examinations.
2. PROCEDURES. This publication is available to applicants taking a deck merchant marine examination. The covers available for sale from the Government Printing Office (GPO) are printed with red ink. The covers used in Regional Examination Centers are printed with green ink. Applicants who purchase copies of this publication from the GPO may not use their personal copies during examinations.
3. DISCUSSION. Applicants for merchant marine deck licenses are tested to ensure their professional qualification. Tide and current problems require the use of data contained in this publication.
4. ORDERING INFORMATION.
 - a. Regional Examination Centers will be provided with an initial supply of this publication. Replacement and additional copies are available through standard distribution sources.

DISTRIBUTION - SDL No. 134

	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	
A																											
B		1	1		1		1	1						1				1									
C					*								*														
D																											
E																											
F																											
G																											
H																											

NON-STANDARD DISTRIBUTION(See page 2.)

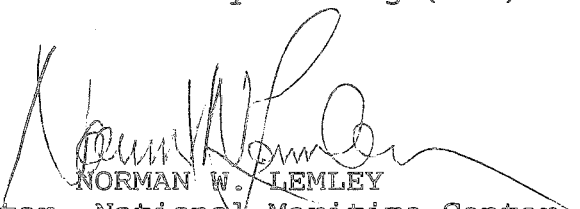
COMDTPUB P16721.46

16 1996

- b. The public and other Coast Guard units may order copies of this publication from the GPO at the following address:

Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402

This book may also be ordered by telephone and charged to a national credit card by calling (202) 783-3238.



NORMAN W. LEMLEY
Director, National Maritime Center

NON-STANDARD DISTRIBUTION:

C:e Toledo (350); Miami (225); New Orleans (150); Baltimore (100); Boston, San Francisco, Long Beach, Anchorage, Houston (75); Charleston; Portland, OR; Memphis, Puget Sound (30); Honolulu (20); St Louis (15); Norfolk, Guam, Juneau, San Juan, Ketchikan (10) (only)

C:m New York (250) (only)

INSTRUCTIONS

1. This reference contains extracts of the TIDE TABLES and TIDAL CURRENT TABLES. Some navigation problems require determining the tide or tidal current for a specific time of day. The data necessary for solving these problems is contained in this manual.

2. This manual is in two parts. Part one contains the information referring to tides. Part two contains the information referring to tidal currents.

3. Applicants who wish to comment on any material in this publication should complete a Comment/Protest form for the question involved and give it to the examiner.

4. Individuals not taking an examination who wish to make a comment about this publication should send a written comment, citing this publication and the appropriate page and paragraph to:

Director, National Maritime Center (NMC-4B)
U.S. Coast Guard
REPRINTS from TIDE and TIDAL CURRENT TABLES
4200 Wilson Blvd., Suite 510
Arlington, VA 22203-1804

All comments are welcomed and will be acknowledged. Valid comments will be incorporated into this publication.

**MERCHANT MARINE DECK EXAMINATION
REFERENCE MATERIAL**

PART TWO

**1983
TIDAL CURRENT
TABLES**

ATLANTIC COAST of NORTH AMERICA

CONTENTS

	Page
Astronomical data	inside back cover
Important Notices	IV
Introduction	v
List of reference stations	VI
Table 1.—Daily current predictions:	
Explanation of table	1
Typical current curves	3
Daily predictions for reference stations	4
Table 2.—Current differences and other constants and rotary tidal currents:	
Explanation of table	137
Current differences and other constants	140
Rotary tidal currents	187
Table 3.—Velocity of current at any time:	
Explanation of table	189
Velocity of current at any time	190
Table 4.—Duration of slack	191
Table 5.—Rotary tidal currents:	
Explanation of table	193
Rotary tidal current stations	195
The Gulf Stream	201
Wind-driven currents	203
The combination of currents	205
Current diagrams:	
Explanation	207
Current diagrams	208
Publications by the National Ocean Survey relating to tides and tidal currents	218
Glossary of terms	219
Index to stations	225

IMPORTANT NOTICES

Daylight saving time is not used in this publication. All daily tidal current predictions and predictions compiled by the use of Table 2 data are based on the standard time meridian indicated for each location. Predicted times may be converted to daylight saving times, where necessary, by adding 1 hour to these data. In converting times from the Astronomical Data page, it should be remembered that daylight saving time is based on a meridian 15° east of the normal standard meridian for a particular place.

Current data have been presented in a different format in Table 2. The new manner of presentation will enable the user to approximate more accurately the times and speeds of the various current phases. Slight changes in terminology also have been made. A full explanation of the proper use of the new table is given on the pages immediately preceding the data.

TIDAL CURRENT TABLES

INTRODUCTION

Current tables for the use of mariners have been published by the National Ocean Survey (formerly the Coast and Geodetic Survey) since 1890. Tables for the Atlantic coast first appeared as a part of the tide tables and consisted of brief directions for obtaining the times of the current for a few locations from the times of high and low waters. Daily predictions of slack water for five stations were given for the year 1916, and by 1923 the tables had so expanded that they were then issued as a separate publication entitled *Current Tables, Atlantic Coast*. A companion volume, *Current Tables, Pacific Coast*, was also issued that year. In 1930 the predictions for the Atlantic coast were extended to include the times and velocities of maximum current.

In the preparation of these tables, all available observations were used. In some cases, however, the observations were insufficient for obtaining final results, and as further information becomes available it will be included in subsequent editions. All persons using these tables are invited to send information or suggestions for increasing their usefulness to the Director, National Ocean Survey, Rockville, Md. 20852, U.S.A. The data for lightship stations are based on observations obtained through the cooperation of the U.S. Coast Guard. By cooperative arrangements, full predictions for Bay of Fundy Entrance (Grand Manan Channel) were furnished by the Canadian Hydrographic Service.

Daily predicted times of slack water and predicted times and velocities of maximum current (flood and ebb) are presented in table 1 for a number of reference stations. Similar predictions for many other locations may be obtained by applying the correction factors listed in table 2 to the predictions of the appropriate reference station. The velocity of a current at times between slack water and maximum current may be approximated by the use of table 3. The duration of weak current near the time of slack water may be computed by the use of table 4.

LIST OF REFERENCE STATIONS

	Page
Baltimore Harbor Approach (off Sandy Pt.), Md.	70
Bay of Fundy Entrance (Grand Manan Channel)	4
Boston Harbor (Deer Island Light), Mass.	16
Cape Cod Canal, Mass.	22
Charleston Harbor (off Ft. Sumter), S.C.	82
Chesapeake and Delaware Canal (Chesapeake City)	76
Chesapeake Bay Entrance	64
Delaware Bay Entrance	58
Galveston Bay Entrance, Tex.	124
Hell Gate, East River, N.Y.	46
Key West, Fla.	106
Miami Harbor Entrance, Fla.	100
Mobile Bay Entrance, Ala.	118
Pollock Rip Channel	28
Portsmouth Harbor Entrance, N.H.	10
St. Johns River Entrance, Fla.	94
Savannah River Entrance, Ga.	88
Tampa Bay Entrance Fla.	112
The Narrows, New York Harbor, N.Y.	52
The Race, Long Island Sound	34
Throgs Neck, Long Island Sound	40
Vieques Passage, Puerto Rico	130

TABLE 1.—DAILY CURRENT PREDICTIONS

EXPLANATION OF TABLE

This table gives the predicted times of slack water and the predicted times and velocities of maximum current—flood and ebb—for each day of the year at a number of stations on the Atlantic coast of North America. The times are given in hours and minutes and the velocities in knots.

Time.—The kind of time used for the predictions at each reference station is indicated by the time meridian at the bottom of each page.

Slack water and maximum current.—The columns headed "Slack water" contain the predicted times at which there is no current; or, in other words, the times at which the current has stopped setting in a given direction and is about to begin to set in the opposite direction. Offshore, where the current is rotary, slack water denotes the time of minimum current. Beginning with the slack water before flood the current increases in velocity until the strength or maximum velocity of the flood current is reached; it then decreases until the following slack water or slack before ebb. The ebb current now begins, increases to a maximum velocity, and then decreases to the next slack. The predicted times and velocities of maximum current are given in the columns headed "Maximum Current." Flood velocities are marked with an "F," the ebb velocities with an "E." An entry in the "Slack Water" column will be *slack, flood begins* if the maximum current which follows it is marked "F." Otherwise the entry will be *slack, ebb begins*.

Directions of set.—As the terms flood and ebb do not in all cases clearly indicate the direction of the current, the approximate directions toward which the currents flow are given at the top of each page to distinguish the two streams.

Number of slacks and strengths.—There are usually four slacks and four maximums each day. When a vacancy occurs in any day, the slack or maximum that seems to be missing will be found to occur soon after midnight as the first slack or maximum of the following day. At some stations where the diurnal inequality is large, there may be on certain days a continuous flood or ebb current with varying velocity throughout half the day giving only two slacks and two maximums on that particular day.

Current and tide.—It is important to notice that the predicted slacks and strengths given in this table refer to the horizontal motion of the water and not to the vertical rise and fall of the tide. The relation of current to tide is not constant, but varies from place to place, and the time of slack water does not generally coincide with the time of high or low water, nor does the time of maximum velocity of the current usually coincide with the time of most rapid change in the vertical height of the tide. At stations located on a tidal river or bay the time of slack water may differ from 1 to 3 hours from the time of high or low water. The times of high and low waters are given in the tide tables published by the National Ocean Survey.

Variations from predictions.—In using this table it should be borne in mind that actual times of slack or maximum occasionally differ from the predicted times by as much as half an hour and in rare instances the difference may be as much as an hour. Comparisons of predicted with observed times of slack water indicate that more than 90 percent of the slack waters occurred within half an hour of the predicted times. To make sure, therefore, of getting the full advantage of a favorable current or slack water, the navigator should reach the entrance or strait at least half an hour before the predicted time of the desired condition of current. Currents are frequently disturbed by wind or variations in river discharge. On days when the current is affected by such disturbing influences the times and velocities will differ from those given in the table, but local knowledge will enable one to make proper allowance for these effects.

Typical current curves.—The variations in the tidal current from day to day and from place to place are illustrated on the opposite page by the current curves for representative ports along the Atlantic and Gulf Coasts of the United States. Flood current is represented by the solid line curve above the zero velocity (slack water) line and the ebb current by the broken line curve below the slack water line. The curves show clearly that the currents along the Atlantic coast are semi-daily (two floods and two ebbs in a day) in character with their principal variations following changes in the Moon's distance and phase. In the Gulf of Mexico, however, the currents are daily in character. As the dominant factor is the change in the Moon's declination the currents in the Gulf tend to become semi-daily when the Moon is near the equator. By reference to the curves it will be noted that with this daily type of current there are times when the current may be erratic (marked with an asterisk), or one flood or ebb current of the day may be quite weak. Therefore in using the predictions of the current it is essential to carefully note the velocities as well as the times.

PORTSMOUTH HARBOR ENTRANCE (off Wood I.), N.H., 1983

F-Flood, Dir. 355° True E-Ebb, Dir. 195° True

JANUARY						FEBRUARY							
Day	Slack Water			Maximum Current			Day	Slack Water			Maximum Current		
	Time	h.m.	Vel.	Time	h.m.	Vel.		Time	h.m.	Vel.	Time	h.m.	Vel.
1 Sa	0139	0424	2.2E	0800	1017	1.8F	16 Su	0203	0435	1.5E	0822	1023	1.2F
	1352	1654	2.6E		1400	1.9E		1400	1658	1.9E		1400	1658
	2046	2253	1.6F		2103	1.0F		2103	2253	1.0F		2103	2253
2 Su	0234	0517	2.1E	0855	1110	1.7F	17 M	0240	0518	1.5E	0904	1106	1.2F
	1444	1745	2.5E		1430	1.9E		1430	1741	1.9E		1430	1741
	2138	2346	1.6F		2142	1.1F		2142	2338	1.1F		2142	2338
3 M	0329	0611	2.1E	0951	1201	1.6F	18 Tu	0316	0602	1.6E	0948	1149	1.1F
	1538	1838	2.4E		1538	2.4E		1456	1822	1.9E		1456	1822
	2231				2222			2222				2222	
4 Tu		0039	1.5F	0426	0706	2.0E	19 W		0021	1.1F	0352	0648	1.6E
		1050	1.4F		1254	1.4F		1034	1235	1.1F		1034	1235
		1634	2.2E		1634	2.2E		1523	1908	1.8E		1523	1908
		2326			2326			2303				2303	
5 W		0132	1.4F	0523	0803	1.8E	20 Th		0106	1.2F	0429	0733	1.6E
		1151	1.2F		1347	1.2F		1123	1324	1.1F		1123	1324
		1732	2.1E		1732	2.1E		1558	1955	1.8E		1558	1955
								2346				2346	
6 Th		0022	1.3F	0621	0902	1.7E	21 F		0153	1.2F	0513	0824	1.6E
		1253	1.0F		1445	1.0F		1217	1415	1.0F		1217	1415
		1832	1.9E		1832	1.9E		1644	2044	1.7E		1644	2044
7 F		0118	1.1F	0719	1008	1.7E	22 Sa		0034	1.2F	0605	0916	1.6E
		1356	0.8F		1544	0.8F		1315	1508	1.0E		1315	1508
		1932	1.7E		1932	1.7E		1743	2135	1.7E		1743	2135
8 Sa		0213	1.0F	0815	1124	1.7E	23 Su		0125	1.2F	0705	1011	1.7E
		1458	0.7F		1744	0.7F		1414	1603	1.0F		1414	1603
		2032	1.6E		2032	1.6E		1901	2232	1.7E		1901	2232
9 Su		0308	1.0F	0908	1246	1.7E	24 M		0219	1.3F	0808	1110	1.8E
		1556	0.7F		1947	0.7F		1512	1701	1.0F		1512	1701
		2129			2129			2023	2328	1.7E		2023	2328
10 M		0023	1.5E	0359	0657	1.0F	25 Tu		0315	1.4F	0909	1207	2.0E
		0959	1.7E		1341	1.7E		0909	1207	2.0E		0909	1207
		1650	0.8F		2040	0.8F		1609	1800	1.1F		1609	1800
		2222			2222			2134				2134	
11 Tu		0115	1.5E	0448	0758	1.0F	26 W		0027	1.8E	0411	0623	1.5F
		1046	1.8E		1420	1.8E		1007	1305	2.1E		1007	1305
		1739	0.8F		2129	0.8F		1703	1859	1.2F		1703	1859
		2312			2312			2238				2238	
12 W		0200	1.4E	0534	0734	1.0F	27 Th		0124	1.9E	0506	0721	1.6F
		1129	1.8E		1443	1.8E		1102	1400	2.3E		1102	1400
		1823	0.8F		2057	0.8F		1755	1956	1.4F		1755	1956
		2359			2359			2336				2336	
13 Th		0236	1.4E	0617	0816	1.0F	28 F		0220	2.0E	0600	0816	1.7F
		1211	1.9E		1510	1.9E		1156	1455	2.5E		1156	1455
		1905	0.8F		2051	0.8F		1846	2052	1.5F		1846	2052
14 F		0042	1.5E	0700	0858	1.1F	29 Sa		0031	2.1E	0653	0909	1.8F
		1249	1.9E		1542	1.9E		1248	1546	2.6E		1248	1546
		1945	0.9F		2131	0.9F		1936	2143	1.6F		1936	2143
15 Sa		0124	1.5E	0741	0940	1.1F	30 Su		0125	2.2E	0746	1002	1.8F
		1326	1.9E		1619	1.9E		1339	1637	2.6E		1339	1637
		2025	1.0F		2212	1.0F		2026	2236	1.6F		2026	2236
							31 M		0217	2.2E	0839	1052	1.7F
								1429	1727	2.5E		1429	1727
								2115	2325	1.6F		2115	2325

Time meridian 75° W. 0000 is midnight. 1200 is noon.

PORTSMOUTH HARBOR ENTRANCE (off Wood I.), N.H., 1983

11

F-Flood, Dir. 355° True E-Ebb, Dir. 195° True

MARCH												APRIL											
Slack Water Time			Maximum Current			Slack Water Time			Maximum Current			Slack Water Time			Maximum Current								
Day	h.m.	h.m.	Vel.	knots	Day	h.m.	h.m.	Vel.	knots	Day	h.m.	h.m.	Vel.	knots	Day	h.m.	h.m.	Vel.	knots				
1 Tu	0156	0442	2.3E		16 W	0138	0427	1.9E		1 F	0301	0550	2.1E		16 Sa	0214	0528	2.2E					
	0822	1033	1.6F			0815	1017	1.3F			0942	1139	1.3F			0918	1123	1.4F					
	1411	1705	2.4E			1343	1646	2.0E			1524	1808	1.9E			1435	1746	1.9E					
	2050	2302	1.6F			2033	2239	1.4F			2155					2123	2344	1.6F					
2 W	0244	0531	2.2E		17 Th	0210	0508	2.0E		2 Sa	0346	0634	2.0E		17 Su	0253	0618	2.2E					
	0913	1120	1.5F			0856	1100	1.3F			1032	1226	1.1F			1007	1212	1.3F					
	1500	1751	2.3E			1414	1727	2.0E			1612	1854	1.7E			1521	1835	1.9E					
	2138	2346	1.5F			2111	2324	1.5F			2244					2212							
3 Th	0332	0617	2.1E		18 F	0241	0553	2.0E		3 Su	0431	0720	1.8E		18 M	0339	0705	2.1E					
	1005	1207	1.4F			0939	1145	1.3F			1125	1311	0.9F			1100	1303	1.3F					
	1548	1838	2.1E			1445	1812	1.9E			1702	1940	1.5E			1619	1930	1.8E					
	2227					2150					2336					2308							
4 F		0031	1.4F		19 Sa		0009	1.5F		4 M	0520	0811	1.7E		19 Tu	0436	0758	2.0E					
	0420	0705	2.0E			0315	0638	2.0E			1221	1402	0.8F			1159	1356	1.2F					
	1058	1254	1.2F			1027	1233	1.3F			1758	2031	1.4E			1728	2025	1.7E					
	1638	1923	1.9E			1523	1857	1.9E															
	2317					2235																	
5 Sa	0510	0755	1.8E		20 Su	0356	0729	1.9E		5 Tu	0031	0218	0.9F		20 W	0011	0218	1.3F					
	1155	1342	1.0F			1119	1324	1.2F			0613	0903	1.6E			0544	0857	2.0E					
	1731	2014	1.6E			1611	1949	1.8E			1319	1451	0.7F			1300	1456	1.1F					
						2328					1857	2125	1.2E			1842	2127	1.6E					
6 Su	0010	0205	1.1F		21 M		0145	1.4F		6 W	0129	0311	0.8F		21 Th	0118	0319	1.2F					
	0603	0847	1.7E			0449	0820	1.9E			0710	0958	1.5E			0658	0958	1.9E					
	1254	1433	0.8F			1218	1417	1.1F			1416	1547	0.6F			1402	1557	1.1F					
	1829	2106	1.4E			1717	2044	1.7E			1956	2224	1.2E			1951	2230	1.6E					
7 M	0106	0254	0.9F		22 Tu	0027	0241	1.3F		7 Th	0228	0406	0.7F		22 F	0224	0421	1.1F					
	0658	0944	1.5E			0557	0918	1.9E			0808	1057	1.5E			0808	1103	1.9E					
	1354	1713	0.6F			1320	1514	1.1F			1510	1813	0.6F			1502	1700	1.1F					
	1929	2201	1.3E			1841	2143	1.6E			2053	2323	1.2E			2055	2338	1.7E					
8 Tu	0203	0348	0.8F		23 W	0132	0338	1.2F		8 F	0323	0502	0.7F		23 Sa	0326	0524	1.1F					
	0754	1040	1.5E			0713	1019	1.9E			0903	1154	1.5E			0912	1205	2.0E					
	1454	1744	0.5F			1423	1614	1.0F			1559	1904	0.7F			1558	1805	1.2F					
	2029	2300	1.2E			2000	2246	1.6E			2144					2153							
9 W	0300	0441	0.7F		24 Th	0238	0441	1.2F		9 Sa	0415	0621	1.3E		24 Su	0425	0644	1.9E					
	0850	1151	1.5E			0825	1122	1.9E			0955	1243	1.6E			1011	1306	2.1E					
	1549	1822	0.6F			1524	1717	1.1F			1644	1832	0.8F			1650	1905	1.3F					
	2126					2109	2350	1.7E			2231					2247							
10 Th		0004	1.2E		25 F	0340	0542	1.2F		10 Su	0502	0711	1.5E		25 M		0141	2.0E					
	0354	0713	0.7F			0930	1224	2.0E			0650	0950	0.9F			0519	0725	1.2F					
	0942	1250	1.6E			1621	1822	1.2F			1041	1331	1.7E			1105	1400	2.1E					
	1639	1910	0.7F			2210					1726	1918	1.0F			1739	1956	1.4F					
	2218										2314					2336							
11 F	0444	0633	0.8F		26 Sa	0439	0643	1.3F		11 M	0546	0737	1.0F		26 Tu	0610	0819	1.3F					
	1031	1334	1.6E			1029	1325	2.2E			1125	1410	1.8E			1156	1449	2.1E					
	1724	2012	0.7F			1714	1922	1.3F			1805	2003	1.2F			1826	2042	1.5F					
	2305					2306					2353												
12 Sa		0147	1.4E		27 Su		0154	2.0E		12 Tu		0238	1.8E		27 W	0023	0319	2.2E					
	0531	0721	0.9F			0533	0743	1.4F			0628	0824	1.1F			0659	0905	1.3F					
	1116	1411	1.7E			1124	1420	2.3E			1205	1453	1.9E			1244	1532	2.1E					
	1805	1954	0.9F			1804	2016	1.5F			1843	2046	1.3F			1912	2123	1.5F					
	2348					2357																	
13 Su		0226	1.6E		28 M		0249	2.2E		13 W	0030	0319	2.0E		28 Th	0107	0400	2.2E					
	0614	0807	1.0F			0625	0836	1.5F			0709	0907	1.3F			0746	0946	1.3F					
	1158	1448	1.8E			1215	1510	2.3E			1242	1534	2.0E			1330	1615	2.0E					
	1843	2037	1.0F			1851	2106	1.6F			1921	2129	1.5F			1956	2203	1.4F					
14 M	0028	0307	1.7E		29 Tu	0046	0338	2.2E		14 Th	0105	0400	2.1E		29 F	0150	0441	2.1E					
	0655	0853	1.1F			0715	0926	1.5F			0751	0951	1.3F			0833	1031	1.2F					
	1236	1525	1.9E			1304	1557	2.3E			1318	1617	2.0E			1415	1656	1.9E					
	1921	2116	1.2F			1938	2151	1.6F			1959	2212	1.5F			2040	2245	1.4F					
15 Tu	0104	0345	1.8E		30 W	0132	0421	2.3E		15 F	0138	0443	2.1E		30 Sa	0231	0524	2.1E					
	0735	0934	1.2F			0804	1013	1.5F			0833	1036	1.4F			0920	1114	1.1F					
	1311	1605	2.0E			1351	1639	2.2E			1355	1701	2.0E			1500	1737	1.7E					
	1957	2158	1.3F			2023	2234	1.6F			2039	2257	1.6F			2125	2326	1.3F					
					31 Th	0217	0507	2.2E															
						0853	1056	1.4F															
						1437	1723	2.1E															
						2109	2317	1.5F															

Time meridian 75° W. 0000 is midnight. 1200 is noon.

BOSTON HARBOR (Deer Island Light), MASSACHUSETTS, 1983

F-Flood, Dir. 254° True E-Ebb, Dir. 111° True

JANUARY

FEBRUARY

Slack Water			Maximum Current			Slack Water			Maximum Current			Slack Water			Maximum Current																																																																																																																																																																							
Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.																																																																																																																																																																					
	h.m.	knots		h.m.	knots		h.m.	knots		h.m.	knots		h.m.	knots		h.m.	knots																																																																																																																																																																					
1 Sa	0606 1153 1838	1.3E 1.4F 1.4F	16 Su	0000 0628 1208 1852	1.1E 1.1F 1.2E 1.2F	1 Tu	0102 0735 1321 2000	1.4E 1.3F 1.4E 1.3F	16 W	0047 0724 1302 1941	1.1E 1.3F 1.5E 1.4F	2 Su	0027 0659 1245 1930	1.3E 1.3F 1.4E 1.3F	17 M	0036 0709 1247 1932	1.0E 1.2F 1.1E 1.2F	2 W	0154 0830 1416 2054	1.3E 1.2F 1.3E	17 Th	0126 0808 1344 2024	1.2E 1.3F 1.2E 1.4F	3 M	0120 0755 1340 2026	1.2E 1.2F 1.3E 1.2F	18 Tu	0115 0751 1328 2014	1.0E 1.2F 1.1E 1.2F	3 Th	0012 0709 1244 1513 2054	1.2F 1.3E 1.1F 1.2E	18 F	0209 0855 1429 2110	1.2E 1.3F 1.1E 1.4F	4 Tu	0216 0852 1437 2122	1.2E 1.1F 1.2E	19 W	0156 0838 1412 2059	1.0E 1.2F 1.1E 1.2F	4 F	0343 1027 1613 2248	1.2F 1.3E 1.0F 1.2E	19 Sa	0255 0946 1519 2202	1.2E 1.2F 1.1E	5 W	0314 0953 1537 2221	1.1F 1.2E 1.0F 1.2E	20 Th	0241 0927 1500 2147	1.1E 1.2F 1.1E	5 Sa	0441 1127 1715 2347	1.1F 1.3E 1.0F 1.1E	20 Su	0345 1040 1613 2258	1.3F 1.2E 1.2F 1.0E	6 Th	0413 1056 1640 2321	1.1F 1.2E 1.0F 1.2E	21 F	0329 1018 1551 2238	1.3F 1.1E 1.0E	6 Su	0541 1228 1820	1.0F 1.3E 1.2E	21 M	0440 1138 1712 2356	1.3F 1.1E 1.1F 1.0E	7 F	0514 1158 1743	1.1F 1.3E 1.0F 1.2E	22 Sa	0421 1111 1646 2330	1.3F 1.1E 1.1F 1.0E	7 M	0644 1325 1932	1.0F 1.3E 1.2E	22 Tu	0538 1236 1814	1.2F 1.1E 1.1F 1.0E	8 Sa	0615 1258 1850	1.1F 1.4E 1.1F 1.3E	23 Su	0515 1207 1744	1.3F 1.1E 1.1F 1.0E	8 Tu	0140 0738 1419 2043	1.1F 1.4E 1.1F	23 W	0659 1333 1918	1.2F 1.1E 1.1E	9 Su	0715 1353 1956	1.1F 1.4E 1.1F 1.3E	24 M	0625 1301 1842	1.3F 1.2E 1.2F 1.1E	9 W	0231 0830 1507 2123	1.2E 1.1F 1.4E 1.1F	24 Th	0153 0740 1430 2018	1.2F 1.3E 1.2F	10 M	0810 1444 2053	1.2F 1.5E 1.2F	25 Tu	0120 0707 1358 1941	1.3F 1.3E 1.2F 1.2E	10 Th	0319 0914 1550 2154	1.2E 1.1F 1.4E 1.2F	25 F	0251 0839 1524 2116	1.3E 1.3F 1.5E 1.3F	11 Tu	0258 0857 1530 2136	1.2F 1.5E 1.2F	26 W	0216 0804 1451 2038	1.3F 1.4E 1.3F	11 F	0402 0954 1630 2227	1.2E 1.2F 1.4E 1.2F	26 Sa	0367 0935 1617 2210	1.4E 1.4F 1.5E 1.5F	12 W	0341 0938 1613 2212	1.3E 1.2F 1.5E 1.2F	27 Th	0310 0859 1544 2133	1.3E 1.4F 1.5E 1.4F	12 Sa	0444 1031 1709 2300	1.2E 1.2F 1.3E 1.2F	27 Su	0439 1029 1707 2301	1.5E 1.4F 1.6E 1.5F	13 Th	0425 1017 1654 2248	1.3E 1.2F 1.4E 1.2F	28 F	0402 0952 1636 2227	1.3E 1.4F 1.5E 1.5F	13 M	0524 1108 1746 2334	1.2F 1.3E 1.3F	28 M	0531 1120 1757 2351	1.5E 1.6E 1.5F	14 F	0507 1054 1734 2323	1.2F 1.3E 1.2F	29 Sa	0456 1045 1727 2319	1.4E 1.5F 1.5E 1.5F	14 M	0603 1144 1823	1.1E 1.2F 1.3F	15 Tu	0642 1222 1901	1.2F 1.2E 1.3F	15 Su	0338 0902 1555 2126	1.1E 1.2F 1.2E 1.2F	30 Tu	0316 0850 1538 2126	1.4E 1.5F 1.5E 1.5F	15 W	0600 1229 1909	1.1E 1.2F 1.3F	30 Th	0411 0946 1635 2219	1.4E 1.4F 1.5E 1.4F	31 M	0641 1229 1909	1.4F 1.5E 1.4F

Time meridian 75° W. 0000 is midnight. 1200 is noon.
At times of slack water before maximum ebb, the velocity actually averages 0.3 knot in a direction of 184° true.

BOSTON HARBOR (Deer Island Light), MASSACHUSETTS, 1983

17

F-Flood, Dir. 254° True E-Ebb, Dir. 111° True

MARCH

APRIL

Slack Water			Maximum Current			Slack Water			Maximum Current			Slack Water			Maximum Current		
Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.
	h.m.	knots		h.m.	knots		h.m.	knots		h.m.	knots		h.m.	knots		h.m.	knots
1		0354	1.5E	16		0313	1.2E	1	0102	0514	1.5E	16	0034	0333	1.3E		
Tu	0622	0933	1.5F	W	0617	0853	1.3F	F	0740	1051	1.3F	Sa	0718	0934	1.4F		
	1211	1615	1.5E		1157	1506	1.2E		1328	1739	1.3E		1257	1546	1.2E		
	1845	2159	1.5F		1831	2101	1.4F		1958	2309	1.3F		1930	2152	1.5F		
2	0040	0445	1.5E	17	0020	0324	1.3E	2	0149	0608	1.4E	17	0117	0412	1.3E		
W	0713	1024	1.4F	Th	0658	0918	1.3F	Sa	0830	1142	1.2F	Su	0806	1019	1.3F		
	1301	1709	1.4E		1237	1531	1.2E		1418	1836	1.2E		1343	1628	1.1E		
	1934	2248	1.4F		1911	2134	1.5F		2048	2359	1.2F		2020	2237	1.4F		
3	0129	0540	1.4E	18	0059	0352	1.3E	3	0237	0706	1.3E	18	0204	0457	1.2E		
Th	0805	1117	1.3F	F	0740	0957	1.4F	Su	0922	1237	1.1F	M	0858	1106	1.2F		
	1352	1806	1.3E		1319	1604	1.2E		1510	1935	1.1E		1433	1717	1.0E		
	2026	2340	1.3F		1955	2216	1.5F		2140				2114	2325	1.3F		
4	0219	0638	1.3E	19	0141	0430	1.3E	4		0055	1.1F	19	0255	0551	1.1E		
F	0859	1212	1.2F	Sa	0828	1040	1.3F	M	0328	0804	1.2E	Tu	0952	1158	1.1F		
	1446	1906	1.2E		1403	1645	1.1E		1018	1335	1.0F		1529	1817	0.9E		
	2118				2042	2300	1.4F		1605	2034	1.0E		2212				
5		0035	1.2F	20	0226	0515	1.2E	5		0155	1.0F	20		0020	1.1F		
Sa	0310	0737	1.3E	Su	0919	1127	1.2F	Tu	0422	0902	1.1E	W	0351	0659	1.1E		
	0954	1311	1.1F		1452	1733	1.1E		1113	1434	0.9F		1050	1256	1.0F		
	1542	2007	1.1E		2135	2349	1.3F		1703	2131	1.0E		1630	2104	0.9E		
	2212								2331				2314				
6		0134	1.1F	21	0316	0607	1.2E	6		0255	0.9F	21		0120	1.0F		
Su	0405	0837	1.2E	M	1013	1219	1.2F	W	0518	0958	1.1E	Th	0452	0933	1.1E		
	1051	1411	1.0F		1547	1830	1.0E		1210	1532	0.9F		1151	1454	0.9F		
	1641	2106	1.1E		2231				1801	2226	1.0E		1734	2207	1.0E		
	2310																
7		0234	1.0F	22		0041	1.2F	7	0029	0352	0.9F	22	0018	0325	0.9F		
M	0502	0935	1.2E	Tu	0411	0710	1.1E	Th	0615	1051	1.2E	F	0557	1035	1.2E		
	1151	1511	0.9F		1111	1315	1.1F		1304	1626	1.0F		1251	1614	1.0F		
	1743	2204	1.1E		1647	1941	0.9E		1858	2318	1.1E		1839	2306	1.2E		
					2332												
8	0009	0333	1.0F	23		0139	1.1F	8	0124	0447	1.0F	23	0119	0440	1.0F		
Tu	0600	1031	1.2E	W	0511	0941	1.1E	F	0710	1141	1.2E	Sa	0701	1131	1.3E		
	1250	1609	0.9F		1211	1420	1.0F		1355	1716	1.0F		1350	1714	1.1F		
	1847	2259	1.1E		1752	2224	1.0E		1950				1940				
9	0107	0430	1.0F	24	0034	0245	1.0F	9		0007	1.1E	24		0000	1.3E		
W	0658	1125	1.3E	Th	0615	1051	1.2E	Sa	0216	0536	1.0F	Su	0218	0539	1.1F		
	1344	1703	1.0F		1311	1625	1.0F		0801	1228	1.2E		0802	1225	1.4E		
	1951	2351	1.1E		1857	2323	1.1E		1441	1803	1.1F		1444	1808	1.3F		
									2036				2037				
10	0200	0522	1.0F	25	0136	0448	1.1F	10		0052	1.2E	25		0051	1.4E		
Th	0753	1215	1.3E	F	0719	1148	1.3E	Su	0302	0622	1.1F	M	0313	0633	1.3F		
	1435	1753	1.1F		1410	1730	1.2F		0848	1311	1.2E		0900	1314	1.5E		
	2043				1959				1524	1845	1.2F		1536	1858	1.4F		
									2118				2130				
11		0040	1.2E	26		0017	1.3E	11		0134	1.2E	26		0141	1.5E		
F	0250	0611	1.1F	Sa	0234	0553	1.2F	M	0347	0704	1.2F	Tu	0405	0723	1.3F		
	0842	1301	1.3E		0820	1241	1.4E		0931	1351	1.2E		0953	1403	1.5E		
	1520	1838	1.2F		1505	1826	1.3F		1604	1925	1.3F		1624	1945	1.5F		
	2122				2057				2157				2220				
12		0125	1.2E	27		0109	1.4E	12		0211	1.3E	27		0228	1.6E		
Sa	0337	0656	1.1F	Su	0330	0648	1.3F	Tu	0428	0742	1.3F	W	0453	0811	1.4F		
	0925	1344	1.3E		0918	1332	1.5E		1012	1422	1.2E		1043	1450	1.5E		
	1600	1921	1.2F		1557	1917	1.4F		1644	1957	1.4F		1711	2031	1.5F		
	2157				2151				2235				2306				
13		0207	1.2E	28		0158	1.5E	13		0238	1.3E	28		0315	1.6E		
Su	0418	0737	1.2F	M	0422	0740	1.4F	W	0509	0813	1.3F	Th	0541	0857	1.4F		
	1004	1424	1.3E		1011	1420	1.6E		1052	1427	1.2E		1131	1537	1.5E		
	1639	1959	1.3F		1646	2005	1.5F		1723	2016	1.4F		1758	2115	1.4F		
	2232				2241				2313				2351				
14		0245	1.2E	29		0247	1.6E	14		0240	1.3E	29		0402	1.5E		
M	0458	0814	1.2F	Tu	0512	0828	1.5F	Th	0550	0826	1.4F	F	0629	0943	1.4F		
	1042	1458	1.3E		1102	1508	1.6E		1132	1440	1.2E		1218	1625	1.4E		
	1717	2033	1.3F		1734	2052	1.5F		1803	2034	1.5F		1843	2159	1.4F		
	2306				2329				2353								
15		0316	1.2E	30		0334	1.6E	15		0301	1.3E	30	0036	0450	1.5E		
Tu	0538	0845	1.3F	W	0602	0916	1.5F	F	0632	0856	1.4F	Sa	0716	1028	1.3F		
	1119	1509	1.2E		1151	1556	1.5E		1214	1509	1.2E		1304	1716	1.2E		
	1753	2053	1.4F		1821	2137	1.5F		1846	2110	1.5F		1930	2242	1.3F		
	2342																
				31	0016	0423	1.6E										
				Th	0650	1003	1.4F										
					1240	1645	1.4E										
					1909	2222	1.4F										

Time meridian 75° W. 0000 is midnight. 1200 is noon. At times of slack water before maximum ebb, the velocity actually averages 0.3 knot in a direction of 184° true.

BOSTON HARBOR (Deer Island Light), MASSACHUSETTS, 1983

F-Flood, Dir. 254° True E-Ebb, Dir. 111° True

MAY				JUNE											
Day	Slack Water Time	Maximum Current Time	Maximum Current Vel.	Day	Slack Water Time	Maximum Current Time	Maximum Current Vel.	Day	Slack Water Time	Maximum Current Time	Maximum Current Vel.	Day	Slack Water Time	Maximum Current Time	Maximum Current Vel.
	h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots
1 Su	0120 0803 1350 2019	0541 1116 1808 2326	1.4E 1.2F 1.1E 1.2F	16 M	0057 0747 1327 2002	0402 1002 1621 2219	1.3E 1.3F 1.1E 1.3F	1 M	0221 0910 1455 2129	0655 1221 1925	1.1E 1.0F 1.0E	16 Th	0226 0917 1503 2142	0647 1221 1927	1.2E 1.1F 1.1E
2 M	0206 0852 1439 2109	0634 1205 1904	1.3E 1.3F 1.0E	17 Tu	0146 0839 1420 2059	0452 1051 1717 2311	1.2E 1.2F 1.0E 1.2F	2 Th	0309 0959 1543 2220	0018 0745 1308 2015	1.0F 1.1E 1.0F 1.0E	17 F	0324 1013 1601 2242	0048 0755 1332 2029	1.1F 1.2E 1.1F 1.1E
3 Tu	0253 0943 1529 2201	0730 1258 2000	1.2E 1.0F 1.0E	18 W	0239 0934 1516 2156	0553 1147 1939 2556	1.1E 1.1F 1.0E	3 F	0358 1048 1632 2311	0109 0836 1357 2105	1.0F 1.0E 1.0F 1.0E	18 Sa	0424 1111 1701 2343	0201 0857 1435 2129	1.0F 1.2E 1.1F 1.2E
4 W	0344 1037 1622 2256	0826 1354 2055	1.0F 1.1E 1.0E	19 Th	0337 1032 1616 2259	0007 0810 1304 2048	1.1F 1.1E 1.0F 1.0E	4 Sa	0450 1137 1723	0210 0927 1447 2155	1.0F 1.0E 1.1F 1.0E	19 Su	0526 1209 1800	0305 0955 1535 2226	1.0F 1.2E 1.1F 1.3E
5 Th	0437 1129 1716 2350	0920 1449 2148	0.9F 1.1E 1.0F 1.0E	20 F	0438 1132 1718	0157 0917 2149	0.9F 1.1E 1.1E	5 Su	0542 1226 1813	0306 1014 2242	1.0F 1.0E 1.1E	20 M	0628 1306 1859	0404 1051 2320	1.0F 1.2E 1.1E 1.4E
6 F	0531 1220 1809	0309 1012 1542 2240	0.9F 1.1E 1.0F 1.0E	21 Sa	0001 0541 1231 1820	0322 1016 1557 2246	1.0F 1.2E 1.1F 1.2E	6 M	0054 0634 1313 1903	0358 1059 1619 2325	1.1F 1.0E 1.2F 1.1E	21 Tu	0141 0728 1400 1954	0500 1145 1724	1.1F 1.3E 1.2F
7 Sa	0625 1310 1901	0404 1102 1633 2328	1.0F 1.1E 1.1F 1.1E	22 Su	0102 0644 1329 1919	0425 1112 1654 2341	1.0F 1.3E 1.1F 1.3E	7 Tu	0144 0725 1401 1951	0446 1139 1700	1.1F 1.1E 1.3F	22 W	0235 0826 1451 2047	0012 0553 1237 1814	1.4E 1.1F 1.3E 1.2F
8 Su	0718 1358 1949	0454 1149 1719	1.0F 1.1E 1.2F	23 M	0200 0745 1422 2016	0521 1205 1747	1.1F 1.3E 1.2F	8 W	0233 0816 1449 2039	0005 0530 1210 1738	1.2E 1.2F 1.1E 1.3F	23 Th	0327 0919 1540 2135	0102 0643 1326 1903	1.5E 1.2F 1.3E 1.2F
9 M	0807 1442 2034	0013 0541 1231 1802	1.2E 1.1F 1.2E 1.2F	24 Tu	0255 0842 1513 2109	0032 0614 1256 1837	1.4E 1.2F 1.4E 1.3F	9 Th	0321 0905 1537 2126	0036 0612 1235 1816	1.3E 1.3F 1.2E 1.4F	24 F	0414 1008 1628 2220	0151 0732 1414 1949	1.5E 1.2F 1.3E 1.2F
10 Tu	0854 1527 2118	0055 0624 1309 1841 2118	1.2E 1.2F 1.2E 1.3F	25 W	0346 0935 1602 2157	0122 0704 1345 1924	1.5E 1.3F 1.4E 1.3F	10 F	0409 0953 1624 2213	0106 0651 1314 1858	1.3E 1.3F 1.2E 1.4F	25 Sa	0500 1052 1712 2303	0238 0818 1501 2034	1.5E 1.2F 1.3E 1.2F
11 W	0939 1610 2201	0130 0702 1337 1912	1.3E 1.3F 1.2E 1.4F	26 Th	0434 1025 1649 2243	0210 0752 1433 2010	1.5E 1.3F 1.4E 1.4F	11 Sa	0458 1042 1712 2301	0142 0733 1357 1942	1.4E 1.4F 1.2E 1.5F	26 Su	0544 1134 1758 2345	0324 0902 1547 2117	1.4E 1.2F 1.2E 1.2F
12 Th	1023 1653 2243	0153 0735 1348 1935	1.3E 1.3F 1.2E 1.4F	27 F	0521 1111 1734 2327	0257 0838 1520 2054	1.5E 1.3F 1.4E 1.3F	12 Su	0547 1131 1802 2350	0224 0816 1444 2029	1.4E 1.4F 1.2E 1.4F	27 M	0628 1216 1841	0408 0946 2158	1.4E 1.2F 1.2E 1.1F
13 F	1107 1738 2326	0209 0800 1416 2008	1.3E 1.4F 1.2E 1.5F	28 Sa	0607 1156 1820	0343 0923 1607 2137	1.5E 1.3F 1.3E 1.3F	13 M	0637 1221 1854	0312 0904 1535 2118	1.4E 1.3F 1.2E 1.4F	28 Tu	0710 1257 1927	0452 1027 2236	1.3E 1.1F 1.1E 1.1F
14 Sa	1152 1822	0240 0834 1452 2047	1.4E 1.4F 1.2E 1.5F	29 Su	0610 0651 1240 1906	0429 1007 1654 2219	1.4E 1.2F 1.2E 1.2F	14 Tu	0040 0728 1313 1948	0404 0955 1637 2210	1.3E 1.3F 1.1E 1.3F	29 W	0753 1338 2011	0535 1105 2301	1.2E 1.1F 1.0E 1.1F
15 Su	1239 1911	0011 0657 1239 1834 2132	1.4E 1.4F 1.2E 1.4F	30 M	0053 0738 1324 1951	0517 1051 1743 2301	1.3E 1.1F 1.1E 1.1F	15 W	0132 0821 1407 2044	0513 1054 1817 2309	1.2E 1.2F 1.1E 1.2F	30 Th	0838 1421 2058	0616 1135 1843 2320	1.1E 1.1F 1.0E 1.1F
				31 To	0136 0823 1409 2040	0605 1136 1833 2340	1.2E 1.1F 1.0E 1.1F								

Time meridian 75° W. 0000 is midnight. 1200 is noon. At times of slack water before maximum ebb, the velocity actually averages 0.3 knot in a direction of 184° true.

CAPE COD CANAL (RR. Bridge), MASSACHUSETTS, 1983

F-Flood, Dir. 070° True E-Ebb, Dir. 250° True

JANUARY						FEBRUARY								
Day	Slack Water		Maximum Current		Day	Slack Water		Maximum Current		Day	Slack Water		Maximum Current	
	Time	Vel.	Time	Vel.		Time	Vel.	Time	Vel.		Time	Vel.	Time	Vel.
	h.m.	knots	h.m.	knots		h.m.	knots	h.m.	knots		h.m.	knots	h.m.	knots
1			0118	4.8E	16			0137	4.1E	1			0240	4.8E
Sa	0419		0718	4.6F	Su	0438		0733	3.9F	Tu	0545		0844	4.6F
	1029		1337	5.1E		1049		1349	4.5E		1158		1459	5.1E
	1646		1952	4.9F		1700		2003	4.2F		1811		2117	4.8F
	2322					2335					1747		2048	4.3F
2			0209	4.7E	17			0216	4.1E	2			0329	4.7E
Su	0511		0807	4.5F	M	0515		0810	3.9F	W	0635		0935	4.4F
	1120		1427	5.1E		1126		1431	4.4E		1251		1549	4.8E
	1737		2045	4.9F		1737		2039	4.2F		1901		2207	4.6F
3			0300	4.7E	18			0258	4.1E	3			0420	4.5E
M	0604		0859	4.4F	Tu	0553		0847	3.9F	Th	0727		1029	4.2F
	1214		1519	5.0E		1204		1512	4.4E		1347		1643	4.6E
	1830		2138	4.7F		1815		2116	4.1F		1954		2259	4.3F
4			0354	4.6E	19			0341	4.0E	4			0511	4.3E
Tu	0659		0956	4.3F	W	0633		0928	3.8F	F	0823		1122	4.0F
	1311		1613	4.8E		1244		1555	4.3E		1447		1737	4.3E
	1926		2233	4.6F		1856		2158	4.0F		2049		2353	4.0F
5			0449	4.4E	20			0426	4.0E	5			0607	4.1E
W	0757		1055	4.1F	Th	0717		1013	3.8F	Sa	0922		1226	3.8F
	1411		1709	4.6E		1329		1642	4.1E		1550		1835	4.0E
	2023		2333	4.3F		1940		2239	3.9F		2148			
6			0547	4.3E	21			0512	3.9E	6			0054	3.7F
Th	0857		1159	3.9F	F	0805		1102	3.7F	Su	0417		0706	4.0E
	1515		1809	4.4E		1421		1733	4.0E		1023		1335	3.7F
	2123					2029		2330	3.9F		1655		1936	3.8E
7			0644	4.1F	22			0603	3.9E	7			0201	3.6F
F	0400		0743	4.2E	Sa	0858		1153	3.7F	M	0515		0804	3.9E
	1000		1305	3.8F		1521		1828	4.0E		1126		1449	3.7F
	1621		1909	4.2E		2124					1759		2035	3.7E
	2224										2351			
8			0743	4.1E	23			0658	4.0E	8			0308	3.5F
Sa	0457		0743	4.1E	Su	0357		0658	4.0E	Tu	0611		0901	4.0E
	1102		1418	3.8F		0957		1255	3.7F		1224		1552	3.8F
	1725		2009	4.0E		1626		1926	3.9E		1857		2137	3.7E
	2325					2224								
9			0842	4.1E	24			0756	4.1E	9			0406	3.6F
Su	0551		0842	4.1E	M	0454		0756	4.1E	W	0703		0954	4.1E
	1201		1521	3.9F		1059		1400	3.9F		1317		1641	3.9F
	1826		2108	4.0E		1734		2027	4.0E		1949		2227	3.8E
10			0934	3.8F	25			0855	4.3E	10			0451	3.7F
M	0643		0934	3.8F	Tu	0551		0855	4.3E	Th	0750		1043	4.2E
	1254		1619	4.0F		1201		1505	4.1F		1404		1728	4.0F
	1921		2203	4.0E		1838		2127	4.1E		2035		2313	3.9E
11			1023	4.3E	26			0950	4.5E	11			0532	3.8F
Tu	0730		1023	4.3E	W	0648		0950	4.5E	F	0834		1129	4.3E
	1343		1706	4.1F		1301		1609	4.3F		1446		1805	4.1F
	2011		2248	4.0E		1938		2222	4.3E		2116		2354	4.1E
12			1106	4.3E	27			1047	4.8E	12			0607	3.9F
W	0815		1106	4.3E	Th	0742		1047	4.8E	Sa	0914		1208	4.4E
	1427		1747	4.1F		1357		1706	4.6F		1524		1837	4.2F
	2057		2336	4.0E		2033		2317	4.5E		2155			
13			1149	4.4E	28			1138	5.0E	13			0033	4.2E
Th	0856		1149	4.4E	F	0835		1138	5.0E	Su	0340		0640	4.0F
	1508		1824	4.2F		1450		1800	4.8F		0952		1248	4.5E
	2139					2125					1601		1906	4.3F
14			1231	4.5E	29			1229	5.1E	14			0112	4.2E
F	0324		0627	3.9F	Sa	0314		0613	4.5F	M	0415		0714	4.1F
	0935		1231	4.5E		0926		1229	5.1E		1028		1327	4.6E
	1546		1857	4.2F		1541		1850	4.9F		1636		1939	4.3F
	2219					2216					2306			
15			1310	4.5E	30			1320	5.2E	15			0150	4.3E
Sa	0402		0700	3.9F	Su	0405		0704	4.6F	Tu	0450		0747	4.1F
	1013		1310	4.5E		1016		1320	5.2E		1104		1406	4.6E
	1623		1928	4.2F		1632		1939	5.0F		1711		2011	4.3F
	2257					2305					2340			
					31			0151	4.8E					
					M	0455		0755	4.7F					
						1107		1409	5.2E					
						1721		2029	4.9F					
						2354								

Time meridian 75° W. 0000 is midnight. 1200 is noon.

CAPE COD CANAL (RR. Bridge), MASSACHUSETTS, 1983

F-Flood, Dir. 070° True E-Ebb, Dir. 250° True

MAY				JUNE															
Day	Slack Water		Maximum Current		Day	Slack Water		Maximum Current		Day	Slack Water		Maximum Current						
	Time	Vel.	Time	Vel.		Time	Vel.	Time	Vel.		Time	Vel.	Time	Vel.					
	h.m.	knots	h.m.	knots		h.m.	knots	h.m.	knots		h.m.	knots	h.m.	knots					
1 Su	0558 1234 1820	4.5E 4.2F 4.1E 3.8F	0248 0903 1516 2115	4.5E 4.2F 4.1E 3.8F	16 M	0539 1217 1807	4.8E 4.6F 4.4E 4.2F	0237 0843 1510 2100	4.8E 4.6F 4.4E 4.2F	1 W	0700 1346 1925	4.2E 3.9F 3.7E 3.4F	0354 1002 1627 2216	4.2E 3.9F 3.7E 3.4F	16 Th	0058 0715 1359 1948	4.8E 4.6F 4.4E 4.1F	0407 1023 1645 2242	4.8E 4.6F 4.4E 4.1F
2 M	0033 0642 1323 1906	4.3E 4.0F 3.9E 3.6F	0335 0946 1605 2157	4.3E 4.0F 3.9E 3.6F	17 Tu	0015 0632 1314 1902	4.7E 4.5F 4.3E 4.0F	0328 0938 1604 2154	4.7E 4.5F 4.3E 4.0F	2 Th	0136 0748 1437 2017	4.0E 3.8F 3.7E 3.3F	0443 1052 1717 2309	4.0E 3.8F 3.7E 3.3F	17 F	0200 0815 1458 2051	4.6E 4.4F 4.3E 4.0F	0505 1124 1743 2348	4.6E 4.4F 4.3E 4.0F
3 Tu	0119 0730 1417 1957	4.1E 3.8F 3.7E 3.3F	0423 1033 1656 2249	4.1E 3.8F 3.7E 3.3F	18 W	0110 0729 1415 2003	4.6E 4.4F 4.2E 3.9F	0423 1036 1702 2255	4.6E 4.4F 4.2E 3.9F	3 F	0231 0840 1529 2113	3.9E 3.7F 3.6E	0534 1147 1810	3.9E 3.7F 3.6E	18 Sa	0305 0917 1558 2155	4.5E 4.3F 4.3E	0604 1228 1843	4.5E 4.3F 4.3E
4 W	0212 0823 1514 2055	3.9E 3.6F 3.5E 3.2F	0514 1130 1750 2348	3.9E 3.6F 3.5E 3.2F	19 Th	0213 0831 1520 2110	4.5E 4.3F 4.1E	0522 1141 1804	4.5E 4.3F 4.1E	4 Sa	0329 0935 1622 2210	3.3F 3.8E 3.7F 3.7E	0006 0629 1240 1905	3.3F 3.8E 3.7F 3.7E	19 Su	0412 1020 1656 2258	3.9F 4.4E 4.2F 4.3E	0056 0707 1334 1943	3.9F 4.4E 4.2F 4.3E
5 Th	0312 0921 1613 2157	3.8E 3.5F 3.5E	0610 1230 1848	3.8E 3.5F 3.5E	20 F	0322 0937 1624 2218	3.8F 4.4E 4.2F 4.1E	0004 0625 1250 1907	3.8F 4.4E 4.2F 4.1E	5 Su	0428 1030 1713 2305	3.3F 3.9E 3.7F 3.8E	0104 0725 1335 1957	3.3F 3.9E 3.7F 3.8E	20 M	0517 1121 1752 2357	4.0F 4.3E 4.2F 4.3E	0207 0806 1439 2039	4.0F 4.3E 4.2F 4.3E
6 F	0415 1021 1709 2258	3.1F 3.8E 3.6F 3.6E	0051 0708 1334 1947	3.1F 3.8E 3.6F 3.6E	21 Sa	0431 1043 1724 2322	3.8F 4.4E 4.3F 4.2E	0116 0728 1400 2009	3.8F 4.4E 4.3F 4.2E	6 M	0525 1123 1800 2356	3.5F 4.0E 3.8F 4.0E	0201 0818 1429 2049	3.5F 4.0E 3.8F 4.0E	21 Tu	0619 1220 1844	4.1F 4.3E 4.2F 4.4E	0311 0905 1534 2133	4.1F 4.3E 4.2F 4.4E
7 Sa	0515 1119 1800 2352	3.3F 3.8E 3.7F 3.8E	0157 0806 1433 2042	3.3F 3.8E 3.7F 3.8E	22 Su	0537 1146 1820	4.0F 4.4E 4.3F 4.4E	0228 0831 1504 2108	4.0F 4.4E 4.3F 4.4E	7 Tu	0618 1214 1845	3.7F 4.1E 3.9F 4.2E	0255 0911 1518 2137	3.7F 4.1E 3.9F 4.2E	22 W	0052 0716 1313 1932	4.0F 4.3E 4.1F 4.5E	0406 1001 1627 2224	4.0F 4.3E 4.1F 4.5E
8 Su	0609 1211 1847	3.5F 4.0E 4.0E	0255 0858 1524 2131	3.5F 4.0E 4.0E	23 M	0638 1244 1911	4.1F 4.5E 4.4F 4.5E	0331 0930 1559 2159	4.1F 4.5E 4.4F 4.5E	8 W	0709 1303 1928	3.9F 4.2E 4.4E	0346 0958 1606 2225	3.9F 4.2E 4.1F 4.4E	23 Th	0809 1402 2017	4.3F 4.1F 4.5E	0501 1050 1713 2310	4.3F 4.3E 4.1F 4.5E
9 M	0659 1259 1930	4.2E 4.0F 4.2E	0343 0950 1609 2216	3.7F 4.2E 4.0F 4.2E	24 Tu	0734 1336 1958	4.3F 4.5E 4.4F 4.6E	0426 1022 1648 2248	4.3F 4.5E 4.4F 4.6E	9 Th	0757 1350 2010	4.2F 4.4E 4.2F 4.6E	0432 1048 1648 2309	4.2F 4.4E 4.2F 4.6E	24 F	0857 1448 2100	4.3F 4.2E 4.5E	0544 1139 1754 2354	4.3F 4.2E 4.0F 4.5E
10 Tu	0744 1343 2009	4.0F 4.3E 4.2F 4.4E	0425 1035 1648 2300	4.0F 4.3E 4.2F 4.4E	25 W	0826 1424 2042	4.4F 4.6E 4.4F 4.7E	0516 1112 1733 2334	4.4F 4.6E 4.4F 4.7E	10 F	0845 1437 2053	4.4F 4.5E 4.3F 4.8E	0520 1135 1736 2355	4.4F 4.5E 4.3F 4.8E	25 Sa	0943 1530 2141	4.3F 4.2E 4.0F	0625 1221 1833	4.3F 4.2E 4.0F
11 W	0828 1425 2047	4.5E 4.3F 4.6E	0507 1120 1727 2341	4.2F 4.5E 4.3F 4.6E	26 Th	0914 1509 2124	4.5F 4.5E 4.3F	0601 1159 1814	4.5F 4.5E 4.3F	11 Sa	0933 1523 2136	4.6E 4.4F	0607 1223 1820	4.6F 4.6E 4.4F	26 Su	0353 1026 1610 2220	4.5E 4.3F 4.1E 3.9F	0037 0705 1305 1909	4.5E 4.3F 4.1E 3.9F
12 Th	0246 0910 1506 2124	4.4F 4.6E 4.4F	0546 1203 1804	4.4F 4.6E 4.4F	27 F	0331 1000 1551 2204	4.7E 4.5F 4.4E 4.2F	0017 0642 1243 1851	4.7E 4.5F 4.4E 4.2F	12 Su	0348 1022 1611 2221	4.9E 4.7F 4.6E 4.4F	0041 0653 1311 1908	4.9E 4.7F 4.6E 4.4F	27 M	0432 1108 1649 2259	4.5E 4.2F 4.1E 3.8F	0118 0742 1346 1944	4.5E 4.2F 4.1E 3.8F
13 F	0326 0953 1547 2202	4.7E 4.5F 4.6E 4.4F	0627 1247 1845	4.7E 4.5F 4.6E 4.4F	28 Sa	0412 1044 1632 2243	4.7E 4.4F 4.3E 4.1F	0100 0719 1326 1927	4.7E 4.4F 4.3E 4.1F	13 M	0436 1113 1701 2309	4.9E 4.7F 4.6E 4.4F	0130 0741 1402 1957	4.9E 4.7F 4.6E 4.4F	28 Tu	0511 1149 1728 2339	4.4E 4.2F 4.0E 3.8F	0159 0817 1428 2021	4.4E 4.2F 4.0E 3.8F
14 Sa	0408 1038 1631 2242	4.8E 4.6F 4.6E 4.4F	0105 0711 1333 1926	4.8E 4.6F 4.6E 4.4F	29 Su	0453 1128 1712 2322	4.6E 4.3F 4.2E 3.9F	0141 0800 1409 2008	4.6E 4.3F 4.2E 3.9F	14 Tu	0526 1206 1753	4.9E 4.7F 4.5E 4.3F	0218 0832 1453 2048	4.9E 4.7F 4.5E 4.3F	29 W	0551 1230 1809	4.4E 4.1F 3.9E 3.7F	0240 0853 1512 2100	4.4E 4.1F 3.9E 3.7F
15 Su	0452 1125 1717 2326	4.8E 4.6F 4.5E 4.3F	0151 0756 1419 2013	4.8E 4.6F 4.5E 4.3F	30 M	0533 1212 1753	4.5E 4.2F 4.0E 3.7F	0222 0837 1453 2046	4.5E 4.2F 4.0E 3.7F	15 W	0619 1301 1849	4.9E 4.7F 4.5E 4.2F	0312 0926 1548 2144	4.9E 4.7F 4.5E 4.2F	30 Th	0631 1312 1852	4.3E 4.0F 3.9E 3.6F	0325 0936 1555 2145	4.3E 4.0F 3.9E 3.6F
					31 Tu	0616 1258 1837	4.3E 3.9E 3.6F	0307 0919 1538 2129	4.3E 4.0F 3.9E 3.6F										

Time meridian 75° W. 0000 is midnight. 1200 is noon.

CAPE COD CANAL (RR. Bridge), MASSACHUSETTS, 1983

25

F-Flood, Dir. 070° True E-Ebb, Dir. 250° True

JULY								AUGUST											
Day	Slack Water		Maximum Current		Day	Slack Water		Maximum Current		Day	Slack Water		Maximum Current						
	Time	Vel.	Time	Vel.		Time	Vel.	Time	Vel.		Time	Vel.	Time	Vel.					
	h.m.	knots	h.m.	knots		h.m.	knots	h.m.	knots		h.m.	knots	h.m.	knots					
1 F	0103 0715 1357 1939	4.1E 3.9F 3.8E 3.6F	0410 1017 1642 2229	4.1E 3.9F 3.8E 3.6F	16 Sa	0142 0754 1430 2026	4.7E 4.5F 4.4E 4.1F	0442 1102 1717 2325	4.7E 4.5F 4.4E 4.1F	1 M	0203 0809 1441 2036	4.0E 3.8F 3.9E 3.7F	0514 1111 1740 2332	4.0E 3.8F 3.9E 3.7F	16 Tu	0324 0923 1550 2157	4.1E 3.9F 4.1E 3.9E	0610 1229 1840 2457	4.1E 3.9F 4.1E 3.9E
2 Sa	0151 0801 1443 2028	4.0E 3.8F 3.8E 3.5F	0459 1104 1731 2318	4.0E 3.8F 3.8E 3.5F	17 Su	0244 0852 1527 2127	4.5E 4.3F 4.3E 4.0E	0540 1159 1813 2427	4.5E 4.3F 4.3E 4.0E	2 Tu	0258 0901 1532 2132	3.9E 3.7F 3.9E 3.7F	0607 1200 1835 2432	3.9E 3.7F 3.9E 3.7F	17 W	0430 1025 1649 2300	3.8F 3.9E 3.7F 4.0E	0108 0711 1338 1939	3.8F 3.9E 3.7F 4.0E
3 Su	0244 0850 1532 2121	4.0E 3.8F 3.8E 3.5F	0550 1153 1822 2421	4.0E 3.8F 3.8E 3.5F	18 M	0349 0953 1625 2229	4.0F 4.3E 4.1F 4.2E	0030 0640 1303 1912	4.0F 4.3E 4.1F 4.2E	3 W	0401 0957 1626 2231	3.7F 3.9E 3.7F 4.0E	0029 0700 1257 1930	3.7F 3.9E 3.7F 4.0E	18 Th	0535 1129 1747 2300	3.8E 3.6F 4.0E 3.8E	0222 0812 1445 2038	3.8E 3.6F 4.0E 3.8E
4 M	0340 0943 1622 2216	3.5F 3.9E 3.7F 3.9E	0015 0642 1245 1913	3.5F 3.9E 3.7F 3.9E	19 Tu	0454 1054 1721 2330	3.9F 4.1E 4.2E 4.2E	0139 0740 1408 2010	3.9F 4.1E 3.9F 4.2E	4 Th	0506 1057 1723 2332	3.8F 3.9E 3.7F 4.1E	0131 0800 1358 2027	3.8F 3.9E 3.7F 4.1E	19 F	0001 0635 1228 1842	3.8F 3.8E 3.6F 4.1E	0327 0913 1546 2134	3.8F 3.8E 3.6F 4.1E
5 Tu	0440 1037 1712 2311	3.6F 3.9E 3.8F 4.0E	0110 0737 1340 2007	3.6F 3.9E 3.8F 4.0E	20 W	0558 1155 1816 2429	4.0F 4.0E 3.9F 4.2E	0248 0839 1510 2108	4.0F 4.0E 3.9F 4.2E	5 F	0610 1158 1820 2432	3.9F 4.0E 3.9F 4.4E	0236 0858 1458 2123	3.9F 4.0E 3.9F 4.4E	20 Sa	0057 0729 1321 1932	3.9F 3.8E 3.7F 4.2E	0424 1007 1636 2225	3.9F 3.8E 3.7F 4.2E
6 W	0539 1133 1802	3.7F 4.0E 3.8F 4.2E	0209 0833 1433 2100	3.7F 4.0E 3.8F 4.2E	21 Th	0657 1251 1907	4.0F 4.0E 4.3E	0349 0937 1605 2200	4.0F 4.0E 4.3E 4.3E	6 Sa	0032 0710 1258 1914	4.2F 4.2E 4.0F 4.6E	0337 0956 1557 2219	4.2F 4.2E 4.0F 4.6E	21 Su	0146 0817 1407 2017	4.1F 3.9E 3.8F 4.3E	0513 1056 1717 2311	4.1F 3.9E 3.8F 4.3E
7 Th	0006 0636 1227 1851	3.9F 4.1E 4.0F 4.4E	0307 0927 1528 2151	3.9F 4.1E 4.0F 4.4E	22 F	0121 0751 1342 1954	4.1F 4.0E 3.8F 4.3E	0443 1031 1654 2249	4.1F 4.0E 3.8F 4.3E	7 Su	0129 0806 1354 2007	4.4F 4.4E 4.3F 4.9E	0438 1051 1654 2313	4.4F 4.4E 4.3F 4.9E	22 M	0230 0859 1448 2058	4.1F 4.1E 3.9F 4.4E	0550 1139 1754 2353	4.1F 4.1E 3.9F 4.4E
8 F	0058 0731 1320 1939	4.2F 4.3E 4.1F 4.6E	0403 1019 1619 2241	4.2F 4.3E 4.1F 4.6E	23 Sa	0209 0839 1428 2039	4.1F 4.0E 3.9F 4.4E	0532 1117 1739 2333	4.1F 4.0E 3.9F 4.4E	8 M	0222 0858 1447 2059	4.7F 4.6E 4.4F 5.0E	0532 1144 1745 2359	4.7F 4.6E 4.4F 5.0E	23 Tu	0309 0939 1525 2137	4.2F 4.2E 4.0F 4.5E	0621 1217 1827 2437	4.2F 4.2E 4.0F 4.5E
9 Sa	0150 0824 1412 2027	4.4F 4.4E 4.3F 4.8E	0455 1110 1712 2332	4.4F 4.4E 4.3F 4.8E	24 Su	0252 0924 1510 2120	4.2F 4.1E 3.9F 4.5E	0609 1200 1814 2420	4.2F 4.1E 3.9F 4.5E	9 Tu	0314 0949 1538 2150	5.0E 4.9F 4.8E 4.6F	0004 0621 1234 1837	5.0E 4.9F 4.8E 4.6F	24 W	0346 1015 1601 2214	4.2F 4.2E 4.0F 4.5E	0654 1256 1900 2454	4.2F 4.2E 4.0F 4.5E
10 Su	0240 0916 1503 2115	4.6F 4.6E 4.4F 4.9E	0546 1202 1802 2415	4.6F 4.6E 4.4F 4.9E	25 M	0333 0905 1549 2159	4.2F 4.1E 3.9F 4.5E	0648 1241 1847 2440	4.2F 4.1E 3.9F 4.5E	10 W	0405 0938 1528 2240	5.2E 5.0F 4.8E 4.7F	0055 0713 1325 1928	5.2E 5.0F 4.8E 4.7F	25 Th	0421 1050 1635 2250	4.5E 4.3F 4.3E 4.1F	0110 1334 1932 2550	4.5E 4.3F 4.3E 4.1F
11 M	0330 1006 1654 2204	4.8F 4.6E 4.5F 4.9E	0023 0637 1253 1851	5.0E 4.8F 4.6E 4.5F	26 Tu	0411 0944 1626 2237	4.2F 4.1E 3.9F 4.5E	0056 0719 1322 1923	4.5E 4.2F 4.1E 3.9F	11 Th	0455 1126 1718 2332	5.2E 5.0F 4.7F 4.9E	0144 0802 1414 2017	5.2E 5.0F 4.7F 4.9E	26 F	0456 1124 1710 2326	4.5E 4.3F 4.1F 4.5E	0149 0756 1412 2007	4.5E 4.3F 4.1F 4.5E
12 Tu	0421 1057 1645 2255	4.9F 4.7E 4.5F 4.9E	0112 0727 1344 1942	5.1E 4.9F 4.7E 4.5F	27 W	0448 1122 1703 2315	4.2F 4.1E 3.9F 4.5E	0136 0752 1402 1959	4.5E 4.2F 4.1E 3.9F	12 F	0545 1215 1808 2408	5.1E 4.9F 4.8E 4.6F	0234 0850 1503 2108	5.1E 4.9F 4.8E 4.6F	27 Sa	0531 1158 1746 2346	4.2F 4.2E 4.1F 4.5E	0228 0831 1452 2044	4.2F 4.2E 4.1F 4.5E
13 W	0512 1149 1737 2348	4.9F 4.7E 4.5F 4.9E	0203 0818 1435 2035	5.1E 4.9F 4.7E 4.5F	28 Th	0525 1159 1740 2353	4.4E 4.2F 4.1E 3.9F	0215 0827 1443 2034	4.4E 4.2F 4.1E 3.9F	13 Sa	0635 1305 1901 2501	5.0E 4.7F 4.7E 4.4F	0325 0941 1554 2201	5.0E 4.7F 4.7E 4.4F	28 Su	0003 0609 1233 1825	4.4E 4.1F 4.2E 4.0F	0309 0906 1533 2123	4.4E 4.1F 4.2E 4.0F
14 Th	0604 1241 1831	4.8F 4.6E 4.4F	0254 0911 1528 2129	5.0E 4.8F 4.6E 4.4F	29 F	0602 1236 1819	4.4E 4.1F 3.8F	0257 0903 1522 2115	4.4E 4.1F 4.1E 3.8F	14 Su	0728 1358 1956	4.7E 4.4F 4.5E 4.2F	0418 1033 1646 2258	4.7E 4.4F 4.5E 4.2F	29 M	0044 0649 1311 1909	4.2E 4.0F 4.1E 3.9F	0354 0947 1618 2208	4.2E 4.0F 4.1E 3.9F
15 F	0043 0658 1335 1927	4.9E 4.7F 4.5E 4.3F	0348 1004 1623 2226	4.9E 4.7F 4.5E 4.3F	30 Sa	0032 0641 1315 1901	4.3E 4.0F 4.0E 3.8F	0340 0942 1607 2154	4.3E 4.0F 4.0E 3.8F	15 M	0220 0824 1452 2054	4.4E 4.1F 4.3E 4.0F	0514 1128 1743 2359	4.4E 4.1F 4.3E 4.0F	30 Tu	0131 0734 1355 1958	4.1E 3.9F 4.0E 3.8F	0439 1030 1705 2258	4.1E 3.9F 4.0E 3.8F
					31 Su	0115 0723 1356 1946	4.2E 3.9F 3.9E 3.7F	0425 1021 1652 2239	4.2E 3.9F 3.9E 3.7F						31 W	0227 0826 1447 2055	3.9E 3.7F 4.0E 3.8F	0533 1123 1800 2357	3.9E 3.7F 4.0E 3.8F

Time meridian 75° W. 0000 is midnight. 1200 is noon.

CAPE COD CANAL (RR. Bridge), MASSACHUSETTS, 1983

27

F-Flood, Dir. 070° True E-Ebb, Dir. 250° True

NOVEMBER								DECEMBER							
Day	Slack Water			Maximum Current			Day	Slack Water			Maximum Current				
	Time	Time	Vel.	Time	Time	Vel.		Time	Time	Vel.	Time	Time	Vel.		
	h.m.	h.m.	knots	h.m.	h.m.	knots		h.m.	h.m.	knots	h.m.	h.m.	knots		
1 Tu	0613 1210 1825	0249 0858 1514 2121	4.3F 4.3E 4.1F 4.6E	16 W	0631 1227 1845	0311 0914 1531 2131	3.8F 3.9E 3.7F 4.1E	1 Th	0012 0642 1246 1906	0326 0930 1555 2156	4.4F 4.5E 4.3F 4.6E	16 F	0630 1229 1855	0305 0920 1531 2143	3.8F 4.1E 3.8F 4.1E
2 W	0034 0706 1305 1922	0347 0953 1612 2216	4.5F 4.6E 4.4F 4.8E	17 Th	0044 0714 1311 1930	0356 0959 1616 2219	3.9F 4.2E 3.9F 4.2E	2 F	0108 0731 1337 2000	0419 1022 1648 2248	4.4F 4.7E 4.5F 4.6E	17 Sa	0047 0713 1316 1943	0350 1006 1619 2231	3.9F 4.3E 4.0F 4.2E
3 Th	0128 0755 1356 2015	0441 1044 1703 2307	4.6F 4.8E 4.6F 4.9E	18 F	0127 0753 1351 2013	0435 1044 1654 2303	4.1F 4.3E 4.1F 4.4E	3 Sa	0159 0817 1425 2051	0508 1113 1736 2336	4.4F 4.8E 4.6F 4.6E	18 Su	0134 0755 1400 2030	0435 1051 1703 2317	4.1F 4.5E 4.3F 4.4E
4 F	0218 0841 1443 2105	0526 1133 1751 2355	4.7F 4.9E 4.7F 4.9E	19 Sa	0209 0831 1430 2055	0510 1123 1733 2346	4.2F 4.5E 4.3F 4.5E	4 Su	0247 0901 1510 2139	0553 1155 1821 2339	4.4F 4.8E 4.6F	19 M	0219 0836 1444 2115	0516 1137 1748	4.2F 4.7E 4.5F
5 Sa	0306 0924 1528 2153	0610 1218 1835	4.7F 5.0E 4.7F	20 Su	0248 0907 1509 2136	0547 1204 1810	4.3F 4.6E 4.4F	5 M	0331 0943 1554 2225	0623 1240 1904	4.5E 4.3F 4.8E 4.5F	20 Tu	0304 0917 1528 2202	0602 1221 1833	4.5E 4.3F 4.8E 4.6F
6 Su	0350 1006 1612 2240	0652 1301 1918	4.8E 4.6F 4.9E 4.7F	21 M	0328 0943 1548 2218	0626 1245 1851	4.3F 4.7E 4.5F	6 Tu	0414 1024 1636 2311	0712 1321 1945	4.2F 4.7E 4.4F	21 W	0349 0959 1613 2249	0645 1307 1919	4.3F 4.9E 4.7F
7 M	0434 1048 1655 2328	0733 1345 2001	4.4F 4.8E 4.6F	22 Tu	0409 1020 1630 2303	0707 1328 1932	4.3F 4.7E 4.6F	7 W	0455 1105 1718 2355	0753 1405 2024	4.0F 4.6E 4.3F	22 Th	0436 1044 1700 2338	0729 1356 2007	4.4F 4.9E 4.7F
8 Tu	0518 1130 1739	0213 0814 1428 2045	4.5E 4.2F 4.6E 4.4F	23 W	0452 1101 1714 2351	0746 1413 2018	4.2F 4.7E 4.5F	8 Th	0537 1147 1800	0235 0831 1450 2104	4.1E 3.9F 4.4E 4.1F	23 F	0525 1132 1750	0226 0819 1444 2056	4.5E 4.3F 4.9E 4.7F
9 W	0602 1214 1825	0259 0859 1514 2128	4.2E 3.9F 4.4E 4.1F	24 Th	0539 1146 1803	0243 0835 1500 2109	4.4E 4.2F 4.6E 4.5F	9 F	0641 1251 1844	0319 0912 1535 2151	4.0E 3.7F 4.3E 4.0F	24 Sa	0617 1225 1843	0317 0912 1535 2148	4.5E 4.2F 4.8E 4.6F
10 Th	0650 1301 1914	0348 0942 1603 2220	4.0E 3.7F 4.2E 3.9F	25 F	0644 1237 1857	0336 0924 1555 2202	4.3E 4.0F 4.6E 4.4F	10 Sa	0708 1319 1931	0407 1001 1623 2236	3.8E 3.5F 4.1E 3.8F	25 Su	0713 1323 1940	0413 1007 1632 2247	4.4E 4.1F 4.7E 4.5F
11 F	0742 1355 2007	0439 1033 1656 2315	3.7E 3.4F 4.0E 3.7F	26 Sa	0728 1337 1956	0429 1022 1649 2305	4.1E 3.9F 4.5E 4.3F	11 Su	0759 1412 2022	0458 1050 1715 2327	3.7E 3.4F 3.9E 3.7F	26 M	0813 1427 2040	0508 1108 1730 2348	4.3E 4.0F 4.5E 4.3F
12 Sa	0840 1455 2105	0532 1131 1753	3.6E 3.2F 3.8E	27 Su	0832 1444 2100	0530 1127 1753	4.1E 3.8F 4.4E	12 M	0854 1510 2116	0550 1147 1808	3.6E 3.3F 3.8E	27 Tu	0916 1535 2143	0609 1215 1832	4.3E 4.0F 4.4E
13 Su	0942 1558 2205	0633 1237 1851	3.5E 3.1F 3.8E	28 M	0940 1555 2207	0633 1236 1855	4.1E 3.8F 4.4E	13 Tu	0951 1610 2211	0644 1245 1905	3.7E 3.3F 3.8E	28 W	1022 1643 2247	1325 1934	4.0F 4.3E
14 M	1043 1659 2303	0730 1346 1948	3.6E 3.2F 3.8E	29 Tu	1047 1703 2312	0736 1348 1959	4.2E 3.9F 4.4E	14 W	1047 1708 2306	0738 1344 1959	3.7E 3.4F 3.8E	29 Th	1125 1749 2350	1433 2036	4.0F 4.3E
15 Tu	1138 1754 2356	0823 1442 2042	3.7E 3.4F 3.9E	30 W	1149 1807	0826 0835 1456 2058	4.3F 4.4E 4.1F 4.5E	15 Th	1140 1803 2358	0213 0829 1439 2052	3.7F 3.9E 3.6F 4.0E	30 F	1224 1850	1539 2134	4.2F 4.3E
												31 Sa	1319 1946	1638 2229	4.3F 4.3E

Time meridian 75° W. 0000 is midnight. 1200 is noon.

POLLOCK RIP CHANNEL, MASSACHUSETTS, 1983

F-Flood, Dir. 035° True E-Ebb, Dir. 225° True

JANUARY								FEBRUARY							
Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current		
	h.m.	h.m.	h.m.	knots		h.m.	h.m.	h.m.	knots		h.m.	h.m.	h.m.	knots	
1			0053	1.9E	16			0129	1.7E	1			0225	1.9E	
Sa	0402		0712	1.9F	Su	0435		0752	1.8F	Tu	0534		0852	2.1F	
	1021		1307	2.0E		1050		1333	1.8E		1155		1443	2.0E	
	1618		1944	2.4F		1641		2010	2.2F		1752		2121	2.3F	
	2308					2326									1727
2			0145	1.9E	17			0203	1.7E	2			0317	1.9E	
Su	0456		0805	1.9F	M	0512		0824	1.8F	W	0627		0946	2.0F	
	1115		1400	2.0E		1129		1410	1.8E		1251		1537	1.9E	
	1712		2039	2.3F		1718		2043	2.1F		1846		2216	2.2F	
3			0242	1.9E	18			0242	1.8E	3			0412	1.8E	
M	0552		0905	1.9F	Tu	0550		0859	1.8F	Th	0721		1046	2.0F	
	1212		1457	1.9E		1211		1450	1.8E		1348		1633	1.8E	
	1808		2137	2.3F		1757		2118	2.1F		1943		2315	2.0F	
4			0337	1.8E	19			0321	1.8E	4			0507	1.7E	
Tu	0650		1007	1.9F	W	0630		0936	1.8F	F	0817		1149	1.9F	
	1311		1557	1.8E		1254		1533	1.8E		1449		1736	1.6E	
	1907		2241	2.2F		1839		2158	2.1F		2042				
5			0438	1.7E	20			0404	1.8E	5			0017	1.9F	
W	0750		1113	1.8F	Th	0712		1019	1.8F	Sa	0318		0607	1.6E	
	1413		1659	1.7E		1342		1620	1.7E		0916		1252	1.9F	
	2008		2344	2.1F		1925		2241	2.0F		1551		1839	1.5E	
6			0542	1.7E	21			0449	1.7E	6			0120	1.8F	
Th	0851		1222	1.8F	F	0759		1106	1.8F	Su	0415		0711	1.5E	
	1518		1805	1.6E		1433		1709	1.7E		1017		1354	1.9F	
	2112					2014		2330	1.9F		1654		1946	1.4E	
7			0051	2.0F	22			0539	1.7E	7			0221	1.8F	
F	0352		0646	1.6E	Sa	0848		1158	1.7F	M	0513		0812	1.5E	
	0953		1327	1.9F		1528		1804	1.6E		1116		1457	2.0F	
	1622		1914	1.6E		2108					1755		2052	1.4E	
8			0153	2.0F	23			0023	1.8F	8			0321	1.8F	
Sa	0450		0747	1.6E	Su	0353		0630	1.6E	Tu	0608		0909	1.6E	
	1054		1428	2.0F		0942		1257	1.7F		1211		1550	2.0F	
	1725		2021	1.5E		1626		1857	1.5E		1850		2149	1.5E	
9			0254	1.9F	24			0122	1.7F	9			0414	1.8F	
Su	0546		0851	1.7E	M	0447		0727	1.6E	W	0700		1002	1.6E	
	1151		1528	2.1F		1038		1358	1.8F		1302		1639	2.1F	
	1824		2122	1.5E		1726		1959	1.5E		1941		2238	1.5E	
10			0349	1.9F	25			0222	1.7F	10			0133	1.8F	
M	0639		0942	1.7E	Tu	0542		0824	1.7E	Th	0747		1050	1.7E	
	1243		1617	2.1F		1136		1503	1.9F		1347		1722	2.2F	
	1918		2215	1.6E		1826		2100	1.5E		2025		2319	1.6E	
11			0438	1.9F	26			0325	1.7F	11			0217	1.9F	
Tu	0727		1029	1.7E	W	0638		0922	1.7E	F	0830		1127	1.7E	
	1330		1706	2.2F		1233		1603	2.0F		1428		1804	2.2F	
	2007		2305	1.6E		1923		2201	1.6E		2106		2356	1.7E	
12			0525	1.9F	27			0426	1.7F	12			0257	1.9F	
W	0812		1112	1.7E	Th	0732		1017	1.8E	Sa	0909		1202	1.8E	
	1414		1751	2.2F		1329		1659	2.1F		1505		1839	2.2F	
	2051		2344	1.6E		2018		2256	1.7E		2144				
13			0607	1.9F	28			0522	1.8F	13			0029	1.7E	
Th	0854		1150	1.7E	F	0825		1112	1.9E	Su	0333		0654	1.9F	
	1453		1830	2.2F		1423		1754	2.3F		0947		1234	1.8E	
	2133					2111		2352	1.8E		1541		1910	2.2F	
14			0023	1.6E	29			0616	1.9F	14			0101	1.8E	
F	0322		0644	1.8F	Sa	0918		1205	2.0E	M	0407		0724	1.9F	
	0934		1225	1.8E		1516		1845	2.4F		1024		1307	1.9E	
	1530		1905	2.2F		2202					1615		1939	2.2F	
15			0056	1.6E	30			0045	1.9E	15			0134	1.8E	
Sa	0359		0719	1.8F	Su	0352		0708	2.0F	Tu	0441		0753	1.9F	
	1012		1259	1.8E		1010		1259	2.1E		1102		1344	1.9E	
	1606		1938	2.2F		1608		1938	2.4F		1650		2011	2.2F	
2249				2253					2331						
				31				0135	1.9E						
				M	0443		0800	2.1F							
					1102		1350	2.1E							
					1700		2029	2.4F							
					2343										

Time meridian 75° W. 0000 is midnight. 1200 is noon.

POLLOCK RIP CHANNEL, MASSACHUSETTS, 1983

F-Flood, Dir. 035° True E-Ebb, Dir. 225° True

MARCH				APRIL										
Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current	
	h.m.	h.m.	Vel.	knots		h.m.	h.m.	Vel.	knots		h.m.	h.m.	Vel.	knots
1 Tu	0425	0119	2.0E	2.2F	16 W	0408	0100	1.9E	2.1F	1 F	0532	0226	1.9E	2.2F
	1047	0748	2.1E	2.2F		1033	0719	2.0E	2.1F		1207	0858	1.8E	2.2F
	1645	1336	2.4F	2.1E		1621	1315	2.2F	2.0E		1759	1449	2.0F	1.8E
	2320	2011	2.4F	2.2F		2257	1936	2.2F	2.2F		2343	2121	2.0F	2.0F
2 W	0512	0205	2.2F	2.0E	17 Th	0442	0135	2.1F	2.0E	2 Sa	0618	0309	2.1F	1.8E
	1137	0833	2.0E	2.2F		1112	0754	2.0E	2.1F		1257	0946	1.7E	2.2F
	1734	1424	2.3F	2.0E		1658	1352	2.2F	2.0E		1848	1538	1.8F	1.7E
		2059	2.3F	2.2F		2334	2009	2.2F	2.2F			2210	1802	2.105
3 Th	0600	0252	2.1F	1.9E	18 F	0518	0214	2.1F	2.0E	3 Su	0706	0356	2.1F	1.6E
	1229	0924	1.9E	2.1F		1153	0827	1.5E	2.1F		1351	1040	1.5E	1.9F
	1823	1515	2.1F	2.1F		1738	1436	2.1F	2.0E		1940	1631	1.6F	1.7E
		2147	2.1F	2.1F			2046	2.1F	2.1F			2303	1856	2.200
4 F	0649	0341	1.8E	2.0F	19 Sa	0558	0255	1.9E	2.1F	4 M	0759	0447	1.8F	1.5E
	1322	1015	1.7E	2.0F		1239	0908	1.9E	2.1F		1447	1139	1.4E	1.8F
	1915	1606	1.9F	1.7E		1823	1517	2.0F	1.9E		2038	1727	1.4E	1.4E
		2241	1.9F	1.9F			2131	2.0F	2.0F			238	1958	2.307
5 Sa	0741	0432	1.9F	1.7E	20 Su	0643	0340	1.9E	2.0F	5 Tu	0856	0009	1.8F	1.6F
	1419	1114	1.6E	1.9F		1331	0643	1.7E	2.0F		1546	0546	1.3E	1.4E
	2011	1701	1.8F	1.6E		1913	1608	1.8F	1.8F		2138	1240	1.3E	1.8F
		2342	1.8F	1.8F			1913	1.8F	1.8F			1831	2108	1.3E
6 Su	0837	0527	1.9F	1.6E	21 M	0735	0431	1.9F	1.7E	6 W	0955	0112	1.8F	1.5F
	1520	1216	1.4E	1.9F		1430	1052	1.6E	1.9F		1644	0649	1.4E	1.4E
	2111	1804	1.4E	1.6E		2011	1705	1.6E	1.6E		2238	1340	1.4E	1.8F
							2316	1.6F	1.6F			1932	1644	1.4E
7 M	0937	0043	1.8F	1.7F	22 Tu	0836	0529	1.8F	1.6E	7 Th	1053	0209	1.4E	1.6F
	1621	0628	1.3E	1.5E		1536	1156	1.4E	1.8F		1739	0750	1.4E	1.4E
	2213	1321	1.8F	1.8F		2118	1808	1.4E	1.4E		2334	1437	1.4E	1.4E
		1910	1.3E	1.3E								2034	1.4E	1.4E
8 Tu	1037	0147	1.9F	1.6F	23 W	0943	0029	1.8F	1.5E	8 F	1147	0306	1.5E	1.7F
	1721	0733	1.4E	1.4E		1644	0632	1.4E	1.5E		1828	0847	1.6E	1.5E
	2315	1420	1.4E	1.4E		2231	1315	1.4E	1.8F			1528	1.6E	2.0F
		2015	1.4E	1.4E			1916	1.4E	1.4E			2123	1.6E	1.6E
9 W	1135	0248	2.0F	1.6F	24 Th	1055	0153	1.8F	1.5E	9 Sa	1236	0354	1.6F	1.8F
	1817	0832	1.4E	1.5E		1751	0743	1.4E	1.5E		1914	0936	1.7E	1.6E
		1518	1.4E	2.0F		2342	1435	1.4E	1.8F			1613	1.7E	2.1F
		2112	1.4E	1.4E			2031	1.4E	1.4E			2208	1.7E	1.7E
10 Th	1228	0339	2.0F	1.7F	25 F	1203	0310	2.0F	1.6E	10 Su	1320	0437	2.1F	1.9F
	1908	0930	1.5E	1.5E		1852	0853	1.6E	1.6E		1955	1017	1.8E	1.7E
		1607	1.5E	2.0F			1545	2.0F	2.0F			1654	1.8E	2.1F
		2205	1.5E	1.5E			2139	1.6E	1.6E			2243	1.8E	1.8E
11 F	1315	0430	2.1F	1.8F	26 Sa	1305	0414	2.2F	1.8F	11 M	1401	0512	2.2F	2.0F
	1953	1014	1.6E	1.6E		1948	0957	1.7E	1.7E		2034	1056	1.9E	1.8E
		1652	1.6E	2.1F			1644	2.2F	2.2F			1729	2.2F	2.2F
		2249	1.6E	1.6E			2237	1.7E	1.7E			2319	1.9E	1.9E
12 Sa	1357	0511	2.2F	1.9F	27 Su	1402	0143	2.2F	2.0F	12 Tu	1438	0547	2.2F	2.1F
	2033	1056	1.7E	1.7E		2039	1056	1.9E	1.9E		2110	1131	1.9E	1.9E
		1731	1.7E	2.2F			1735	2.3F	2.3F			1800	2.2F	2.2F
		2324	1.7E	1.7E			2330	1.9E	1.9E			2352	1.9E	1.9E
13 Su	1435	0551	2.2F	2.0F	28 M	1453	0233	2.2F	2.1F	13 W	1515	0616	2.2F	2.1F
	2111	1131	1.8E	2.2F		2126	1147	2.0E	2.0E		2146	1206	1.9E	1.9E
		1808	1.8E	2.2F			1824	2.4F	2.4F			1831	2.2F	2.2F
		2357	1.8E	1.8E								2146	2.2F	2.2F
14 M	1511	0622	2.2F	2.0F	29 Tu	1541	0016	2.2F	2.0E	14 Th	1552	0025	2.2F	2.0E
	2146	1205	2.2F	1.9E		2211	0646	2.3F	2.2F		2222	0647	2.0E	2.2F
		1837	2.2F	2.2F			1236	2.0E	2.0E			1006	2.0E	2.0E
							1908	2.3F	2.3F			1552	2.1F	2.1F
							2211					1904	2.1F	2.1F
15 Tu	0957	0029	2.0E	1.9E	30 W	1031	0100	2.0E	2.0E	15 F	1046	0104	2.0E	2.0E
	1546	0652	2.2F	2.0E		1627	0729	2.3F	2.3F		1631	0721	2.2F	2.2F
	2221	1238	2.0E	2.0E		2255	1320	2.0E	2.0E		2301	1326	2.0E	2.0E
		1905	2.2F	2.2F			1951	2.3F	2.3F			1939	2.1F	2.1F
					31 Th	1118	0143	1.9E	2.0E					
						1713	0812	2.1F	2.2F					
						2339	1403	1.9E	2.1F					
							2036	2.1F	2.1F					

Time meridian 75° W. 0000 is midnight. 1200 is noon.

POLLOCK RIP CHANNEL, MASSACHUSETTS, 1983

F-Flood, Dir. 035° True E-Ebb, Dir. 225° True

MAY						JUNE								
Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current	
	h.m.	h.m.	knots	Vel.		h.m.	h.m.	knots	Vel.		h.m.	h.m.	knots	Vel.
1 Su	0548	0921	1.7E	2.0F	16 M	0509	0827	2.0E	2.2F	1 W	0101	0340	1.6E	1.8E
	1233	1511	1.6E	1.8F		1202	1438	1.8E	1.8F		0650	1023	1.9F	2.1F
	1822	2143	1.7F			1747	2050	1.8F			1342	1619	1.5E	1.7E
											1931	2247	1.6F	1.7F
2 M	0043	0325	1.6E	2.0F	17 Tu	0011	0255	1.9E	2.1F	2 Th	0151	0431	1.5E	1.7E
	0634	1009	2.0F	1.5E		0602	0924	2.1F	1.7E		0739	1113	1.9F	2.1F
	1323	1602	1.5E	1.6F		1259	1533	1.7E	1.7F		1431	1710	1.5E	1.7E
	1911	2231	1.6F			1845	2150	1.7F			2022	2342	1.6F	2040
3 Tu	0133	0412	1.5E	1.9F	18 W	0110	0352	1.8E	2.0F	3 F	0244	0522	1.5E	1.7F
	0723	1100	1.9F	1.4E		0700	1025	2.0F	1.6E		0830	1205	1.9F	1.6E
	1415	1654	1.4E	1.5F		1400	1636	1.6E	1.6F		1521	1800	1.5E	1.7E
	2005	2330	1.5F			1949	2301	1.6F			2114			1546
4 W	0227	0506	1.5E	1.8F	19 Th	0214	0454	1.6E	2.0F	4 Sa	0338	0617	1.6F	1.8E
	0817	1158	1.8F	1.4E		0806	1139	2.0F	1.5E		0923	1257	1.9F	1.6E
	1509	1749	1.4E			1505	1743	1.5E			1611	1852	1.6E	1.7E
	2101					2057					2205			2145
5 Th	0323	0603	1.4E	1.5F	20 F	0323	0605	1.6E	1.6F	5 Su	0431	0709	1.5E	1.9F
	0913	1255	1.8F	1.4E		0915	1255	2.0F	1.5E		1016	1349	1.9F	2.0F
	1603	1848	1.4E			1610	1854	1.5E			1700	1943	1.6E	1.7E
	2158					2206					2254			2347
6 F	0420	0703	1.4E	1.6F	21 Sa	0431	0718	1.6E	1.7F	6 M	0523	0802	1.6E	2.1F
	1009	1350	1.9F	1.4E		1025	1408	2.0F	1.6E		1107	1435	1.9F	1.6E
	1656	1943	1.5E			1712	2005	1.6F	1.6F		1747	2031	1.7E	2.0F
	2252					2312					2341			1839
7 Sa	0514	0759	1.5E	1.7F	22 Su	0536	0827	1.6E	1.8F	7 Tu	0613	0851	1.6E	2.2F
	1103	1441	1.9F	1.5E		1132	1510	2.1F	1.6E		1156	1520	1.9F	1.7E
	1745	2034	1.6E			1810	2106	1.7E			1832	2114	1.8E	2.0F
	2341													1929
8 Su	0605	0309	1.8F	1.6E	23 M	0011	0343	2.0F	1.7E	8 W	0026	0349	1.9F	2.2F
	1153	1528	2.0F	1.7E		0637	0934	1.7E	1.8E		0700	0938	1.7E	1.7E
	1831	2118	1.7E			1233	1607	2.1F	1.8E		1244	1605	1.9F	2.0F
						1904	2202	1.8E			1915	2158	1.8E	2017
9 M	0027	0352	1.9F	1.7E	24 Tu	0105	0437	2.2F	1.8E	9 Th	0108	0430	2.0F	2.2F
	0652	0936	1.7E	2.0F		0733	1027	1.8E	1.9E		0746	1023	1.7E	1.6E
	1239	1610	2.0F	1.8E		1328	1700	2.1F	1.9E		1330	1645	1.9F	1.9F
	1914	2159	1.8E			1953	2253	1.9E			1958	2241	1.9E	2101
10 Tu	0108	0433	2.0F	1.7E	25 W	0154	0526	2.2F	1.9E	10 F	0150	0510	2.1F	2.2F
	0736	1017	1.7E	2.1F		0824	1118	1.8E	1.9E		0832	1109	1.8E	1.6E
	1322	1646	2.1F	1.9E		1419	1747	2.1F	2.0E		1415	1725	1.9F	1.8F
	1954	2237	1.9E			2040	2336	1.9E			2041	2324	2.0E	2143
11 W	0146	0506	2.1F	1.8E	26 Th	0239	0611	2.3F	1.8E	11 Sa	0233	0552	2.2F	2.2F
	0817	1058	1.8E	2.1F		0912	1204	1.8E	2.0F		0918	1154	1.8E	1.7E
	1403	1722	2.1F	1.9E		1506	1833	2.0F			1502	1812	1.9F	1.6E
	2033	2315	1.9E			2123					2125			1611
12 Th	0224	0542	2.1F	1.9E	27 F	0321	0654	2.2F	1.7E	12 Su	0317	0638	2.3F	2.1F
	0859	1137	1.9E	2.0E		0958	1247	1.7E	1.9F		1006	1241	1.9E	1.6E
	1444	1756	2.0F			1549	1914	1.9F	2.0E		1550	1854	1.9F	1.7F
	2111	2353	2.0E			2205					2211			1650
13 F	0301	0617	2.2F	1.9E	28 Sa	0401	0735	2.2F	1.8E	13 M	0404	0726	2.3F	2.1F
	0940	1218	1.9E	2.0F		1042	1328	1.7E	1.8F		1056	1332	1.9E	1.6E
	1525	1833	2.0F			1631	1953	1.8F			1641	1945	1.9F	1.7F
	2151					2247					2302			2346
14 Sa	0340	0034	2.0E	2.3F	29 Su	0441	0134	1.7E	2.1F	14 Tu	0455	0147	2.0E	2.1F
	1024	1303	1.9E	2.0F		1125	1407	1.6E	1.7F		1149	1425	1.8E	2.1F
	1608	1914	2.0F			1713	2034	1.7F			1735	2042	1.8F	1.6E
	2233					2329					2356			1811
15 Su	0423	0117	2.0E	2.3F	30 M	0522	0214	1.7E	2.1F	15 W	0550	0239	1.9E	2.1F
	1111	1348	1.9E	1.9F		1209	1448	1.6E	1.8E		1245	1522	1.8E	2.0F
	1655	1957	1.9F			1756	2114	1.6E	1.6F		1834	2143	1.8F	1.6E
	2319													1854
					31 Tu	0013	0255	1.6E	2.0F					2206
						0604	0940	2.0F	1.5E					
						1255	1531	1.5E	1.6F					
						1842	2200	1.6F						

Time meridian 75° W. 0000 is midnight. 1200 is noon.

THE RACE, LONG ISLAND SOUND, 1983

F-Flood, Dir. 295° True E-Ebb, Dir. 100° True

JANUARY								FEBRUARY							
Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current		
	h.m.	h.m.	Vel.	knots		h.m.	h.m.	Vel.	knots		h.m.	h.m.	Vel.	knots	
1	0025	0341	4.1E		16	0040	0400	2.8E		1	0152	0511	4.3E		
Sa	0643	0937	4.1F		Su	0701	0942	2.5F		Tu	0822	1108	3.7F		
	1241	1606	4.7E			1242	1616	3.2E			1412	1735	4.2E		
	1923	2211	4.0F			1930	2209	2.6F			2047	2336	3.7F		
2	0119	0435	4.1E		17	0117	0438	2.7E		2	0244	0605	4.0E		
Su	0741	1029	3.9F		M	0738	1022	2.5F		W	0921	1205	3.3F		
	1336	1702	4.5E			1320	1651	3.1E			1507	1828	3.8E		
	2017	2304	3.9F			2003	2248	2.6F			2141				
3	0214	0533	4.0E		18	0154	0514	2.7E		3		0031	3.4F		
M	0841	1128	3.6F		Tu	0818	1104	2.4F		Th	0338	0702	3.8E		
	1432	1759	4.2E			1400	1727	2.9E			1022	1303	2.9F		
	2113					2039	2331	2.6F			1603	1926	3.4E		
4		0002	3.6F		19	0234	0552	2.7E		4		0129	3.0F		
Tu	0311	0631	3.9E		W	0903	1149	2.3F		F	0434	0759	3.5E		
	0944	1228	3.3F			1444	1802	2.7E			1125	1407	2.5F		
	1531	1855	3.9E			2119					1704	2025	3.0E		
	2211										2337				
5		0101	3.4F		20		0015	2.5F		5		0230	2.7F		
W	0409	0731	3.7E		Th	0317	0637	2.7E		Sa	0532	0859	3.3E		
	1050	1333	3.0F			0952	1240	2.2F			1229	1517	2.3F		
	1633	1956	3.5E			1532	1849	2.6E			1806	2122	2.7E		
	2311					2203									
6		0205	3.2F		21		0102	2.5F		6		0038	0335	2.5F	
Th	0509	0832	3.6E		F	0405	0729	2.7E		Su	0631	0958	3.2E		
	1155	1443	2.7F			1048	1331	2.2F			1330	1625	2.2F		
	1736	2057	3.3E			1627	1942	2.5E			1909	2223	2.6E		
						2254									
7		0306	3.0F		22		0155	2.6F		7		0137	0437	2.4F	
F	0608	0933	3.5E		Sa	0458	0828	2.9E		M	0727	1053	3.2E		
	1259	1552	2.6F			1148	1429	2.2F			1426	1726	2.3F		
	1840	2155	3.1E			1726	2049	2.5E			2009	2317	2.6E		
						2350									
8		0410	2.9F		23		0250	2.7F		8		0232	0535	2.4F	
Sa	0706	1028	3.5E		Su	0555	0929	3.1E		Tu	0820	1148	3.2E		
	1358	1653	2.6F			1250	1528	2.4F			1517	1815	2.4F		
	1941	2252	3.0E			1829	2152	2.7E			2101				
9		0509	2.8F		24		0050	0349	2.9F	9		0008	2.7E		
Su	0800	1124	3.6E		M	0654	1031	3.5E		W	0322	0623	2.5F		
	1453	1751	2.6F			1350	1627	2.7F			0907	1233	3.3E		
	2037	2345	2.9E			1932	2254	2.9E			1602	1900	2.5F		
											2146				
10		0558	2.8F		25		0150	0447	3.2F	10		0055	2.8E		
M	0848	1211	3.6E		Tu	0754	1129	3.8E		Th	0407	0700	2.5F		
	1542	1838	2.6F			1447	1728	3.0F			0950	1317	3.4E		
	2127					2032	2351	3.3E			1643	1937	2.6F		
											2226				
11		0032	2.9E		26		0250	0544	3.5F	11		0137	2.9E		
Tu	0345	0643	2.7F		W	0851	1223	4.2E		F	0448	0737	2.6F		
	0933	1258	3.6E			1542	1824	3.4F			1029	1358	3.5E		
	1627	1921	2.7F			2129					1720	2008	2.7F		
	2211										2303				
12		0118	2.9E		27		0046	3.7E		12		0217	3.0E		
W	0428	0724	2.7F		Th	0347	0640	3.8F		Sa	0526	0808	2.7F		
	1013	1341	3.6E			0947	1315	4.6E			1107	1435	3.5E		
	1708	2000	2.7F			1634	1918	3.8F			1755	2035	2.8F		
	2251					2224					2338				
13		0201	2.9E		28		0141	4.0E		13		0256	3.0E		
Th	0509	0757	2.7F		F	0443	0736	4.1F		Su	0602	0842	2.7F		
	1052	1422	3.5E			1041	1409	4.8E			1143	1513	3.4E		
	1746	2033	2.6F			1724	2012	4.0F			1827	2105	2.8F		
	2329					2317									
14		0242	2.8E		29		0233	4.3E		14		0011	0331	3.1E	
F	0548	0828	2.6F		Sa	0537	0829	4.2F		M	0637	0919	2.8F		
	1129	1459	3.5E			1134	1459	4.9E			1219	1549	3.3E		
	1822	2101	2.6F			1814	2103	4.2F			1858	2141	2.9F		
15		0321	2.8E		30		0009	0325	4.4E	15		0046	0407	3.1E	
Sa	0625	0904	2.6F		Su	0631	0921	4.2F		Tu	0712	0956	2.8F		
	1205	1538	3.4E			1227	1551	4.8E			1256	1622	3.2E		
	1856	2134	2.6F			1905	2153	4.2F			1929	2216	2.9F		
					31		0100	0417	4.4E						
					M	0726	1014	4.0F							
						1319	1642	4.6E							
						1955	2245	4.0F							

Time meridian 75° W. 0000 is midnight. 1200 is noon.

THE RACE, LONG ISLAND SOUND, 1983

F-Flood, Dir. 295° True E-Ebb, Dir. 100° True

MARCH								APRIL							
Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current		
	h.m.	h.m.	h.m.	knots		h.m.	h.m.	h.m.	knots		h.m.	h.m.	h.m.	knots	
1	0037	0357	4.6E		16	0013	0338	3.5E		1	0142	0508	3.9E		
Tu	0708	0957	4.0F		W	0645	0932	3.0F		F	0827	1107	3.0F		
	1300	1619	4.4E			1232	1554	3.3E			1412	1731	3.2E		
	1930	2219	4.0F			1856	2147	3.1F			2038	2323	2.9F		
2	0125	0446	4.4E		17	0049	0412	3.5E		2	0228	0559	3.5E		
W	0800	1045	3.6F		Th	0723	1013	3.0F		Sa	0919	1156	2.6F		
	1349	1709	4.0E			1311	1627	3.2E			1501	1822	2.8E		
	2019	2308	3.6F			1931	2228	3.1F			2129				
3	0214	0536	4.0E		18	0128	0445	3.5E		3		0012	2.5F		
Th	0854	1136	3.2F		F	0805	1056	2.9F		Su	0317	0650	3.1E		
	1439	1802	3.6E			1353	1703	3.0E			1015	1247	2.2F		
	2109	2356	3.2F			2011	2311	3.0F			1554	1916	2.4E		
4	0304	0631	3.7E		19	0211	0530	3.4E		4		0104	2.2F		
F	0951	1229	2.8F		Sa	0853	1143	2.7F		M	0409	0746	2.8E		
	1532	1854	3.1E			1441	1746	2.9E			1114	1348	2.0F		
	2203					2059					1652	2017	2.2E		
5		0047	2.8F		20		0003	2.9F		5		0203	1.9F		
Sa	0356	0727	3.3E		Su	0301	0621	3.3E		Tu	0506	0844	2.6E		
	1051	1326	2.3F			0948	1238	2.6F			1214	1455	1.9F		
	1629	1950	2.7E			1536	1847	2.7E			1753	2116	2.2E		
	2302					2155									
6		0146	2.4F		21		0058	2.8F		6	0032	0310	1.8F		
Su	0451	0823	3.0E		M	0359	0729	3.2E		W	0606	0942	2.6E		
	1153	1435	2.1F			1052	1335	2.5F			1311	1601	1.9F		
	1730	2051	2.4E			1639	1958	2.7E			1852	2213	2.3E		
						2301									
7	0004	0250	2.1F		22		0159	2.7F		7	0131	0418	1.9F		
M	0550	0921	2.8E		Tu	0504	0842	3.2E		Th	0705	1037	2.7E		
	1255	1548	2.0F			1201	1441	2.5F			1403	1656	2.1F		
	1833	2151	2.3E			1747	2113	2.8E			1946	2305	2.5E		
8	0106	0358	2.0F		23	0014	0304	2.8F		8	0223	0509	2.1F		
Tu	0649	1020	2.8E		W	0613	0948	3.4E		F	0758	1126	2.9E		
	1353	1649	2.0F			1308	1549	2.7F			1449	1739	2.3F		
	1934	2248	2.4E			1854	2218	3.1E			2032	2351	2.8E		
9	0204	0503	2.1F		24	0125	0412	3.0F		9	0309	0554	2.4F		
W	0745	1114	2.9E		Th	0720	1052	3.7E		Sa	0846	1211	3.1E		
	1444	1741	2.2F			1410	1654	3.1F			1530	1816	2.6F		
	2027	2339	2.5E			1958	2319	3.5E			2113				
10	0255	0554	2.3F		25	0229	0519	3.3F		10		0033	3.1E		
Th	0836	1203	3.1E		F	0823	1151	4.1E		Su	0350	0633	2.6F		
	1530	1826	2.4F			1506	1755	3.5F			0930	1254	3.2E		
	2113					2056					1608	1850	2.8F		
											2151				
11		0026	2.8E		26		0017	4.0E		11		0115	3.4E		
F	0341	0633	2.4F		Sa	0327	0617	3.7F		M	0429	0711	2.8F		
	0921	1248	3.3E			0921	1243	4.4E			1011	1334	3.4E		
	1610	1901	2.6F			1558	1849	3.8F			1642	1925	3.0F		
	2153					2150					2228				
12		0109	3.0E		27		0109	4.4E		12		0153	3.6E		
Sa	0422	0710	2.6F		Su	0421	0712	3.9F		Tu	0506	0747	3.0F		
	1002	1327	3.4E			1014	1333	4.5E			1050	1411	3.4E		
	1647	1934	2.7F			1647	1938	4.0F			1716	2002	3.2F		
	2230					2239					2304				
13		0149	3.2E		28		0159	4.6E		13		0231	3.7E		
Su	0500	0742	2.8F		M	0512	0804	4.0F		W	0542	0824	3.2F		
	1041	1406	3.5E			1104	1422	4.5E			1129	1447	3.4E		
	1721	2003	2.9F			1733	2024	4.1F			1749	2039	3.3F		
	2305					2327					2341				
14		0226	3.3E		29		0248	4.7E		14		0307	3.8E		
M	0535	0815	2.9F		Tu	0601	0849	4.0F		Th	0620	0905	3.2F		
	1118	1443	3.5E			1152	1510	4.4E			1209	1522	3.4E		
	1753	2035	3.0F			1819	2110	4.0F			1825	2120	3.3F		
	2339														
15		0303	3.4E		30	0012	0334	4.5E		15	0020	0345	3.9E		
Tu	0610	0854	3.0F		W	0650	0935	3.8F		F	0700	0948	3.2F		
	1155	1518	3.4E			1239	1557	4.1E			1251	1603	3.3E		
	1824	2112	3.1F			1904	2153	3.7F			1904	2204	3.3F		
					31	0057	0420	4.3E							
					Th	0738	1021	3.4F							
						1325	1642	3.7E							
						1950	2236	3.4F							

Time meridian 75° W. 0000 is midnight. 1200 is noon.

THE RACE, LONG ISLAND SOUND, 1983

F-Flood, Dir. 295° True E-Ebb, Dir. 100° True

MAY							JUNE											
Day	Slack Water Time	Maximum Current			Day	Slack Water Time	Maximum Current			Day	Slack Water Time	Maximum Current						
	h.m.	h.m.	Vel.	knots		h.m.	h.m.	Vel.	knots		h.m.	h.m.	Vel.	knots				
1 Su	0154 0849 1432 2057	0528 1124 1753 2337	3.3E 2.5F 2.6E 2.3F		16 M	0135 0821 1416 2033	0504 1110 1733 2327	4.0E 3.3F 3.3E 3.2F		17 W	0252 0950 1537 2211	0633 1226 1904 2308	2.7E 2.2F 2.3E 2.3E		18 Th	0319 1002 1600 2235	0012 0647 1250 1922	3.3F 3.9E 3.4E 3.7E
2 M	0239 0939 1521 2151	0616 1215 1844 2.3E	3.0E 2.2F 2.3E		17 Tu	0231 0919 1514 2138	0602 1205 1834 3.2E	3.8E 3.2F 3.2E		2 Th	0342 1039 1627 2308	0043 0722 1317 1957	1.9F 2.6E 2.1F 2.3E		17 F	0422 1103 1701 2342	0118 0748 1353 2025	3.1F 3.7E 3.3F 3.7E
3 Tu	0329 0932 1532 2151	0025 0707 1306 1939	2.0F 2.7E 2.0F 2.2E		18 W	0332 1021 1616 2248	0029 0706 1306 1939	3.1F 3.7E 3.1F 3.3E		3 F	0436 1129 1718	0138 0815 1408	1.8F 2.5E 2.1F 2.4E		18 Sa	0526 1204 1802	0227 0849 1458	3.0F 3.6E 3.3F 3.8E
4 W	0423 1128 1711 2352	0122 0804 1402 2037	1.8F 2.5E 1.9F 2.2E		19 Th	0437 1125 1720 2358	0132 0810 1411 2044	2.9F 3.6E 3.1F 3.4E		4 Sa	0504 1129 1809	0232 0908 1459	1.9F 2.5E 2.2F 2.6E		19 Su	0047 0631 1303 1901	0335 0950 1601 2224	3.0F 3.5E 3.3F 3.9E
5 Th	0521 1223 1806	0221 0901 1501 2133	1.8F 2.5E 2.0F 2.3E		20 F	0545 1228 1823	0241 0913 1517 2145	2.9F 3.6E 3.1F 3.6E		5 Su	0058 0628 1306 1857	0327 0959 1550 2230	2.0F 2.6E 2.4F 2.9E		20 M	0148 0733 1400 1956	0441 1047 1700 2319	3.0F 3.4E 3.3F 4.0E
6 F	0619 1314 1858	0322 0956 1555 2224	1.8F 2.6E 2.1F 2.6E		21 Sa	0104 0650 1328 1923	0352 1013 1621 2244	3.0F 3.7E 3.3F 3.9E		6 M	0148 0721 1352 1944	0421 1050 1639 2316	2.2F 2.7E 2.6F 3.2E		21 Tu	0245 0830 1453 2048	0540 1141 1753	3.0F 3.4E 3.2F
7 Sa	0715 1400 1945	0418 1045 1644 2313	2.0F 2.7E 2.3F 2.9E		22 Su	0205 0752 1423 2018	0457 1110 1719 2339	3.2F 3.7E 3.4F 4.1E		7 Tu	0235 0813 1435 2030	0509 1134 1725	2.5F 2.9E 2.9F		22 W	0337 0923 1543 2135	0010 0631 1230 1842	4.0E 3.0F 3.3E 3.2F
8 Su	0805 1443 2029	0508 1132 1725 2358	2.3F 2.9E 2.6F 3.2E		23 M	0302 0849 1515 2109	0554 1203 1814 3.5F	3.3F 3.8E 3.5F		8 W	0320 0902 1519 2115	0002 0558 1222 1811	3.6E 2.8F 3.1E 3.2F		23 Th	0426 1012 1630 2219	0059 0720 1321 1925	4.0E 3.0F 3.2E 3.0F
9 M	0852 1522 2110	0551 1217 1807	2.6F 3.1E 2.9F		24 Tu	0354 0941 1603 2156	0031 0648 1252 1901	4.3E 3.4F 3.7E 3.5F		9 Th	0404 0949 1603 2201	0048 0646 1308 1857	3.9E 3.1F 3.3E 3.4F		24 F	0511 1056 1714 2300	0144 0803 1406 2003	3.9E 2.9F 3.1E 2.9F
10 Tu	0937 1600 2151	0039 0633 1259 1846	3.5E 2.8F 3.2E 3.1F		25 W	0442 1029 1649 2240	0118 0737 1341 1944	4.3E 3.3F 3.6E 3.4F		10 F	0449 1037 1649 2248	0131 0731 1354 1944	4.1E 3.3F 3.5E 3.6F		25 Sa	0554 1138 1756 2339	0228 0842 1449 2039	3.8E 2.8F 2.9E 2.7F
11 W	1019 1637 2231	0121 0715 1337 1928	3.8E 3.1F 3.3E 3.3F		26 Th	0528 1114 1733 2322	0205 0818 1426 2022	4.2E 3.2F 3.4E 3.2F		11 Sa	0535 1125 1737 2337	0217 0820 1440 2034	4.3E 3.5F 3.6E 3.7F		26 Su	0634 1217 1837	0309 0917 1531	3.6E 2.7F 2.8E 2.6F
12 Th	1102 1716 2312	0200 0759 1418 2011	4.0E 3.3F 3.4E 3.5F		27 F	0612 1157 1816	0249 0858 1509	4.0E 3.0F 3.2E 3.0F		12 Su	0623 1216 1829	0308 0909 1530	4.4E 3.6F 3.7E 3.7F		27 M	0712 1256 1917	0350 0951 1613	3.4E 2.6F 2.7E 2.4F
13 F	1146 1758 2356	0241 0842 1459 2054	4.1E 3.4F 3.4E 3.5F		28 Sa	0655 1239 1858	0332 0936 1553 2141	3.8E 2.8F 3.0E 2.8F		13 M	0713 1308 1924	0356 1000 1622	4.4E 3.7F 3.7E 3.7E		28 Tu	0750 1336 1959	0430 1029 1655	3.2E 2.5F 2.6E 2.3F
14 Sa	1232 1844	0322 0928 1544 2141	4.2E 3.4F 3.4E 3.5F		29 Su	0737 1321 1941	0416 1014 2220	3.5E 2.6F 2.7E 2.5F		14 Tu	0807 1402 2024	0451 1055 2315	4.3E 3.6F 3.7E 3.5F		29 W	0829 1416 2042	0511 1107 2321	3.0E 2.4F 2.5E 2.2F
15 Su	1322 1935	0410 1017 1636 2232	4.1E 3.4F 3.4E 3.4F		30 M	0820 1404 2027	0459 1055 2305	3.2E 2.4F 2.5E 2.3F		15 W	0903 1500 2128	0549 1149 1821	4.1E 3.5F 3.7E		30 Th	0908 1459	0554 1149	2.8E 2.4E
					31 Tu	0904 1449 2117	0543 1136 2352	2.9E 2.3F 2.3E 2.0F							2130			

Time meridian 75° W. 0000 is midnight. 1200 is noon.

THE RACE, LONG ISLAND SOUND, 1983

F-Flood, Dir. 295° True E-Ebb, Dir. 100° True

JULY				AUGUST										
Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current	
	h.m.	h.m.	h.m.	knots		h.m.	h.m.	h.m.	knots		h.m.	h.m.	h.m.	knots
1 F	0304 0950 1543 2221	0008 2.1F 2.6E 2.3F 2.4E	16 Sa	0401 1037 1636 2320	0057 3.2F 3.8E 3.4F 3.8E	1 M	0405 1032 1634 2325	0110 2.1F 2.4E 2.5F 2.8E	16 Tu	0000 0540 1212 1806	0248 2.5F 2.9E 2.7F 3.4E			
2 Sa	0353 1035 1631 2315	0056 2.0F 2.5E 2.3F 2.5E	17 Su	0504 1138 1736	0205 3.0F 3.5E 3.2F 3.7E	2 Tu	0501 1125 1729	0203 2.1F 2.4E 2.5F 2.9E	17 W	0103 0645 1313 1905	0359 2.4F 2.8E 2.6F 3.3E			
3 Su	0446 1122 1720	0149 2.0F 2.4E 2.4F 2.7E	18 M	0607 1238 1835	0315 2.8F 3.3E 3.0F 3.7E	3 W	0602 1222 1826	0303 2.2F 2.5E 2.7F 3.2E	18 Th	0202 0747 1411 2001	0503 2.4F 2.7E 2.5F 3.3E			
4 M	0542 1212 1811	0242 2.1F 2.5E 2.5F 2.9E	19 Tu	0710 1336 1932	0418 2.7F 3.1E 2.9F 3.7E	4 Th	0703 1321 1925	0402 2.4F 2.7E 2.9E 3.5E	19 F	0256 0842 1504 2051	0554 2.5F 2.8E 2.6F			
5 Tu	0639 1302 1902	0337 2.2F 2.6E 2.7F 3.2E	20 W	0810 1432 2025	0521 2.7F 3.0E 2.9F 3.7E	5 F	0803 1421 2022	0457 2.7F 3.0E 3.2F 3.9E	20 Sa	0343 0930 1551 2136	0016 3.4E 2.6F 2.9E 2.6F			
6 W	0735 1353 1954	0433 2.5F 2.8E 2.9F 3.6E	21 Th	0905 1524 2114	0617 2.7F 3.0E 2.8F	6 Sa	0900 1518 2118	0554 3.1F 3.4E 3.6F	21 Su	0426 1011 1634 2216	0059 3.4E 2.6F 3.0E 2.6F			
7 Th	0829 1445 2046	0526 2.8F 3.0E 3.2F	22 F	1007 1611 2158	0037 3.7E 2.7F 2.9E 2.8F	7 Su	1006 1614 2213	0049 4.3E 3.5F 3.8E 3.9F	22 M	0505 1048 1713 2254	0141 3.5E 2.7F 3.0E 2.7F			
8 F	0922 1536 2137	0617 3.1F 3.3E 3.5F	23 Sa	1036 1655 2239	0124 3.6E 2.7F 2.9E 2.7F	8 M	1048 1708 2306	0140 4.6E 3.9F 4.2E 4.1F	23 Tu	0540 1123 1750 2330	0220 3.5E 2.7F 3.1E 2.7F			
9 Sa	1015 1628 2229	0709 3.4F 3.6E 3.8F	24 Su	1116 1736 2317	0207 3.6E 2.7F 2.9E 2.6F	9 Tu	1139 1802 2359	0232 4.8E 4.1F 4.4E 4.2F	24 W	0613 1157 1825	0257 3.4E 2.8F 3.1E 2.7F			
10 Su	1106 1722 2321	0801 3.7F 3.8E 3.9F	25 M	1153 1815 2354	0247 3.5E 2.7F 2.9E 2.6F	10 W	1231 1857	0324 4.8E 4.2F 4.5E 4.1F	25 Th	0006 0645 1231 1900	0334 3.3E 2.8F 3.1E 2.7F			
11 M	1158 1816	0249 4.6E 3.9F 4.0F	26 Tu	1228 1852	0325 3.4E 2.6F 2.8E 2.5F	11 Th	1323 1953	0413 4.7E 4.1F 4.5E 3.9F	26 F	0042 0715 1305 1936	0408 3.1E 2.8F 3.0E 2.6F			
12 Tu	1251 1912	0341 4.7E 4.0F 4.1E 3.9F	27 W	1304 1930	0403 3.2E 2.6F 2.8E 2.5F	12 F	1415 2051	0507 4.4E 3.9F 4.3E 3.6F	27 Sa	0119 0748 1341 2015	0441 3.0E 2.7F 3.0E 2.5F			
13 W	1345 2011	0435 4.6E 3.9F 4.1E 3.8F	28 Th	1341 2009	0440 3.1E 2.6F 2.7E 2.4F	13 Sa	1510 2151	0602 4.0E 3.6F 4.0E	28 Su	0159 0823 1420 2059	0514 2.8E 2.7F 2.9E 2.4F			
14 Th	1440 2112	0530 4.4E 3.8F 4.0E 3.5F	29 F	1419 2050	0517 2.9E 2.5F 2.7E 2.3F	14 Su	1606 2255	0035 3.2F 3.6E 3.3F 3.7E	29 M	0242 0905 1505 2150	0549 2.6E 2.6F 2.9E			
15 F	1537 2215	0625 4.1E 3.6F 3.9E	30 Sa	1500 2137	0553 2.7E 2.5F 2.7E	15 M	1705	0139 2.8F 3.2E 2.9F 3.5E	30 Tu	0332 0953 1556 2248	0038 2.3F 2.5E 2.5F 2.9E			
			31 Su	0945 1545 2228	0021 2.2F 2.6E 2.5F 2.7E				31 W	0430 1050 1655 2352	0133 2.2F 2.4E 2.5F 3.0E			

Time meridian 75° W. 0000 is midnight. 1200 is noon.

F-Flood, Dir. 295° True E-Ebb, Dir. 100° True

SEPTEMBER

OCTOBER

Slack Water			Maximum Current			Slack Water			Maximum Current			Slack Water			Maximum Current			
Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.	
	h.m.	knots		h.m.	knots		h.m.	knots		h.m.	knots		h.m.	knots		h.m.	knots	
1 Th	0533 1155 1758	2.3F 2.5E 3.2E	16 F	0132 0718 1347 1930	2.2F 2.5E 2.2F 3.0E	1 Sa	0034 0621 1251 1846	2.6F 2.9E 2.9F 3.5E	16 Su	0146 0733 1410 1946	2.2F 2.6E 2.2F 2.9E	16 Su	0146 0733 1410 1946	2.2F 2.6E 2.2F 2.9E				
2 F	0056 0639 1302 1903	2.5F 3.2E 2.9F 3.5E	17 Sa	0225 0812 1440 2022	2.3F 2.7E 2.4F 3.2E	2 Su	0136 0725 1356 1950	2.9F 3.4E 3.2F 3.9E	17 M	0233 0819 1456 2033	2.4F 2.9E 2.4F 3.1E	17 M	0233 0819 1456 2033	2.4F 2.9E 2.4F 3.1E				
3 Sa	0157 0742 1406 2005	2.8F 3.2E 3.2F 3.9E	18 Su	0312 0858 1526 2108	2.5F 2.9E 2.5F	3 M	0233 0823 1456 2049	3.4F 3.9E 3.6F	18 Tu	0315 0900 1538 2117	2.6F 2.20 2.6F	18 Tu	0315 0900 1538 2117	2.6F 2.20 2.6F				
4 Su	0253 0841 1506 2103	3.2F 3.6E 3.6F	19 M	0353 0939 1608 2149	3.3E 2.6F 3.1E 2.6F	4 Tu	0325 0918 1550 2144	4.2E 3.8F 3.9F	19 W	0352 0937 1616 2157	2.8F 2.59 2.8E 2.8F	19 W	0352 0937 1616 2157	2.8F 2.59 2.8E 2.8F				
5 M	0346 0936 1602 2158	4.3E 3.7F 4.1E 4.0F	20 Tu	0431 1015 1647 2227	3.4E 3.2E 2.8F	5 W	0415 1009 1642 2235	4.5E 4.1F 4.7E 4.1F	20 Th	0427 1013 1653 2235	3.3E 2.9F 3.6E 2.9F	20 Th	0427 1013 1653 2235	3.3E 2.9F 3.6E 2.9F				
6 Tu	0436 1028 1655 2251	4.6E 4.0F 4.5E 4.2F	21 W	0506 1049 1723 2304	3.4E 2.9F 3.3E 2.8F	6 Th	0503 1057 1733 2325	4.6E 4.2F 4.8E 4.1F	21 F	0500 1048 1728 2312	3.3E 3.1F 3.7E 3.0F	21 F	0500 1048 1728 2312	3.3E 3.1F 3.7E 3.0F				
7 W	0525 1119 1748 2342	4.8E 4.2F 4.3F	22 Th	0538 1123 1757 2340	3.4E 2.9F 3.4E 2.9F	7 F	0550 1145 1822	4.5E 4.2F 4.8E 4.0F	22 Sa	0532 1123 1804 2350	3.3E 3.1F 3.7E 3.1F	22 Sa	0532 1123 1804 2350	3.3E 3.1F 3.7E 3.1F				
8 Th	0613 1208 1840	4.8E 4.3F 4.2F	23 F	0609 1156 1831	3.3E 3.0F 3.4E 2.9F	8 Sa	0613 1232 1912	4.3E 4.0F 3.7F	23 Su	0606 1159 1841	3.2E 3.7E 3.0F	23 Su	0606 1159 1841	3.2E 3.7E 3.0F				
9 F	0033 0702 1258 1933	4.6E 4.2F 4.6E 3.9F	24 Sa	0016 0639 1230 1906	3.2E 3.0F 3.4E 2.8F	9 Su	0102 0725 1319 2004	3.9E 3.6F 4.2E 3.3F	24 M	0030 0642 1239 1922	3.1E 3.1F 3.6E 3.0F	24 M	0030 0642 1239 1922	3.1E 3.1F 3.6E 3.0F				
10 Sa	0124 0752 1348 2027	4.2E 3.9F 4.3E 3.5F	25 Su	0053 0712 1307 1946	3.0E 2.9F 3.3E 2.7F	10 M	0151 0815 1407 2057	3.5E 3.2F 3.8E 2.9F	25 Tu	0112 0724 1322 2009	3.0E 3.0F 3.5E 2.8F	25 Tu	0112 0724 1322 2009	3.0E 3.0F 3.5E 2.8F				
11 Su	0216 0844 1439 2125	3.8E 3.5F 3.9E	26 M	0133 0749 1347 2030	2.9E 2.8F 3.2E 2.6F	11 Tu	0243 0910 1458 2155	3.0E 2.7F 3.3E	26 W	0200 0813 1412 2102	2.8E 2.9F 3.4E 2.7F	26 W	0200 0813 1412 2102	2.8E 2.9F 3.4E 2.7F				
12 M	0310 0940 1533 2226	3.0F 3.3E 3.0F 3.6E	27 Tu	0217 0833 1433 2122	2.7E 2.7F 3.1E	12 W	0338 1009 1553 2255	2.4F 2.6E 2.3F 3.0E	27 Th	0254 0911 1510 2202	2.7E 2.7F 3.3E	27 Th	0254 0911 1510 2202	2.7E 2.7F 3.3E				
13 Tu	0409 1040 1631 2330	2.6F 2.9E 2.6F 3.2E	28 W	0309 0926 1528 2221	2.5F 2.6E 2.6F 3.0E	13 Th	0437 1113 1652 2356	2.1F 2.4E 2.0F 2.8E	28 F	0354 1018 1614 2307	2.6F 2.7E 2.7F 3.2E	28 F	0354 1018 1614 2307	2.6F 2.7E 2.7F 3.2E				
14 W	0511 1144 1731	2.3F 2.6E 2.3F 3.0E	29 Th	0409 1029 1631 2327	2.4F 2.5E 2.5F 3.0E	14 F	0540 1218 1753	2.0F 2.3E 1.9F 2.7E	29 Sa	0459 1131 1723	2.7F 2.7F 3.3E	29 Sa	0459 1131 1723	2.7F 2.7F 3.3E				
15 Th	0033 0615 1248 1833	2.2F 2.5E 2.2F 3.0E	30 F	0514 1140 1738	2.4F 2.6E 2.6F 3.2E	15 Sa	0054 0639 1317 1852	2.1F 2.4E 2.0F 2.8E	30 Su	0013 0605 1242 1831	2.8F 3.2E 2.9F 3.5E	30 Su	0013 0605 1242 1831	2.8F 3.2E 2.9F 3.5E				
									31 M	0115 0707 1346 1935	3.1F 3.6E 3.2F 3.8E	31 M	0115 0707 1346 1935	3.1F 3.6E 3.2F 3.8E				

Time meridian 75° W. 0000 is midnight. 1200 is noon.

THE RACE, LONG ISLAND SOUND, 1983

F-Flood, Dir. 295° True E-Ebb, Dir. 100° True

NOVEMBER								DECEMBER							
Day	Slack Water			Maximum Current			Day	Slack Water			Maximum Current				
	Time	Time	Vel.	Time	Time	Vel.		Time	Time	Vel.	Time	Time	Vel.		
	h.m.	h.m.	knots	h.m.	h.m.	knots		h.m.	h.m.	knots	h.m.	h.m.	knots		
1 Tu	0212 0805 1444 2034	0503 1129 1735 2354	3.5F 4.1E 3.5F 4.1E	16 W	0230 0816 1503 2039	0513 1143 1742 2.5F 3.2E 2.5F	17 Th	0244 0840 1525 2113	0539 1203 1816 3.6F 4.3E 3.4F	16 F	0223 0815 1509 2046	0510 1147 1745 2.7F 3.4E 2.6F			
2 W	0305 0859 1538 2128	0557 1222 1829	3.8F 4.4E 3.7F	17 Th	0309 0856 1543 2122	0001 0554 1226 1822 3.0E 2.8F 3.4E 2.7F	2 F	0335 0930 1616 2204	0027 0630 1255 1909 3.8E 3.7F 4.5E 3.5F	17 Sa	0305 0859 1552 2133	0007 0555 1233 1830 2.9E 2.9F 3.7E 2.8F			
3 Th	0354 0949 1629 2219	0045 0646 1311 1918	4.2E 3.9F 4.7E 3.9F	18 F	0346 0935 1622 2204	0043 0630 1304 1859 3.1E 3.0F 3.7E 2.9F	3 Sa	0424 1017 1704 2252	0116 0717 1340 1955 3.8E 3.6F 4.4E 3.4F	18 Su	0348 0943 1634 2219	0050 0640 1316 1915 3.1E 3.2F 3.9E 3.1F			
4 F	0442 1036 1718 2308	0133 0735 1400 2005	4.2E 4.0F 4.7E 3.8F	19 Sa	0422 1014 1700 2245	0124 0710 1345 1941 3.2E 3.1F 3.8E 3.1F	4 Su	0510 1102 1751 2338	0203 0802 1427 2038 3.7E 3.5F 4.3E 3.3F	19 M	0431 1028 1717 2304	0134 0725 1359 2001 3.2E 3.4F 4.1E 3.3F			
5 Sa	0528 1122 1806 2355	0222 0818 1447 2052	4.1E 3.9F 4.6E 3.7F	20 Su	0459 1053 1739 2327	0203 0751 1421 2021 3.2E 3.3F 3.9E 3.2F	5 M	0555 1145 1835	0249 0845 1512 2121 3.5E 3.3F 4.1E 3.1F	20 Tu	0516 1114 1801 2351	0220 0810 1443 2046 3.4E 3.6F 4.3E 3.5F			
6 Su	0614 1207 1853	0308 0904 1533 2137	3.9E 3.6F 4.3E 3.4F	21 M	0537 1134 1820	0240 0833 1504 2105 3.2E 3.3F 4.0E 3.2F	6 Tu	0622 1227 1919	0335 0926 1555 2159 3.2E 3.0F 3.8E 2.9F	21 W	0603 1202 1847	0305 0859 1530 2135 3.5E 3.6F 4.3E 3.6F			
7 M	0701 1251 1941	0356 0947 1619 2223	3.5E 3.3F 4.0E 3.1F	22 Tu	0620 1218 1904	0321 0918 1545 2152 3.2E 3.4F 4.0E 3.2F	7 W	0725 1309 2003	0419 1007 1642 2240 3.0E 2.7F 3.5E 2.6F	22 Th	0655 1253 1936	0354 0949 1619 2224 3.6E 3.6F 4.3E 3.6F			
8 Tu	0749 1336 2030	0445 1033 1708 2309	3.2E 2.9F 3.6E 2.7F	23 W	0656 1306 1952	0408 1007 1632 2239 3.2E 3.3F 3.9E 3.2F	8 Th	0812 1351 2047	0507 1050 1727 2323 2.7E 2.4F 3.1E 2.4F	23 F	0750 1346 2029	0448 1044 1715 2317 3.6E 3.5F 4.1E 3.5F			
9 W	0840 1424 2122	0533 1120 1759 2357	2.8E 2.5F 3.2E 2.4F	24 Th	0701 1358 2046	0458 1058 1727 2336 3.1E 3.2F 3.7E 3.1F	9 F	0823 1402 2134	0556 1136 1816 2.5E 2.2F 2.9E	24 Sa	0826 1444 2125	0546 1139 1812 3.6E 3.4F 3.9E			
10 Th	0936 1514 2216	0629 1210 1853	2.5E 2.1F 2.9E	25 F	0741 1457 2145	0559 1153 1828 3.1E 3.0F 3.6E	10 Sa	0921 1526 2222	0012 0646 1226 1906 2.3F 2.4E 2.0F 2.6E	25 Su	0955 1545 2225	0013 0647 1240 1913 3.4F 3.6E 3.2F 3.7E			
11 F	1037 1609 2312	0051 0723 1306 1948	2.1F 2.3E 1.9F 2.6E	26 Sa	0801 1009 1600 2247	0031 0704 1257 1933 3.0F 3.1E 2.9F 3.5E	11 Su	1041 1619 2313	0100 0738 1319 1958 2.1F 2.3E 1.8F 2.5E	26 M	1049 1649 2326	0114 0748 1344 2016 3.3F 3.6E 3.0F 3.6E			
12 Sa	1139 1707	0150 0822 1408 2042	2.0F 2.3E 1.8F 2.6E	27 Su	0843 1120 1707 2351	0134 0808 1402 2038 3.0F 3.3E 2.8F 3.5E	12 M	1150 1715	0151 0831 1416 2052 2.1F 2.4E 1.8F 2.4E	27 Tu	1211 1754	0217 0851 1454 2117 3.3F 3.7E 2.9F 3.5E			
13 Su	1238 1805	0251 0916 1514 2139	2.0F 2.4E 1.8F 2.6E	28 M	0854 1229 1814	0238 0912 1512 2139 3.1F 3.5E 2.9F 3.5E	13 Tu	1245 1811	0242 0924 1512 2144 2.2F 2.6E 1.9F 2.5E	28 W	1315 1859	0322 0952 1605 2216 3.2F 3.8E 2.9F 3.4E			
14 M	1331 1901	0346 1009 1609 2.7E	2.1F 2.6E 2.0F	29 Tu	0952 1332 1918	0343 1013 1620 2239 3.2F 3.8E 3.1F 3.7E	14 W	1337 1906	0333 1015 1605 2233 2.3F 2.8E 2.1F 2.6E	29 Th	1416 2001	0425 1050 1709 2313 3.3F 4.0E 3.0F 3.4E			
15 Tu	1419 1952	0433 1100 1659 2315	2.3F 2.9E 2.2F 2.8E	30 W	1015 1431 2018	0443 1110 1721 2334 3.4F 4.1E 3.3F 3.8E	15 Th	1424 1958	0424 1103 1657 2321 2.5F 3.1E 2.3F 2.7E	30 F	1512 2058	0526 1145 1806 3.3F 4.1E 3.1F			
											31 Sa	0318 0913 1603 2151	0009 0617 1236 1857 3.4E 3.3F 4.1E 3.1F		

Time meridian 75° W. 0000 is midnight. 1200 is noon.

HELL GATE (off Mill Rock), EAST RIVER, NEW YORK, 1983

F-Flood, Dir. 050° True E-Ebb, Dir. 230° True

JANUARY

FEBRUARY

Slack Water			Maximum Current			Slack Water			Maximum Current			Slack Water			Maximum Current																																																																																																																																																																	
Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.	Day	Time	Vel.																																																																																																																																																															
Day	h.m.	knots	Day	h.m.	knots	Day	h.m.	knots	Day	h.m.	knots	Day	h.m.	knots	Day	h.m.	knots																																																																																																																																																															
1 Sa	0509	0141 5.1E 1112 1411 5.2E 1747 2039 3.7F 2341	16 Su	0516 1114 1744 2032 2333	0144 4.7E 0809 3.4F 1405 4.8E 2032 3.3F	1 Tu	0644 1247 1915	0314 5.0E 0942 3.8F 1542 5.0E 2211 3.6F	16 W	0600 1207 1822	0235 4.8E 0858 3.6F 1457 4.8E 2116 3.4F	2 Su	0605 1207 1842	0235 5.0E 0903 3.8F 1506 5.1E 2135 3.6F	17 M	0554 1153 1822	0223 4.7E 0848 3.4F 1446 4.8E 2109 3.2F	2 W	0739 1340 2008	0408 4.9E 1037 3.6F 1636 4.7E 2305 3.4F	17 Th	0639 1248 1900	0316 4.8E 0939 3.5F 1539 4.7E 2159 3.4F	3 M	0703 1304 1939	0330 4.9E 1001 3.6F 1601 4.9E 2233 3.5F	18 Tu	0632 1232 1900	0302 4.7E 0927 3.3F 1527 4.7E 2148 3.2F	3 Th	0836 1434 2103	0502 4.7E 1134 3.4F 1730 4.5E	18 F	0722 1332 1942	0358 4.8E 1024 3.4F 1625 4.6E 2244 3.3F	4 Tu	0803 1402 2038	0427 4.8E 1059 3.4F 1700 4.7E 2333 3.3F	19 W	0713 1314 1940	0345 4.6E 1008 3.2F 1609 4.6E 2231 3.1F	4 F	0259 0934 1530 2159	0001 3.2F 0558 4.4E 1233 3.1F 1826 4.3E	19 Sa	0811 1421 2031	0447 4.7E 1112 3.2F 1712 4.5E 2335 3.2F	5 W	0906 1501 2138	0528 4.6E 1204 3.3F 1801 4.5E	20 Th	0758 1359 2024	0430 4.6E 1055 3.1F 1654 4.5E 2319 3.0F	5 Sa	0355 1033 1626 2256	0101 3.0F 0657 4.3E 1334 3.0F 1927 4.1E	20 Su	0909 1518 2129	0540 4.6E 1207 3.1F 1806 4.4E	6 Th	1009 1601 2237	0635 4.5E 1308 3.1F 1908 4.4E	21 F	0848 1450 2113	0519 4.5E 1144 3.1F 1745 4.5E	6 Su	0451 1131 1722 2352	0200 2.9F 0801 4.2E 1436 2.9F 2028 4.0E	21 M	0344 1015 1622 2236	0034 3.1F 0639 4.5E 1312 3.0F 1909 4.3E	7 F	0428 1110 1659 2334	0139 3.1F 0740 4.4E 1411 3.1F 2014 4.3E	22 Sa	0312 0945 1545 2208	0008 3.0F 0613 4.5E 1239 3.0F 1838 4.4E	7 M	0546 1226 1815	0259 2.9F 0902 4.1E 1531 2.9F 2125 4.0E	22 Tu	0451 1126 1729 2346	0138 3.1F 0744 4.5E 1417 3.1F 2014 4.3E	8 Sa	0524 1207 1754	0239 3.1F 0845 4.4E 1510 3.1F 2111 4.3E	23 Su	0410 1048 1646 2309	0105 3.0F 0708 4.5E 1339 3.0F 1937 4.4E	8 Tu	0638 1316 1905	0350 3.0F 0957 4.2E 1618 3.0F 2213 4.1E	23 W	0600 1234 1836	0249 3.2F 0852 4.6E 1531 3.2F 2121 4.5E	9 Su	0617 1300 1845	0330 3.1F 0941 4.4E 1559 3.1F 2200 4.3E	24 M	0512 1152 1749	0204 3.1F 0809 4.6E 1442 3.1F 2039 4.5E	9 W	0726 1401 1951	0435 3.1F 1038 4.3E 1701 3.1F 2254 4.3E	24 Th	0706 1337 1937	0357 3.4F 1000 4.7E 1635 3.4F 2229 4.7E	10 M	0706 1347 1933	0419 3.2F 1026 4.5E 1645 3.2F 2245 4.4E	25 Tu	0615 1255 1851	0308 3.3F 0912 4.7E 1547 3.3F 2140 4.6E	10 Th	0811 1443 2033	0517 3.2F 1117 4.5E 1742 3.2F 2330 4.4E	25 F	0807 1435 2035	0501 3.7F 1104 4.9E 1736 3.7F 2330 4.9E	11 Tu	0752 1431 2016	0504 3.2F 1107 4.6E 1730 3.2F 2322 4.5E	26 W	0717 1355 1950	0409 3.5F 1014 4.9E 1647 3.4F 2241 4.8E	11 F	0853 1523 2116	0556 3.4F 1152 4.6E 1819 3.3F	26 Sa	0903 1528 2128	0600 3.9F 1202 5.1E 1828 3.9F	12 W	0835 1512 2058	0543 3.3F 1140 4.7E 1807 3.3F 2356 4.5E	27 Th	0816 1452 2047	0510 3.7F 1114 5.1E 1745 3.6F 2340 4.9E	12 Sa	0333 0934 1600 2153	0005 4.5E 0631 3.5F 1228 4.7E 1854 3.4F	27 Su	0348 0957 1619 2219	0026 5.1E 0653 4.0F 1256 5.1E 1919 4.0F	13 Th	0916 1551 2138	0620 3.4F 1217 4.7E 1844 3.3F	28 F	0913 1546 2141	0608 3.8F 1212 5.2E 1840 3.8F	13 Su	0410 1013 1636 2230	0043 4.7E 0709 3.5F 1305 4.8E 1927 3.5F	28 M	0440 1048 1708 2309	0119 4.8E 0743 3.6F 1339 4.8E 2002 3.5F	14 F	0956 1629 2217	0031 4.6E 0657 3.4F 1253 4.8E 1919 3.3F	29 Sa	0402 1008 1639 2234	0036 5.1E 0703 3.9F 1307 5.2E 1934 3.8F	14 M	0447 1051 1712 2307	0119 4.8E 0743 3.6F 1339 4.8E 2002 3.5F	15 Sa	1035 1707 2255	0107 4.7E 0733 3.4F 1328 4.8E 1956 3.3F	30 Su	0456 1101 1730 2327	0130 5.1E 0757 4.0F 1400 5.2E 2025 3.8F	15 Tu	0523 1129 1747 2344	0156 4.8E 0821 3.6F 1418 4.8E 2039 3.5F	31 M	0550 1154 1822	0223 5.1E 0850 3.9F 1451 5.1E 2118 3.8F

Time meridian 75° W. 0000 is midnight. 1200 is noon.

HELL GATE (off Mill Rock), EAST RIVER, NEW YORK, 1983

F-Flood, Dir. 050° True E-Ebb, Dir. 230° True

MAY						JUNE									
Day	Slack Water			Maximum Current			Day	Slack Water			Maximum Current				
	Time	h.m.	knots	Time	h.m.	knots		Time	h.m.	knots	Time	h.m.	knots		
1	0032	0322	4.6E	16	0003	0258	5.0E	1	0128	0416	4.4E	16	0148	0440	4.7E
Su	0657	0952	3.3F	M	0631	0927	3.5F	W	0800	1049	2.9F	Th	0821	1115	3.3F
	1300	1543	4.3E		1236	1522	4.7E		1356	1637	4.2E		1420	1710	4.6E
	1912	2210	3.2F		1845	2148	3.5F		2015	2306	2.9F		2047	2345	3.3F
2	0117	0404	4.4E	17	0058	0351	4.8E	2	0216	0503	4.2E	17	0251	0544	4.6E
M	0744	1036	3.1F	Tu	0728	1024	3.4F	Th	0848	1138	2.8F	F	0924	1221	3.3F
	1346	1627	4.1E		1333	1617	4.5E		1444	1726	4.1E		1522	1816	4.5E
	2000	2256	3.0F		1946	2246	3.4F		2106	2357	2.8F		2153		
3	0205	0450	4.2E	18	0158	0450	4.6E	3	0306	0554	4.2E	18		0055	3.3F
Tu	0834	1126	2.9F	W	0831	1125	3.2F	F	0938	1227	2.8F	Sa	0354	0652	4.5E
	1435	1712	4.0E		1435	1718	4.4E		1534	1817	4.1E		1026	1327	3.2F
	2052	2347	2.8F		2054	2354	3.2F		2158				1624	1927	4.5E
4	0256	0541	4.0E	19	0304	0554	4.5E	4		0051	2.8F	19		0200	3.3F
W	0927	1220	2.7F	Th	0938	1233	3.1F	Sa	0358	0645	4.1E	Su	0457	0801	4.4E
	1528	1805	3.9E		1540	1829	4.3E		1029	1317	2.8F		1126	1430	3.3F
	2147				2205				1625	1909	4.1E		1724	2035	4.5E
5		0043	2.7F	20		0107	3.2F	5		0144	2.9F	20		0306	3.3F
Th	0351	0635	4.0E	F	0412	0707	4.4E	Su	0451	0738	4.2E	M	0556	0904	4.4E
	1022	1316	2.7F		1045	1345	3.2F		1118	1410	2.9F		1222	1527	3.4F
	1621	1900	3.9E		1645	1941	4.4E		1715	2002	4.3E		1820	2136	4.6E
6		0140	2.8F	21		0217	3.3F	6		0235	3.0F	21	0055	0359	3.4F
F	0446	0730	4.0E	Sa	0518	0817	4.4E	M	0543	0830	4.3E	Tu	0650	0959	4.5E
	1115	1411	2.8F		1148	1452	3.3F		1206	1459	3.1F		1314	1618	3.4F
	1714	1955	4.0E		1747	2053	4.5E		1804	2053	4.5E		1912	2227	4.7E
7		0233	2.9F	22	0018	0324	3.4F	7	0033	0327	3.2F	22	0146	0450	3.4F
Sa	0539	0823	4.1E	Su	0619	0925	4.5E	Tu	0633	0921	4.5E	W	0740	1051	4.5E
	1205	1502	2.9F		1245	1550	3.5F		1252	1547	3.2F		1402	1707	3.5F
	1803	2049	4.1E		1844	2154	4.7E		1852	2146	4.7E		2000	2314	4.7E
8	0026	0325	3.0F	23	0115	0419	3.5F	8	0122	0415	3.3F	23	0234	0535	3.5F
Su	0629	0915	4.2E	M	0715	1022	4.6E	W	0722	1010	4.6E	Th	0827	1130	4.6E
	1251	1547	3.1F		1337	1641	3.6F		1338	1635	3.4F		1447	1751	3.5F
	1849	2138	4.4E		1936	2248	4.8E		1940	2234	4.9E		2045	2355	4.8E
9	0112	0410	3.2F	24	0207	0510	3.6F	9	0210	0504	3.5F	24	0318	0618	3.5F
M	0715	1000	4.4E	Tu	0806	1111	4.7E	Th	0810	1058	4.8E	F	0911	1209	4.6E
	1333	1629	3.3F		1425	1730	3.7F		1423	1722	3.6F		1530	1831	3.5F
	1933	2223	4.6E		2025	2335	4.9E		2028	2323	5.0E		2128		
10	0156	0454	3.4F	25	0255	0558	3.7F	10	0258	0552	3.6F	25		0032	4.8E
Tu	0800	1045	4.6E	W	0853	1156	4.8E	F	0858	1146	4.9E	Sa	0400	0657	3.5F
	1414	1710	3.5F		1510	1815	3.7F		1510	1809	3.7F		0953	1248	4.6E
	2016	2306	4.8E		2110				2116				1611	1909	3.5F
11	0238	0533	3.6F	26		0018	5.0E	11		0012	5.1E	26		0108	4.8E
W	0843	1130	4.8E	Th	0340	0641	3.7F	Sa	0346	0641	3.7F	Su	0441	0735	3.4F
	1454	1753	3.6F		0937	1233	4.8E		0946	1235	4.9E		1034	1324	4.6E
	2058	2351	5.0E		1554	1857	3.7F		1558	1858	3.8F		1651	1950	3.5F
12	0321	0616	3.7F	27		0057	4.9E	12		0103	5.2E	27		0146	4.7E
Th	0926	1213	4.9E	F	0423	0722	3.6F	Su	0436	0730	3.7F	M	0521	0813	3.4F
	1535	1834	3.7F		1020	1314	4.7E		1036	1325	4.9E		1114	1402	4.6E
	2141				1636	1936	3.6F		1649	1950	3.8F		1731	2029	3.4F
13		0036	5.1E	28		0134	4.9E	13		0154	5.1E	28		0223	4.7E
F	0405	0659	3.8F	Sa	0505	0801	3.5F	M	0528	0821	3.7F	Tu	0601	0852	3.3F
	1010	1256	4.9E		1102	1350	4.6E		1128	1418	4.9E		1155	1440	4.5E
	1617	1917	3.8F		1717	2015	3.5F		1742	2041	3.7F		1812	2107	3.3F
14		0120	5.1E	29		0213	4.8E	14		0247	5.1E	29	0013	0302	4.6E
Sa	0450	0746	3.7F	Su	0548	0842	3.4F	Tu	0623	0916	3.6F	W	0642	0932	3.2F
	1056	1343	4.9E		1144	1428	4.5E		1223	1511	4.8E		1236	1521	4.4E
	1702	2004	3.8F		1759	2057	3.4F		1840	2140	3.6F		1853	2148	3.2F
15		0209	5.1E	30	0000	0251	4.6E	15	0048	0343	4.9E	30	0056	0345	4.5E
Su	0539	0834	3.7F	M	0630	0922	3.2F	W	0721	1014	3.4F	Th	0723	1014	3.1F
	1144	1430	4.8E		1226	1509	4.4E		1320	1608	4.7E		1319	1602	4.4E
	1751	2053	3.7F		1842	2136	3.2F		1941	2240	3.5F		1936	2233	3.1F
				31	0043	0332	4.5E								
				Tu	0714	1004	3.1F								
					1310	1552	4.3E								
					1927	2221	3.1F								

Time meridian 75° W. 0000 is midnight. 1200 is noon.

THE NARROWS, NEW YORK HARBOR, NEW YORK, 1983

F-Flood, Dir. 340° True E-Ebb, Dir. 160° True

MAY				JUNE											
Day	Slack Water Time h.m.	Maximum Current Time Vel. h.m. knots	Day	Slack Water Time h.m.	Maximum Current Time Vel. h.m. knots	Day	Slack Water Time h.m.	Maximum Current Time Vel. h.m. knots	Day	Slack Water Time h.m.	Maximum Current Time Vel. h.m. knots				
Su	0025	0338 2.0E	16	0015	0329 2.3E	1	0125	0444 1.8E	16	0143	0458 2.3E				
	0730	0945 1.3F		M	0716		0933 1.5F	W		0844	1055 1.2F	Th	0847	1113 1.7F	
	1239	1546 1.7E			1231		1538 2.0E			1350	1659 1.4E		1411	1722 1.9E	
	1921	2158 1.7F			1900		2153 2.0F			2038	2306 1.4F		2059	2333 1.9F	
2	0111	0427 1.9E	17	0107	0420 2.2E	2	0211	0534 1.7E	17	0237	0558 2.2E				
	M	0824		1036 1.2F	Tu		0814	1030 1.5F		Th	0933	1144 1.2F	F	0942	1212 1.7F
		1327		1637 1.5E			1326	1633 1.9E			1441	1755 1.4E		1512	1829 1.9E
		2016		2249 1.5F			2006	2252 1.9F			2135	2355 1.4F		2204	
3	0158	0515 1.7E	18	0201	0519 2.1E	3	0300	0630 1.7E	18		0032 1.7F				
	Tu	0918		1127 1.1F	W		0912	1128 1.5F		F	1020	1229 1.3F	Sa	0334	0700 2.1E
		1418		1732 1.4E			1426	1740 1.8E			1536	1856 1.4E		1036	1311 1.8F
		2114		2339 1.4F			2115	2351 1.8F			2231			1616	1935 1.9E
4	0248	0614 1.6E	19	0259	0623 2.1E	4		0045 1.3F	19		0138 1.6F				
	W	1011		1219 1.1F	Th		1009	1227 1.6F		Sa	0352	0724 1.7E	Su	0433	0757 2.1E
		1514		1833 1.3E			1529	1850 1.8E			1106	1320 1.3F		1129	1418 1.8F
		2211					2221				1633	1951 1.5E		1719	2033 2.0E
5		0030 1.3F	20		0050 1.7F	5		0138 1.3F	20		0007 1.5F				
	Th	0341		0713 1.6E	F		0400	0726 2.1E		Su	0445	0812 1.8E	M	0531	0849 2.1E
		1101		1312 1.1F			1103	1330 1.6F			1150	1411 1.4F		1220	1525 1.9F
		1614		1936 1.4E			1635	1954 1.9E			1728	2043 1.7E		1817	2128 2.1E
6		0123 1.3F	21		0156 1.7F	6		0233 1.3F	21		0106 1.5F				
	F	0437		0805 1.7E	Sa		0501	0824 2.1E		M	0538	0858 1.8E	Tu	0625	0941 2.0E
		1149		1411 1.2F			1156	1440 1.7F			1234	1505 1.6F		1311	1622 2.0F
		1712		2030 1.5E			1739	2053 2.1E			1818	2131 1.8E		1910	2219 2.1E
7		0223 1.3F	22		0312 1.6F	7		0330 1.3F	22		0202 1.5F				
	Sa	0532		0854 1.8E	Su		0500	0915 2.2E		Tu	0628	0941 1.9E	W	0715	1026 2.0E
		1235		1509 1.3F			1248	1550 1.9F			1317	1556 1.8F		1401	1708 2.0F
		1806		2118 1.7E			1837	2146 2.2E			1906	2217 2.0E		1957	2308 2.1E
8		0325 1.4F	23		0419 1.7F	8		0424 1.4F	23		0255 1.5F				
	Su	0622		0938 1.9E	M		0653	1006 2.2E		W	0715	1028 1.9E	Th	0802	1114 1.9E
		1319		1600 1.5F			1338	1641 2.0F			1400	1642 2.0F		1448	1749 2.0F
		1854		2203 1.8E			1929	2239 2.2E			1952	2306 2.1E		2042	
9		0416 1.5F	24		0511 1.7F	9		0510 1.5F	24		0000 2.1E				
	M	0708		1021 1.9E	Tu		0741	1052 2.1E		Th	0801	1111 2.0E	F	0342	0618 1.4F
		1401		1639 1.7F			1426	1726 2.1F			1442	1728 2.2F		0847	1203 1.9E
		1938		2251 2.0E			2017	2330 2.3E			2038	2357 2.3E		1532	1822 2.0F
10		0458 1.6F	25		0552 1.7F	10		0556 1.6F	25		0046 2.1E				
	Tu	0752		1104 2.0E	W		0827	1140 2.1E		F	0847	1202 2.0E	Sa	0427	0653 1.4F
		1441		1716 1.9F			1512	1805 2.2F			1526	1811 2.3F		0931	1249 1.8E
		2021		2337 2.1E			2103				2126			1615	1855 2.0F
11		0539 1.6F	26		0621 2.3E	11		0648 2.4E	26		0129 2.1E				
	M	0834		1150 2.0E	Th		0400	0633 1.6F		Sa	0428	0641 1.7F	Su	0510	0726 1.3F
		1518		1755 2.1F			0911	1229 2.0E			0936	1252 2.1E		1016	1334 1.8E
		2104					1555	1840 2.1F			1610	1857 2.4F		1656	1931 1.9F
12		0622 2.2E	27		0708 2.2E	12		0728 2.5E	27		0210 2.1E				
	Th	0404		0620 1.7F	F		0446	0708 1.5F		Su	0515	0728 1.7F	M	0553	0805 1.3F
		0917		1233 2.0E			0956	1315 1.9E			1027	1343 2.1E		1101	1418 1.7E
		1555		1836 2.2F			1637	1916 2.0F			1658	1946 2.3F		1738	2012 1.8F
13		0702 2.3E	28		0745 2.2E	13		0725 2.5E	28		0250 2.1E				
	F	0448		0702 1.7F	Sa		0531	0745 1.4F		M	0604	0819 1.7F	Tu	0636	0848 1.3F
		1001		1318 2.1E			1040	1358 1.9E			1121	1434 2.2E		1147	1457 1.7E
		1634		1919 2.2F			1719	1954 1.9F			1750	2039 2.2F		1822	2057 1.7F
14		0749 2.4E	29		0828 2.1E	14		0815 2.5E	29		0329 2.0E				
	Sa	0533		0749 1.6F	Su		0617	0828 1.3F		Tu	0656	0915 1.7F	W	0721	0935 1.3F
		1048		1403 2.1E			1126	1439 1.8E			1216	1525 2.1E		1233	1540 1.6E
		1716		2006 2.2F			1802	2039 1.8F			1848	2136 2.1F		1909	2144 1.6F
15		0838 2.4E	30		0916 2.0E	15		0904 2.4E	30		0411 1.9E				
	Su	0622		0838 1.6F	M		0704	0916 1.2F		W	0751	1015 1.7F	Th	0806	1020 1.3F
		1138		1449 2.0E			1213	1521 1.6E			1313	1621 2.0E		1320	1625 1.5E
		1804		2057 2.1F			1849	2126 1.6F			1953	2233 2.0F		2002	2234 1.5F
			31		0041 1.9E										
				Tu	0754	1008 1.2F									
					1300	1608 1.5E									
					1941	2217 1.5F									

Time meridian 75° W. 0000 is midnight. 1200 is noon.

THE NARROWS, NEW YORK HARBOR, NEW YORK, 1983

F-Flood, Dir. 340° True E-Ebb, Dir. 160° True

JULY						AUGUST								
Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current	
	h.m.	h.m.	Vel.	Vel.		h.m.	h.m.	Vel.	Vel.		h.m.	h.m.	Vel.	Vel.
1	0137	0456	1.8E		16	0213	0531	2.2E		1	0231	0550	1.7E	
F	0852	1107	1.3F		Sa	0913	1150	1.9F		M	0934	1205	1.6F	
	1408	1716	1.5E			1450	1803	2.0E			1513	1832	1.6E	
	2058	2321	1.4F			2144					2218			
2	0222	0544	1.7E		17		0011	1.7F		2		0027	1.2F	
Sa	0937	1152	1.4F		Su	0306	0630	2.0E		Tu	0320	0647	1.7E	
	1458	1813	1.5E			1007	1246	1.8F			1020	1254	1.6F	
	2155					1551	1909	1.9E			1610	1933	1.7E	
						2245					2315			
3		0010	1.3F		18		0112	1.5F		3		0118	1.2F	
Su	0309	0637	1.7E		M	0403	0730	2.0E		W	0416	0743	1.7E	
	1021	1240	1.5F			1100	1348	1.8F			1109	1347	1.7F	
	1552	1913	1.6E			1653	2012	1.9E			1709	2028	1.8E	
	2250					2346								
4		0059	1.3F		19		0221	1.3F		4	0013	0217	1.2F	
M	0401	0730	1.7E		Tu	0501	0822	1.9E		Th	0515	0836	1.8E	
	1104	1327	1.5F			1153	1455	1.8F			1201	1445	1.8F	
	1648	2006	1.7E			1753	2107	1.9E			1807	2122	2.0E	
	2346													
5		0152	1.2F		20	0045	0336	1.3F		5	0109	0318	1.3F	
Tu	0455	0819	1.8E		W	0558	0915	1.9E		F	0614	0931	1.9E	
	1149	1422	1.7F			1246	1600	1.8F			1257	1546	2.0F	
	1743	2058	1.8E			1847	2159	2.0E			1902	2213	2.1E	
6	0042	0249	1.2F		21	0142	0434	1.3F		6	0204	0420	1.4F	
W	0549	0908	1.8E		Th	0651	1003	1.8E		Sa	0709	1024	2.0E	
	1235	1517	1.8F			1337	1649	1.9F			1353	1642	2.2F	
	1835	2146	2.0E			1936	2248	2.0E			1954	2307	2.3E	
7	0136	0347	1.3F		22	0234	0523	1.3F		7	0255	0513	1.6F	
Th	0641	0954	1.9E		F	0739	1051	1.8E		Su	0803	1117	2.2E	
	1323	1610	2.0F			1426	1732	1.9F			1447	1734	2.3F	
	1926	2239	2.1E			2020	2335	2.0E			2045			
8	0229	0442	1.4F		23	0322	0602	1.3F		8		0002	2.4E	
F	0732	1045	2.0E		Sa	0825	1139	1.8E		M	0343	0604	1.8F	
	1413	1702	2.2F			1512	1809	1.9F			0857	1215	2.3E	
	2015	2331	2.3E			2102					1540	1824	2.4F	
											2136			
9	0319	0533	1.6F		24		0022	2.0E		9		0054	2.5E	
Sa	0823	1138	2.1E		Su	0405	0637	1.4F		Tu	0429	0653	2.0F	
	1503	1751	2.4F			0909	1227	1.8E			0951	1309	2.4E	
	2105					1555	1836	1.9F			1632	1913	2.4F	
						2143					2226			
10		0024	2.4E		25		0103	2.0E		10		0144	2.6E	
Su	0406	0620	1.7F		M	0445	0706	1.4F		W	0516	0742	2.0F	
	0914	1231	2.2E			0953	1313	1.8E			1045	1403	2.5E	
	1553	1838	2.4F			1636	1910	1.8F			1725	2002	2.3F	
	2155					2223					2317			
11		0117	2.5E		26		0144	2.1E		11		0232	2.6E	
M	0453	0710	1.8F		Tu	0525	0738	1.4F		Th	0603	0834	2.1F	
	1008	1326	2.3E			1037	1353	1.8E			1140	1452	2.5E	
	1644	1927	2.4F			1716	1946	1.8F			1819	2057	2.2F	
	2247					2303								
12		0206	2.6E		27		0225	2.1E		12	0007	0319	2.5E	
Tu	0541	0801	1.8F		W	0604	0815	1.4F		F	0653	0929	2.0F	
	1103	1418	2.3E			1121	1434	1.8E			1234	1544	2.3E	
	1738	2020	2.3F			1757	2029	1.7F			1917	2152	2.0F	
	2338					2343								
13		0255	2.6E		28		0300	2.0E		13	0056	0409	2.3E	
W	0631	0856	1.9F		Th	0644	0858	1.4F		Sa	0746	1027	2.0F	
	1159	1511	2.3E			1204	1513	1.8E			1328	1637	2.2E	
	1835	2116	2.2F			1841	2114	1.6F			2018	2249	1.8F	
14	0030	0343	2.5E		29	0023	0337	2.0E		14	0145	0500	2.1E	
Th	0724	0953	1.9F		F	0724	0945	1.4F		Su	0841	1119	1.9F	
	1255	1604	2.2E			1248	1552	1.7E			1423	1736	2.0E	
	1936	2215	2.0F			1930	2201	1.5F			2121	2347	1.5F	
15	0121	0436	2.3E		30	0104	0416	1.9E		15	0237	0557	1.9E	
F	0818	1053	1.9F		Sa	0806	1033	1.5F		M	0936	1216	1.8F	
	1352	1701	2.1E			1333	1637	1.6E			1522	1840	1.9E	
	2040	2315	1.8F			2023	2250	1.4F			2222			
					31	0146	0459	1.8E		31	0248	0605	1.6E	
					Su	0849	1118	1.5F		W	0942	1224	1.7F	
						1421	1733	1.6E			1537	1901	1.7E	
						2120	2337	1.3F			2249			

Time meridian 75° W. 0000 is midnight. 1200 is noon.

DELAWARE BAY ENTRANCE, 1983

F-Flood, Dir. 305° True E-Ebb, Dir. 140° True

JANUARY				FEBRUARY					
Day	Slack Water		Maximum Current		Day	Slack Water		Maximum Current	
	Time	Vel.	Time	Vel.		Time	Vel.	Time	Vel.
	h.m.	knots	h.m.	knots		h.m.	knots	h.m.	knots
1		0127	1.8E		16		0137	1.6E	
Sa	0442	0746	2.0F		Su	0451	0752	1.7F	
	1056	1403	2.0E			1056	1401	1.8E	
	1733	2020	1.7F			1731	2018	1.5F	
	2321					2315			
2		0222	1.8E		17		0215	1.6E	
Su	0539	0841	1.9F		M	0528	0833	1.7F	
	1151	1458	1.9E			1133	1442	1.8E	
	1829	2116	1.7F			1807	2101	1.5F	
						2355			
3		0320	1.7E		18		0258	1.6E	
M	0640	0940	1.8F		Tu	0610	0915	1.6F	
	1249	1557	1.9E			1213	1525	1.8E	
	1927	2214	1.6F			1846	2142	1.6F	
4		0423	1.7E		19		0343	1.6E	
Tu	0745	1039	1.7F		W	0656	1002	1.6F	
	1349	1656	1.8E			1257	1608	1.8E	
	2026	2315	1.6F			1930	2233	1.6F	
5		0527	1.6E		20		0434	1.6E	
W	0851	1143	1.6F		Th	0748	1053	1.5F	
	1451	1759	1.8E			1346	1658	1.7E	
	2126					2017	2321	1.6F	
6		0618	1.7F		21		0222	0527	1.6E
Th	0330	0635	1.7E		F	0845	1146	1.5F	
	0957	1245	1.6F			1439	1751	1.7E	
	1552	1900	1.7E			2109			
	2224								
7		0117	1.7F		22		0016	1.6F	
F	0432	0740	1.7E		Sa	0318	0624	1.6E	
	1059	1345	1.6F			0947	1243	1.5F	
	1652	1959	1.8E			1536	1846	1.7E	
	2319					2205			
8		0216	1.8F		23		0111	1.7F	
Sa	0529	0839	1.8E		Su	0418	0724	1.7E	
	1158	1444	1.6F			1050	1341	1.5F	
	1748	2059	1.8E			1636	1945	1.7E	
						2302			
9		0309	1.9F		24		0210	1.7F	
Su	0622	0934	1.9E		M	0518	0823	1.7E	
	1252	1537	1.6F			1153	1442	1.5F	
	1839	2146	1.8E			1736	2041	1.7E	
10		0359	1.9F		25		0305	1.8F	
M	0711	1022	1.9E		Tu	0617	0924	1.8E	
	1341	1626	1.6F			1254	1539	1.5F	
	1927	2231	1.7E			1836	2140	1.7E	
11		0444	1.9F		26		0058	0403	1.9F
Tu	0755	1105	1.9E		W	0714	1020	1.9E	
	1427	1707	1.6F			1352	1635	1.6F	
	2011	2314	1.7E			1934	2237	1.8E	
12		0523	1.9F		27		0154	0457	2.0F
W	0836	1144	1.9E		Th	0810	1116	2.0E	
	1508	1750	1.5F			1446	1730	1.7F	
	2051	2349	1.7E			2031	2332	1.8E	
13		0600	1.8F		28		0249	0551	2.0F
Th	0913	1217	1.8E		F	0903	1210	2.0E	
	1547	1826	1.5F			1539	1823	1.7F	
	2128					2126			
14		0639	1.8F		29		0026	1.9E	
F	0341	0639	1.8F		Sa	0343	0644	2.0F	
	0948	1251	1.8E			0955	1301	2.1E	
	1623	1904	1.5F			1630	1917	1.8F	
	2203					2219			
15		0715	1.7F		30		0120	1.9E	
Sa	0416	0715	1.7F		Su	0438	0737	2.0F	
	1022	1326	1.8E			1047	1353	2.1E	
	1657	1939	1.5F			1720	2008	1.8F	
	2238					2313			
					31		0213	1.9E	
					M	0532	0828	1.9F	
						1138	1442	2.0E	
						1811	2101	1.8F	

Time meridian 75° W. 0000 is midnight. 1200 is noon.

DELAWARE BAY ENTRANCE, 1983

F-Flood, Dir. 305° True E-Ebb, Dir. 140° True

MAY							JUNE								
Day	Slack Water			Maximum Current			Day	Slack Water			Maximum Current				
	Time	Current	Vel.	Time	Current	Vel.		Time	Current	Vel.	Time	Current	Vel.		
	h.m.	h.m.	knots	h.m.	h.m.	knots		h.m.	h.m.	knots	h.m.	h.m.	knots		
1 Su	0012 0651 1233 1846	0316 0932 1529 2148	1.8E 1.5F 1.5E 1.7F	16 M	0621 1206 1818	2.0E 1.6F 1.7E 1.8F	1 W	0104 0752 1342 1951	0415 1038 1637 2252	1.7E 1.4F 1.4E 1.5F	16 Th	0126 0815 1414 2032	0439 1105 1711 2327	1.9E 1.6F 1.5E 1.6F	
2 M	0055 0737 1321 1935	0403 1020 1618 2236	1.7E 1.4F 1.4E 1.6F	17 Tu	0035 0721 1309 1923	0348 1010 1611 2233	1.9E 1.5F 1.5E 1.7F	2 Th	0153 0842 1437 2050	0505 1132 1732 2347	1.7E 1.4F 1.4E 1.4F	17 F	0232 0918 1524 2146	0543 1209 1822	1.8E 1.7F 1.6E
3 Tu	0143 0828 1415 2030	0452 1113 1712 2330	1.7E 1.3F 1.4E 1.5F	18 W	0138 0827 1420 2039	0450 1115 1720 2341	1.8E 1.5F 1.5E 1.6F	3 F	0246 0933 1535 2151	0600 1225 1829	1.7E 1.5F 1.4E	18 Sa	0340 1019 1631 2255	0651 1314 1935	1.6F 1.8E 1.8F 1.7E
4 W	0235 0923 1514 2131	0547 1208 1809	1.6E 1.3F 1.3E	19 Th	0247 0937 1536 2158	0600 1225 1835	1.7E 1.5F 1.5E	4 Sa	0342 1025 1630 2251	0644 1253 1927	1.4F 1.7E 1.6F 1.5E	19 Su	0445 1117 1732 2359	0757 1416 2042	1.8E 1.9F 1.8E
5 Th	0332 1019 1615 2234	0643 1304 1911	1.4F 1.6E 1.4E	20 F	0400 1044 1649 2313	0052 0712 1335 1950	1.5F 1.7E 1.6F 1.6E	5 Su	0437 1114 1723 2347	0140 0747 1411 2020	1.4F 1.7E 1.7F 1.6E	20 M	0546 1212 1828	0245 0856 1511 2138	1.6F 1.9E 2.0F 1.9E
6 F	0430 1113 1712 2333	0741 1401 2010	1.4F 1.6E 1.4E	21 Sa	0509 1145 1754	0202 0821 1440 2101	1.6F 1.8E 1.8F 1.7E	6 M	0530 1200 1812	0233 0837 1459 2111	1.5F 1.7E 1.8F 1.7E	21 Tu	0057 0641 1302 1918	0340 0947 1604 2229	1.6F 1.9E 2.0F 2.0E
7 Sa	0526 1203 1805	0222 0834 1455 2104	1.5F 1.7E 1.6F 1.6E	22 Su	0019 0612 1241 1851	0308 0923 1537 2200	1.7F 1.9E 1.9F 1.9E	7 Tu	0039 0619 1244 1857	0323 0923 1546 2159	1.5F 1.8E 1.9F 1.8E	22 W	0150 0732 1348 2005	0432 1038 1647 2316	1.6F 1.8E 2.1F 2.0E
8 Su	0027 0617 1248 1852	0315 0922 1542 2153	1.5F 1.7E 1.7F 1.7E	23 M	0118 0708 1331 1943	0405 1016 1629 2251	1.7F 1.9E 2.0F 2.0E	8 W	0127 0706 1325 1940	0411 1010 1629 2245	1.6F 1.8E 2.0F 2.0E	23 Th	0238 0819 1431 2047	0519 1122 1733 2357	1.6F 1.8E 2.0F 2.0E
9 M	0115 0703 1329 1934	0402 1008 1625 2234	1.6F 1.8E 1.8F 1.8E	24 Tu	0211 0759 1417 2029	0456 1105 1716 2339	1.8F 1.9E 2.1F 2.1E	9 Th	0213 0750 1405 2022	0457 1053 1714 2329	1.6F 1.8E 2.0F 2.0E	24 F	0323 0902 1511 2125	0602 1200 1809	1.6F 1.7E 1.9F
10 Tu	0200 0745 1406 2013	0445 1048 1705 2314	1.6F 1.8E 1.9F 1.9E	25 W	0259 0845 1459 2111	0542 1148 1757	1.8F 1.9E 2.1F	10 F	0257 0835 1446 2104	0543 1136 1757	1.6F 1.8E 2.1F	25 Sa	0404 0942 1549 2201	0641 1238 1850	2.0E 1.5F 1.6E 1.9F
11 W	0241 0825 1441 2050	0528 1127 1744 2355	1.7F 1.9E 2.0F 2.0E	26 Th	0343 0927 1539 2150	0020 0625 1227 1838	2.1E 1.7F 1.8E 2.0F	11 Sa	0342 0920 1530 2149	0012 0629 1223 1842	2.1E 1.6F 1.8E 2.1F	26 Su	0442 1020 1625 2236	0107 0718 1314 1926	1.9E 1.5F 1.5E 1.8F
12 Th	0321 0903 1516 2128	0608 1205 1823	1.7F 1.9E 2.0F	27 F	0425 1006 1616 2227	0057 0703 1302 1914	2.0E 1.6F 1.7E 1.9F	12 Su	0429 1009 1617 2237	0059 0716 1310 1933	2.1E 1.6F 1.8E 2.0F	27 M	0519 1058 1702 2311	0142 0759 1351 2004	1.8E 1.4F 1.5E 1.7F
13 F	0400 0942 1553 2208	0034 0650 1246 1905	2.1E 1.7F 1.9E 2.0F	28 Sa	0504 1043 1652 2303	0133 0742 1338 1952	1.9E 1.5F 1.6E 1.8F	13 M	0519 1102 1710 2328	0146 0807 1402 2024	2.1E 1.6F 1.7E 1.9F	28 Tu	0556 1138 1741 2348	0218 0837 1432 2045	1.8E 1.4F 1.4E 1.6F
14 Sa	0443 1025 1635 2252	0734 1329 1950	2.1E 1.7F 1.8E 2.0F	29 Su	0543 1122 1729 2339	0208 0822 1416 2032	1.9E 1.5F 1.5E 1.7F	14 Tu	0613 1200 1810	0241 0900 1459 2120	2.0E 1.6F 1.6E 1.8F	29 W	0634 1221 1825	0300 0919 1515 2132	1.8E 1.4F 1.4E 1.6F
15 Su	0529 1112 1722 2340	0203 0821 1416 2037	2.1E 1.6F 1.8E 1.9F	30 M	0623 1203 1811	0247 0903 1457 2114	1.8E 1.4F 1.4E 1.6F	15 W	0025 0712 1305 1918	0337 1001 1602 2221	1.9E 1.6F 1.6E 1.7F	30 Th	0029 0716 1308 1915	0341 1006 1604 2217	1.8E 1.5F 1.4E 1.5F
				31 Tu	0019 0705 1250 1858	0328 0949 1546 2201	1.8E 1.4F 1.4E 1.5F								

Time meridian 75° W. 0000 is midnight. 1200 is noon.

DELAWARE BAY ENTRANCE, 1983

F-Flood, Dir. 305° True E-Ebb, Dir. 140° True

SEPTEMBER							OCTOBER								
Day	Slack Water			Maximum Current			Day	Slack Water			Maximum Current				
	Time	Vel.	Vel.	Time	Vel.	Time		Vel.	Time	Vel.	Time	Vel.			
	h.m.	h.m.	knots	h.m.	h.m.	knots		h.m.	h.m.	knots	h.m.	h.m.	knots		
1 Th	0326 0955 1622 2301	0641 1310 1929	1.3F 1.6E 1.7F 1.6E	16 F	0507 1130 1747	0209 1430 2059	1.3F 1.5E 1.7F 1.7E	1 Sa	0418 1046 1709 2352	0124 1353 2016	1.3F 1.5E 1.7F 1.7E	16 Su	0533 1152 1800	0229 1447 2110	1.4F 1.5E 1.6F 1.7E
2 F	0433 1059 1727	0743 1412 2033	1.3F 1.6E 1.8F 1.7E	17 Sa	0606 1224 1838	0304 0909 1521 2150	1.3F 1.5E 1.7F 1.8E	2 Su	0533 1158 1815	0234 1038 1502 2124	1.4F 1.6E 1.8F 1.8E	17 M	0626 1244 1848	0320 1536 2159	1.5F 1.6E 1.7F 1.8E
3 Sa	0009 0542 1205 1829	0249 0849 1515 2136	1.3F 1.6E 1.8F 1.8E	18 Su	0116 0659 1313 1924	0357 1000 1609 2235	1.4F 1.5E 1.8F 1.8E	3 M	0055 0642 1303 1915	0337 0944 1603 2222	1.5F 1.7E 1.9F 1.9E	18 Tu	0122 0713 1330 1931	0406 1014 1625 2238	1.6F 1.7E 1.7F 1.9E
4 Su	0111 0648 1308 1928	0351 0953 1614 2235	1.4F 1.6E 1.9F 1.9E	19 M	0201 0746 1359 2006	0444 1045 1654 2314	1.5F 1.6E 1.8F 1.9E	4 Tu	0151 0742 1402 2010	0438 1045 1700 2317	1.7F 1.8E 2.0F 2.1E	19 W	0202 0755 1412 2010	0447 1054 1704 2313	1.7F 1.7E 1.8F 1.9E
5 M	0208 0751 1407 2022	0451 1051 1710 2330	1.6F 1.7E 2.0F 2.1E	20 Tu	0241 0828 1440 2043	0523 1126 1733 2349	1.6F 1.6E 1.8F 1.9E	5 W	0241 0837 1456 2059	0530 1139 1751	1.9F 2.0E 2.0F	20 Th	0238 0833 1450 2045	0528 1130 1742 2349	1.8F 1.8E 1.8F 1.9E
6 Tu	0300 0848 1503 2114	0545 1147 1803	1.7F 1.8E 2.0F	21 W	0317 0905 1517 2117	0600 1202 1811	1.7F 1.7E 1.8F	6 Th	0328 0927 1546 2145	0004 0619 1228 1837	2.1E 2.0F 2.0E 2.0F	21 F	0311 0907 1526 2117	0603 1206 1817	1.8F 1.9E 1.8F
7 W	0349 0941 1557 2202	0637 1240 1855	2.1E 1.9F 2.0F	22 Th	0349 0939 1552 2148	0636 1235 1847	1.7F 1.7E 1.8F	7 F	0412 1014 1634 2229	0051 0704 1315 1923	2.1E 2.1F 2.0E 2.0F	22 Sa	0341 0941 1600 2149	0637 1242 1853	1.9E 1.9F 1.9E 1.8F
8 Th	0436 1033 1649 2250	0724 1331 1944	2.2E 1.9F 2.0F	23 F	0419 1012 1625 2219	0710 1310 1923	1.8F 1.8E 1.8F	8 Sa	0455 1100 1722 2312	0135 0749 1400 2009	2.1E 2.0F 2.0E 1.8F	23 Su	0411 1015 1636 2224	0714 1319 1932	1.9E 1.9F 1.9E 1.7F
9 F	0522 1123 1741 2336	0812 1421 2031	2.1E 2.0F 1.9E 1.9F	24 Sa	0448 1046 1701 2253	0747 1347 1958	2.0E 1.8F 1.8E 1.7F	9 Su	0538 1145 1810 2356	0215 0834 1443 2056	2.0E 2.0F 1.9E 1.7F	24 M	0444 1053 1716 2302	0755 1358 2013	1.9E 1.9F 1.7F
10 Sa	0608 1213 1833	0903 1512 2122	2.1E 2.0F 1.8F	25 Su	0519 1123 1739 2329	0824 1424 2041	1.9E 1.8F 1.8E 1.7F	10 M	0622 1232 1900	0301 0920 1532 2141	1.9E 1.9F 1.8E 1.5F	25 Tu	0522 1136 1801 2346	0836 1443 2100	1.9E 1.9F 1.6F
11 Su	0024 0656 1305 1928	0330 0952 1604 2213	2.0E 1.9F 1.8E 1.6F	26 M	0555 1205 1824	0240 0905 1510 2124	1.9E 1.8F 1.8E 1.6F	11 Tu	0042 0709 1322 1954	0347 1006 1623 2233	1.7E 1.8F 1.7E 1.4F	26 W	0607 1225 1855	0925 1534 2151	1.8E 1.8F 1.8E 1.4F
12 M	0114 0746 1359 2027	0421 1043 1659 2308	1.8E 1.8F 1.7E 1.5F	27 Tu	0637 1253 1916	0325 0951 1557 2216	1.8E 1.8F 1.7E 1.5F	12 W	0133 0800 1415 2051	0436 1058 1719 2331	1.6E 1.7F 1.6E 1.3F	27 Th	0038 0701 1322 1959	0348 1017 1629 2252	1.7E 1.7F 1.7E 1.3F
13 Tu	0207 0839 1456 2128	0512 1136 1758	1.7E 1.8F 1.6E	28 W	0100 0726 1347 2017	0414 1043 1656 2311	1.7E 1.8F 1.7E 1.3F	13 Th	0229 0856 1512 2152	0532 1156 1816	1.5E 1.6F 1.5E	28 F	0140 0806 1428 2111	0451 1122 1737	1.5E 1.6F 1.6E
14 W	0305 0935 1554 2230	0611 1235 1859	1.3F 1.6E 1.7F 1.6E	29 Th	0157 0825 1450 2127	0510 1143 1757	1.6E 1.7F 1.6E	14 F	0331 0956 1611 2251	0029 0633 1252 1919	1.2F 1.4E 1.5F 1.5E	29 Sa	0253 0921 1541 2226	0600 1231 1850	1.3F 1.5E 1.6F 1.6E
15 Th	0406 1033 1652 2330	0712 1331 2000	1.3F 1.5E 1.6E	30 F	0303 0932 1559 2242	0617 1246 1905	1.3F 1.5E 1.6E	15 Sa	0433 1056 1707 2347	0130 0735 1353 2018	1.3F 1.4E 1.6F 1.6E	30 Su	0412 1039 1654 2335	0111 0716 1341 2001	1.3F 1.5E 1.6F 1.7E
												31 M	0526 1152 1800	0220 1449 2110	1.5F 1.6E 1.7F 1.8E

Time meridian 75° W. 0000 is midnight. 1200 is noon.

CHESAPEAKE BAY ENTRANCE, VIRGINIA, 1963

65

F-Flood, Dir. 305° True E-Ebb, Dir. 125° True

MARCH								APRIL							
Day	Slack Water		Maximum Current		Day	Slack Water		Maximum Current		Day	Slack Water		Maximum Current		
	Time	Vel.	Time	Vel.		Time	Vel.	Time	Vel.		Time	Vel.	Time	Vel.	
	h.m.	knots	h.m.	knots		h.m.	knots	h.m.	knots		h.m.	knots	h.m.	knots	
1 Tu	0045 0742 1324 2003	2.0E 1.4F 1.8E 1.3F	0422 1024 1650 2243	2.0E 1.4F 1.8E 1.3F	16 W	0011 0721 1238 1929	0.35E 1.0F 1.4E 1.1F	0355 0954 1613 2205	1.6E 1.0F 1.4E 1.1F	1 F	0206 0858 1350 2102	0.53E 0.8F 1.5E 1.1F	0534 1118 1741 2346	1.5E 0.8F 1.5E 1.1F	
2 W	0135 0831 1401 2050	1.8E 1.2F 1.7E 1.2F	0510 1109 1733 2329	1.8E 1.2F 1.7E 1.2F	17 Th	0052 0800 1307 2006	0.43E 1.0F 1.4E 1.1F	0433 1027 1646 2247	1.5E 1.0F 1.4E 1.1F	2 Sa	0252 0948 1422 2151	0.62E 0.6F 1.3E 1.3E	0623 1159 1826 2346	1.3E 0.6F 1.3E 1.3E	
3 Th	0226 0922 1437 2138	1.6E 1.0F 1.5E	0601 1151 1819	1.6E 1.0F 1.5E	18 F	0137 0842 1338 2048	0.51E 0.9F 1.4E 1.1F	0514 1106 1722 2332	1.5E 0.9F 1.4E 1.1F	3 Su	0341 1045 1456 2246	0.03E 0.71E 1.24E 1.91E	0032 0714 1246 1915	0.9F 1.1E 0.4F 1.2E	
4 F	0317 1016 1513 2231	1.4E 0.7F 1.4E	0016 0650 1237 1905	1.1F 1.4E 0.7F 1.4E	19 Sa	0226 0931 1414 2138	0.60E 1.15E 1.80E 1.4E	0603 1151 1808	1.3E 0.8F 1.4E	4 M	0435 1149 1538 2348	0.81E 1.33E 2015	0.8F 1.0E 0.3F 1.1E	0126 0814 1337 2015	0.8F 1.0E 0.3F 1.1E
5 Sa	0413 1115 1550 2329	0.9F 1.2E 0.5F 1.2E	0111 0748 1327 1959	0.9F 1.2E 0.5F 1.2E	20 Su	0323 1027 1457 2235	0.65E 1.23E 1.85E	0023 0656 1238 1859	1.1F 1.2E 0.7F 1.4E	5 Tu	0537 1240 1440 2120	0.91E 0.9E 1.44E 1.0E	0225 0919 1440 2120	0.7F 0.9E 1.44E 1.0E	
6 Su	0514 1223 1632	0.8F 1.0E 0.4F 1.1E	0208 0852 1420 2100	0.8F 1.0E 0.4F 1.1E	21 M	0428 1133 1549 2341	0.80E 1.1E 1.33E 1.4E	0122 0803 1338 2003	1.1F 1.1E 0.5F 1.4E	6 W	0653 1358 1551 2226	0.33E 1.02E 1.55E 1.1E	0331 1026 1551 2226	0.6F 0.9E 1.55E 1.1E	
7 M	0632 1336 1726	0.7F 0.9E 0.3F 1.1E	0311 0958 1524 2203	0.7F 0.9E 0.3F 1.1E	22 Tu	0544 1247 1655	0.91E 1.1E 1.44E	0232 0918 1447 2120	1.0F 1.1E 0.5F 1.4E	7 Th	0745 1458 1905	0.43E 1.12E 1.65E 2.32E	0439 1122 1655 2323	0.6F 1.0E 0.3F 1.1E	
8 Tu	0733 1444 1833	0.4E 0.9E 0.3F 1.1E	0420 1105 1636 2308	0.6F 0.9E 0.3F 1.1E	23 W	0652 1359 1817	0.34E 1.03E 1.60E 2.23E	0343 1033 1603 2235	1.0F 1.1E 0.5F 1.5E	8 F	0837 1539 2011	0.53E 1.20E 1.75E	0536 1209 1750	0.7F 1.1E 0.5F	
9 W	0834 1538 1942	0.7F 1.0E 0.3F	0527 1202 1737	0.7F 1.0E 0.3F	24 Th	0814 1502 1940	0.45E 1.14E 1.71E 2.34E	0457 1140 1717 2343	1.1F 1.3E 0.6F 1.6E	9 Sa	0920 1614 2105	0.01E 0.62E 1.25E 1.83E	0018 0621 1254 1834	1.2E 0.8F 1.2E 0.6F	
10 Th	0925 1620 2041	1.2E 0.8F 1.1E 0.4F	0002 0621 1249 1825	1.2E 0.8F 1.1E 0.4F	25 F	0914 1555 2054	0.60E 1.23E 1.82E	0602 1238 1820	1.2F 1.5E 0.8F	10 Su	0957 1646 2152	1.32E 1.91E	0059 0.70E 1.32E 0.8F	1.4E 0.9F 1.3E 0.8F	
11 F	1008 1655 2131	1.3E 0.9F 1.2E 0.5F	0049 0704 1331 1907	1.3E 0.9F 1.2E 0.5F	26 Sa	1006 1642 2158	0.44E 0.70E 1.32E 1.91E	0044 0700 1327 1917	1.8E 1.3F 1.6E 1.0F	11 M	1030 1717 2235	0.14E 0.73E 1.40E 1.95E	0142 0739 1402 1950	1.5E 0.9F 1.4E 0.9F	
12 Sa	1044 1726 2215	1.4E 0.9F 1.2E 0.7F	0132 0739 1408 1945	1.4E 0.9F 1.2E 0.7F	27 Su	1052 1727 2254	0.14E 0.74E 1.41E 2.00E	0140 0749 1414 2007	1.9E 1.4F 1.7E 1.2F	12 Tu	1041 1749 2317	0.22E 0.81E 1.43E 2.02E	0220 0811 1435 2026	1.5E 1.0F 1.5E 1.1F	
13 Su	1116 1756 2254	1.5E 1.0F 1.3E 0.8F	0210 0814 1441 2021	1.5E 1.0F 1.3E 0.8F	28 M	1133 1809 2346	0.22E 0.83E 1.45E 2.05E	0229 0835 1457 2053	1.9E 1.4F 1.8E 1.3F	13 W	1129 1822 2359	0.25E 0.84E 1.50E 2.10E	0255 0846 1507 2104	1.6E 1.0F 1.5E 1.2F	
14 M	1144 1826 2333	1.5E 1.0F 1.4E 0.9F	0246 0849 1512 2055	1.5E 1.0F 1.4E 0.9F	29 Tu	1211 1851	0.31E 0.91E 1.53E 2.13E	0317 0918 1538 2136	1.9E 1.3F 1.8E 1.4F	14 Th	1159 1858	0.33E 0.92E 1.54E 2.14E	0336 0925 1540 2145	1.6E 1.0F 1.6E 1.3F	
15 Tu	1211 1856	1.6E 1.0F	0322 0918 1542 2128	1.6E 1.0F	30 W	1245 1934	0.40E 0.95E 1.61E 2.20E	0404 0959 1619 2220	1.8E 1.1F 1.7E 1.3F	15 F	1232 1939	0.41E 1.00E 1.61E 2.22E	0414 1001 1617 2228	1.6E 0.9F 1.6E 1.3F	
					31 Th	1217 1811 1318 2017	0.44E 1.03E 1.65E 2.30E	0449 1038 1659 2303	1.7E 1.0F 1.6E 1.2F						

Time meridian 75° W. 0000 is midnight. 1200 is noon.
* Current weak and variable.

CHESAPEAKE BAY ENTRANCE, VIRGINIA, 1983

F-Flood, Dir. 305° True E-Ebb, Dir. 125° True

MAY						JUNE									
Day	Slack Water			Maximum Current			Day	Slack Water			Maximum Current				
	Time	Time	Vel.	Time	Time	Vel.		Time	Time	Vel.	Time	Time	Vel.		
	h.m.	h.m.	knots	h.m.	h.m.	knots		h.m.	h.m.	knots	h.m.	h.m.	knots		
1 Su	0228 0923 1337 2117	0557 1125 1747	1.2E 0.5F 1.3E	16 M	0219 0907 1333 2104	0541 1118 1735	1.4E 0.7F 1.7E	1 W	0325 1036 1429 2226	0016 0704 1228 1856	0.9F 1.0E 0.4F 1.1E	16 Th	0400 1051 1537 2257	0045 0727 1308 1933	1.3F 1.4E 0.7F 1.5E
2 M	0311 1015 1413 2208	0000 0646 1211 1836	0.9F 1.1E 0.4F 1.2E	17 Tu	0316 1007 1429 2205	0000 0642 1214 1836	1.4F 1.3E 0.6F 1.6E	2 Th	0409 1129 1524 2322	0106 0756 1321 1953	0.8F 1.0E 0.4F 1.1E	17 F	0455 1152 1652	0147 0826 1415 2044	1.2F 1.4E 0.8F 1.5E
3 Tu	0359 1114 1457 2305	0049 0741 1258 1933	0.8F 1.0E 0.3F 1.1E	18 W	0417 1112 1535 2312	0101 0745 1319 1946	1.3F 1.3E 0.6F 1.5E	3 F	0456 1222 1629	0157 0849 1420 2054	0.7F 1.0E 0.4F 1.0E	18 Sa	0005 0551 1253 1810	0248 0927 1524 2151	1.0F 1.4E 0.8F 1.4E
4 W	0452 1217 1554	0144 0838 1402 2038	0.7F 0.9E 0.3F 1.0E	19 Th	0520 1219 1653	0203 0851 1430 2100	1.1F 1.3E 0.6F 1.4E	4 Sa	0020 0545 1311 1741	0252 0940 1520 2153	0.7F 1.0E 0.5F 1.1E	19 Su	0113 0644 1350 1925	0352 1025 1629 2258	0.9F 1.5E 0.9F 1.4E
5 Th	0007 0549 1317 1707	0242 0940 1505 2141	0.6F 0.9E 0.3F 1.0E	20 F	0022 0623 1322 1817	0312 0956 1543 2209	1.1F 1.3E 0.7F 1.4E	5 Su	0118 0634 1356 1852	0349 1031 1615 2251	0.7F 1.1E 0.6F 1.1E	20 M	0220 0735 1444 2033	0453 1120 1729 2358	0.8F 1.5E 1.0F 1.4E
6 F	0109 0646 1407 1824	0345 1035 1608 2242	0.6F 1.0E 0.4F 1.1E	21 Sa	0132 0721 1419 1936	0418 1055 1652 2317	1.0F 1.4E 0.8F 1.5E	6 M	0213 0720 1439 1957	0440 1114 1708 2342	0.7F 1.2E 0.8F 1.2E	21 Tu	0322 0821 1533 2132	0546 1209 1825	0.7F 1.5E 1.1F
7 Sa	0206 0738 1450 1933	0441 1124 1705 2336	0.7F 1.1E 0.5F 1.2E	22 Su	0238 0814 1510 2045	0520 1150 1753	1.0F 1.5E 1.0F	7 Tu	0305 0804 1520 2057	0529 1155 1759	0.7F 1.4E 1.0F	22 W	0418 0904 1619 2225	0051 0635 1254 1915	1.4E 0.7F 1.6E 1.1F
8 Su	0258 0822 1527 2033	0530 1206 1752	0.7F 1.2E 0.7F	23 M	0338 0900 1557 2144	0018 0613 1238 1844	1.5E 0.9F 1.6E 1.1F	8 W	0354 0847 1601 2152	0034 0615 1241 1848	1.3E 0.8F 1.5E 1.2F	23 Th	0508 0943 1702 2312	0142 0722 1339 1958	1.3E 0.6F 1.6E 1.1F
9 M	0345 0902 1603 2125	0021 0615 1244 1835	1.3E 0.8F 1.3E 0.9F	24 Tu	0432 0942 1640 2237	0109 0702 1323 1932	1.6E 0.9F 1.7E 1.2F	9 Th	0442 0929 1644 2244	0122 0700 1325 1936	1.4E 0.8F 1.6E 1.3F	24 F	0552 1019 1743 2353	0227 0800 1421 2039	1.3E 0.6F 1.5E 1.1F
10 Tu	0429 0938 1638 2213	0107 0657 1320 1919	1.4E 0.9F 1.4E 1.1F	25 W	0521 1019 1722 2325	0158 0745 1404 2016	1.5E 0.8F 1.7E 1.3F	10 F	0529 1012 1728 2336	0210 0747 1408 2023	1.5E 0.8F 1.8E 1.5F	25 Sa	0633 1054 1823	0310 0838 1500 2114	1.3E 0.5F 1.5E 1.1F
11 W	0511 1013 1714 2300	0151 0737 1359 2000	1.5E 0.9F 1.6E 1.2F	26 Th	0607 1053 1803	0244 0826 1445 2056	1.5E 0.8F 1.6E 1.3F	11 Sa	0617 1057 1815	0256 0835 1451 2112	1.5E 0.9F 1.8E 1.6F	26 Su	0031 0712 1128 1902	0349 0916 1538 2152	1.2E 0.5F 1.5E 1.1F
12 Th	0553 1048 1752 2347	0232 0818 1433 2041	1.5E 0.9F 1.6E 1.4F	27 F	0008 0650 1125 1843	0328 0902 1523 2135	1.4E 0.7F 1.6E 1.2F	12 Su	0027 0706 1144 1904	0347 0923 1540 2201	1.6E 0.9F 1.9E 1.6F	27 M	0106 0750 1203 1941	0427 0952 1615 2228	1.2E 0.5F 1.4E 1.0F
13 F	0637 1124 1833	0313 0855 1514 2126	1.6E 0.9F 1.7E 1.5F	28 Sa	0048 0732 1156 1923	0409 0940 1600 2211	1.3E 0.6F 1.5E 1.1F	13 M	0119 0758 1234 1957	0437 1013 1631 2254	1.5E 0.8F 1.8E 1.6F	28 Tu	0140 0829 1241 2022	0507 1031 1656 2306	1.1E 0.5F 1.3E 1.0F
14 Sa	0035 0722 1203 1919	0401 0942 1555 2212	1.5E 0.9F 1.7E 1.5F	29 Su	0127 0814 1228 2004	0449 1018 1637 2251	1.2E 0.5F 1.4E 1.1F	14 Tu	0211 0852 1329 2053	0531 1106 1729 2347	1.5E 0.8F 1.8E 1.5F	29 W	0214 0909 1321 2105	0544 1112 1735 2346	1.1E 0.5F 1.3E 0.9F
15 Su	0125 0812 1245 2009	0450 1025 1644 2303	1.5E 0.8F 1.7E 1.5F	30 M	0205 0858 1303 2048	0532 1056 1718 2331	1.1E 0.5F 1.3E 1.0F	15 W	0305 0950 1429 2153	0629 1203 1829	1.5E 0.8F 1.7E	30 Th	0249 0952 1406 2151	0626 1157 1820	1.1E 0.5F 1.2E
				31 Tu	0243 0945 1342 2135	0616 1141 1802	1.1E 0.4F 1.2E								

Time meridian 75° W. 0000 is midnight. 1200 is noon.
* Current weak and variable.

SAVANNAH RIVER ENTRANCE (between jetties), GEORGIA, 1983

F-Flood, Dir. 260° True E-Ebb, Dir. 080° True

JANUARY

FEBRUARY

Day	Slack Water Current			Day	Slack Water Current			Day	Slack Water Current			Day	Slack Water Current			
	Time	Time	Vel.		Time	Time	Vel.		Time	Time	Vel.		Time	Time	Vel.	
	h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots	
1		0121	2.9E	16		0132	2.2E	1		0248	3.0E	16		0230	2.4E	
Sa	0434	0711	2.4F	Su	0448	0711	1.6F	Tu	0608	0837	2.1F	W	0546	0811	1.6F	
	1021	1355	3.3E		1009	1359	2.5E		1147	1517	3.1E		1052	1450	2.5E	
	1723	1943	2.0F		1732	1939	1.3F		1842	2106	1.9F		1813	2036	1.6F	
	2246				2225								2316			
2		0214	2.9E	17		0214	2.2E	2		0017	0342	2.8E	17		0313	2.4E
Su	0529	0803	2.3F	M	0528	0752	1.6F	W	0703	0926	1.8F	Th	0630	0854	1.6F	
	1114	1447	3.2E		1041	1438	2.5E		1235	1608	2.9E		1129	1531	2.5E	
	1816	2037	1.9F		1810	2020	1.4F		1933	2154	1.8F		1852	2118	1.7F	
	2342				2301								2358			
3		0310	2.8E	18		0256	2.1E	3		0110	0436	2.6E	18		0357	2.4E
M	0625	0857	2.1F	Tu	0610	0837	1.5F	Th	0800	1017	1.6F	F	0717	0941	1.5F	
	1206	1541	3.1E		1115	1519	2.4E		1323	1659	2.6E		1210	1616	2.4E	
	1909	2131	1.8F		1848	2105	1.4F		2025	2245	1.6F		1936	2205	1.7F	
					2341											
4		0403	2.7E	19		0341	2.1E	4		0204	0529	2.5E	19		0446	2.3E
Tu	0724	0949	1.9F	W	0656	0919	1.5F	F	0859	1108	1.3F	Sa	0810	1030	1.5F	
	1300	1634	2.9E		1153	1602	2.4E		1414	1752	2.4E		1256	1705	2.3E	
	2004	2223	1.7F		1929	2148	1.4F		2119	2338	1.4F		2025	2256	1.7F	
5		0502	2.6E	20		0427	2.1E	5		0300	0628	2.3E	20		0139	0541
W	0826	1045	1.6F	Th	0745	1006	1.4F	Sa	1001	1202	1.0F	Su	0908	1124	1.4F	
	1355	1730	2.7E		1235	1648	2.3E		1507	1846	2.2E		1350	1801	2.2E	
	2059	2321	1.6F		2013	2237	1.5F		2214				2120	2351	1.7F	
6		0602	2.5E	21		0518	2.1E	6		0029	1.3F	21		0240	0642	
Th	0929	1141	1.4F	F	0838	1057	1.4F	Su	0358	0725	2.2E	M	1011	1223	1.3F	
	1452	1826	2.5E		1323	1738	2.3E		1104	1257	0.9F		1452	1902	2.2E	
	2155				2101	2327	1.5F		1604	1943	2.1E		2220			
									2309							
7		0615	1.5F	22		0208	2.2E	7		0125	1.2F	22		0050	1.7F	
F	0339	0659	2.4E	Sa	0936	1152	1.3F	M	0455	0823	2.2E	Tu	0348	0744	2.4E	
	1032	1240	1.2F		1416	1833	2.2E		1204	1356	0.8F		1116	1324	1.3F	
	1549	1922	2.4E		2153				1703	2038	2.0E		1603	2004	2.3E	
	2250												2322			
8		0111	1.4F	23		0022	1.6F	8		0003	0219	1.2F	23		0152	1.8F
Sa	0438	0800	2.3E	Su	0309	0709	2.3E	Tu	0549	0916	2.2E	W	0500	0847	2.6E	
	1134	1337	1.0F		1037	1249	1.3F		1259	1452	0.8F		1218	1429	1.4F	
	1647	2018	2.3E		1517	1928	2.3E		1800	2129	2.0E		1719	2105	2.5E	
	2343				2248											
9		0204	1.3F	24		0117	1.7F	9		0054	0311	1.2F	24		0024	0255
Su	0534	0857	2.3E	M	0415	0807	2.4E	W	0640	1009	2.3E	Th	0609	0946	2.8E	
	1233	1435	0.9F		1139	1349	1.3F		1348	1546	0.8F		1317	1530	1.5F	
	1742	2111	2.2E		1624	2026	2.4E		1852	2219	2.0E		1831	2206	2.7E	
					2344											
10		0258	1.3F	25		0216	1.8F	10		0141	0359	1.3F	25		0123	0356
M	0625	0950	2.4E	Tu	0521	0908	2.6E	Th	0725	1054	2.3E	F	0712	1044	3.0E	
	1326	1527	0.9F		1239	1449	1.4F		1432	1631	0.9F		1411	1628	1.7F	
	1833	2200	2.2E		1734	2126	2.5E		1939	2306	2.1E		1935	2302	2.9E	
11		0344	1.4F	26		0041	3.1A	11		0225	0444	1.4F	26		0220	0453
Tu	0711	1036	2.4E	W	0626	1006	2.8E	F	0805	1137	2.4E	Sa	0809	1136	3.2E	
	1414	1614	0.9F		1336	1549	1.6F		1512	1713	1.1F		1502	1725	1.9F	
	1920	2247	2.2E		1842	2222	2.7E		2020	2349	2.2E		2032	2357	3.0E	
12		0428	1.4F	27		0138	2.1F	12		0307	0526	1.5F	27		0314	0545
W	0753	1119	2.4E	Th	0726	1059	3.0E	Sa	0842	1216	2.5E	Su	0901	1227	3.2E	
	1458	1700	1.0F		1430	1646	1.7F		1549	1755	1.2F		1551	1816	2.0F	
	2003	2330	2.2E		1945	2318	2.8E		2057				2125			
13		0510	1.5F	28		0233	2.3F	13		0030	2.2E	28		0048	3.1E	
Th	0831	1200	2.5E	F	0823	1154	3.2E	Su	0347	0608	1.5F	M	0406	0637	2.2F	
	1539	1739	1.1F		1522	1742	1.9F		0915	1255	2.5E		0951	1316	3.3E	
	2041				2044				1625	1833	1.3F		1639	1904	2.1F	
									2130				2215			
14		0011	2.2E	29		0013	3.0E	14		0108	2.3E					
F	0328	0551	1.5F	Sa	0327	0601	2.3F	M	0426	0649	1.6F					
	0906	1241	2.5E		0917	1245	3.3E		0946	1333	2.6E					
	1617	1819	1.1F		1613	1835	2.0F		1701	1912	1.5F					
	2117				2139				2204							
15		0051	2.2E	30		0105	3.0E	15		0148	2.3E					
Sa	0408	0630	1.6F	Su	0420	0654	2.3F	Tu	0505	0728	1.6F					
	0938	1320	2.5E		1008	1336	3.3E		1018	1411	2.6E					
	1655	1858	1.2F		1703	1926	2.0F		1736	1955	1.6F					
	2151				2233				2238							
				31		0157	3.0E									
				M	0514	0746	2.3F									
					1058	1426	3.3E									
					1752	2017	2.0F									
					2325											

Time meridian 75° W. 0000 is midnight. 1200 is noon.

MOBILE BAY ENTRANCE, ALABAMA, 1983

F-Flood, Dir. 025° True E-Ebb, Dir. 190° True

JANUARY						FEBRUARY										
Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current			
	h.m.	h.m.	Vel.	knots		h.m.	h.m.	Vel.	knots		h.m.	h.m.	Vel.	knots		
1			0552	3.1E	16	0028	0616	2.1E								
Sa	1220		1845	2.9F	Su	1230	1901	1.9F	1	0143	0707	1.4E	16	0151	0720	0.9E
									Tu	1403	2031	1.0F	W	1402	2019	0.6F
2	0951	0643	2.8E		17	0106	0657	1.9E	2	0221	0700	0.8E	17	0246	0733	0.4E
Su	1314	1933	2.5F		M	1308	1930	1.7F	W	1401	2018	0.3F	Th		2006	*
3	0142	0724	2.3E		18	0141	0732	1.6E	3		0554	*	18		0308	*
M	1401	2017	1.9F		Tu	1342	1950	1.4F	Th	1734	2314	0.4E	F		0848	*
															2126	0.4E
4	0225	0759	1.7E		19	0211	0755	1.3E	4	0545	1232	0.7F	19	0258	0939	0.7F
Tu	1432	2046	1.3F		W	1409	2000	1.0F	F	1738	2329	1.0E	Sa	1538	2223	1.0E
5	0252	0808	1.0E		20	0233	0816	0.8E	5	0547	1241	1.2F	20	0406	1028	1.3F
W	1417	1945	0.6F		Th	1417	1913	0.5F	Sa	1816			Su	1641	2312	1.6E
6	0213	0654	0.5E		21	0150	0642	0.3E	6		0012	1.4E	21	0505	1128	1.8F
Th	1157	1621	0.4F		F		1624	*	Su	0621	1310	1.5F	M	1745		
	2109									1901						
7		0251	0.4E		22		0109	0.4E	7		0055	1.7E	22		0012	2.1E
F	0840	1453	0.8F		Sa	0602	1240	0.6F	M	0703	1348	1.7F	Tu	0606	1228	2.1F
	1949					1821				1949				1850		
8		0125	1.0E		23		0031	1.0E	8		0136	1.9E	23		0104	2.4E
Sa	0744	1437	1.2F		Su	0601	1236	1.2F	Tu	0748	1442	1.8F	W	0709	1340	2.4F
	1959					1838				2039				1957		
9		0138	1.5E		24		0057	1.6E	9		0227	2.0E	24		0201	2.6E
Su	0756	1450	1.6F		M	0640	1311	1.8F	W	0837	1531	1.9F	Th	0815	1446	2.5F
	2028					1920				2129				2102		
10		0215	1.9E		25		0135	2.2E	10		0313	2.1E	25		0257	2.6E
M	0825	1519	1.8F		Tu	0730	1359	2.3F	Th	0927	1623	1.9F	F	0921	1556	2.4F
	2103					2012				2218				2207		
11		0244	2.1E		26		0221	2.6E	11		0358	2.1E	26		0355	2.4E
Tu	0900	1548	2.0F		W	0826	1459	2.6F	F	1017	1715	1.8F	Sa	1028	1710	2.2F
	2143					2109				2304				2309		
12		0328	2.2E		27		0313	2.9E	12		0439	2.0E	27		0448	2.1E
W	0940	1631	2.1F		Th	0926	1600	2.8F	Sa	1104	1757	1.8F	Su	1137	1813	1.8F
	2224					2207				2348						
13		0408	2.3E		28		0405	3.0E	13		0522	1.9E	28		0011	0530
Th	1023	1707	2.1F		F	1027	1702	2.9F	Su	1149	1839	1.6F	M	1252	1935	1.5E
	2306					2305										1.2F
14		0451	2.3E		29		0500	2.9E	14	0029	0557	1.6E				
F	1106	1749	2.1F		Sa	1128	1759	2.7F	M	1231	1915	1.4F				
	2348															
15		0533	2.2E		30	0002	0549	2.5E	15	0109	0640	1.3E				
Sa	1149	1826	2.0F		Su	1226	1900	2.3F	Tu	1314	1938	1.1F				
					31	0055	0630	2.0E								
					M	1320	1945	1.7F								

Time meridian 90° W. 0000 is midnight. 1200 is noon.

If three consecutive entries are marked (F) the middle one is not a true maximum but an intermediate value to show the current pattern.

* Current weak and variable.

MOBILE BAY ENTRANCE, ALABAMA, 1983

119

F-Flood, Dir. 025° True E-Ebb, Dir. 190° True

MARCH								APRIL							
Day	Slack Water Current			Day	Slack Water Current			Day	Slack Water Current			Day	Slack Water Current		
	Time	Time	Vel.		Time	Time	Vel.		Time	Time	Vel.		Time	Time	Vel.
	h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots
1	0116	0613	0.9E	16	0223	0700	0.4E	1	0001	0720	1.3F	16		0621	1.7F
Tu	1449	2112	0.7F	W	1747	2340	0.4F	F	1300	1851	1.5E	Sa	1219	1831	2.0E
2	0244	0600	0.3E	17	0904	1636	0.5E	2	0111	0804	1.5F	17	0048	0715	2.1F
W		1048	*	Th	2233			Sa	1356	1954	1.7E	Su	1320	1936	2.2E
	2045		0.3E												
3		0907	0.4F	18		0612	0.7F	3	0211	0839	1.6F	18	0154	0813	2.3F
Th	1331	1917	0.7E	F	1209	1839	0.9E	Su	1454	2057	1.8E	M	1425	2043	2.4E
4	0151	0922	0.9F	19	0049	0730	1.2F	4	0309	0933	1.7F	19	0259	0914	2.4F
F	1453	2053	1.1E	Sa	1332	2000	1.4E	M	1556	2206	1.8E	Tu	1533	2147	2.4E
5	0314	1006	1.2F	20	0211	0839	1.6F	5	0408	1024	1.6F	20	0404	1017	2.3F
Sa	1558	2202	1.4E	Su	1444	2111	1.8E	Tu	1702	2306	1.7E	W	1643	2253	2.2E
6	0413	1054	1.4F	21	0321	0940	2.0F	6	0508	1128	1.5F	21	0507	1123	2.0F
Su	1659	2305	1.6E	M	1556	2224	2.1E	W	1813			Th	1753	2353	1.9E
7	0509	1140	1.5F	22	0429	1044	2.2F	7		0013	1.6E	22	0608	1225	1.6F
M	1801			Tu	1710	2329	2.3E	Th	0609	1238	1.3F	F	1904		
									1923						
8		0001	1.7E	23	0537	1154	2.2F	8		0110	1.5E	23		0044	1.5E
Tu	0606	1243	1.6F	W	1824			F	0709	1406	1.2F	Sa	0706	1354	1.0F
	1905								2031				2020		
9		0059	1.8E	24		0035	2.3E	9		0204	1.3E	24		0125	0.9E
W	0704	1352	1.6F	Th	0646	1313	2.2F	Sa	0810	1542	1.0F	Su	0802	1624	0.5F
	2009				1938				2138				2205		
10		0153	1.8E	25		0135	2.2E	10		0254	1.1E	25		0112	0.3E
Th	0803	1505	1.5F	F	0755	1433	1.9F	Su	0918	1719	0.7F	M		0743	*
	2109				2050				2256				1801	1348	0.3E
11		0243	1.8E	26		0232	1.9E	11		0348	0.7E	26		0536	0.4F
F	0902	1614	1.5F	Sa	0907	1603	1.6F	M	1139	1948	0.5F	Tu	0938	1502	0.9E
	2205				2202								2055		
12		0339	1.7E	27		0327	1.5E	12	0101	0437	0.3E	27		0511	1.0F
Sa	1000	1717	1.4F	Su	1030	1745	1.1F	Tu		0905	*	W	1025	1600	1.4E
	2258				2322				1749	1329	0.3E		2210		
										2312	0.4F				
13		0422	1.5E	28		0415	0.9E	13	0833	1512	0.7E	28		0531	1.4F
Su	1057	1812	1.2F	M	1315	1948	0.7F	W	2043			Th	1108	1648	1.8E
	2350												2305		
14		0457	1.2E	29	0123	0436	0.3E	14		0349	0.8F	29		0606	1.7F
M	1201	1857	1.0F	Tu		0811	*	Th	1016	1622	1.2E	F	1152	1737	2.0E
						1407	0.4E		2225				2356		
					1840	2324	0.4F								
15	0050	0559	0.8E	30		0236	0.3F	15		0520	1.3F	30		0641	1.9F
Tu	1341	2025	0.7F	W		0611	0.4F	F	1119	1724	1.6E	Sa	1237	1826	2.1E
						1037	0.8E		2340						
						2214									
				31		0637	0.9F								
				Th	1200	1736	1.2E								

Time meridian 90° W. 0000 is midnight. 1200 is noon.

If three consecutive entries are marked (F) the middle one is not a true maximum but an intermediate value to show the current pattern.

* Current weak and variable.

MOBILE BAY ENTRANCE, ALABAMA, 1983

F-Flood, Dir. 025° True E-Ebb, Dir. 190° True

MAY						JUNE											
Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current				
	h.m.	h.m.	Vel.	knots		h.m.	h.m.	Vel.	knots		h.m.	h.m.	Vel.	knots			
1 Su	0045 1324	0721 1921	2.0F 2.1E		16 M	0047 1318	0712 1927	2.7F 2.7E		1 W	0203 1441	0819 2043	1.8F 1.9E	16 Th	0233 1459	0846 2048	2.1F 1.8E
2 M	0136 1415	0758 2016	1.9F 2.0E		17 Tu	0147 1417	0803 2027	2.7F 2.6E		2 Th	0246 1526	0848 2126	1.6F 1.6E	17 F	0309 1532	0915 2106	1.4F 1.2E
3 Tu	0228 1511	0844 2117	1.8F 1.9E		18 W	0245 1516	0900 2121	2.4F 2.3E		3 F	0325 1605	0903 2207	1.3F 1.2E	18 Sa	0310 1514	0842 2027	0.8F 0.6E
4 W	0322 1610	0930 2217	1.6F 1.7E		19 Th	0340 1613	0949 2212	2.0F 1.9E		4 Sa	0353 1634	0910 2236	0.9F 0.8E	19 Su	0125 1028 2144	0541 1554	0.5F 0.4E
5 Th	0414 1711	1016 2306	1.4F 1.5E		20 F	0426 1704	1021 2248	1.5F 1.3E		5 Su	0400 1542	0812 2212	0.5F 0.3E	20 M	0836 2025	0353 1408	0.8F 1.0E
6 F	0503 1813	1051	1.1F		21 Sa	0452 1739	1025 2249	0.8F 0.7E		6 M	0243 1030 1958	0645 1441	0.3F 0.4E	21 Tu	0840 2036	0326 1421	1.3F 1.6E
7 Sa	0547 1920	0003 1109	1.2E 0.8F		22 Su	0405	0748 2032	0.3F *		7 Tu	0847 1952	0413 1423	0.5F 0.9E	22 W	0906 2105	0336 1450	1.7F 2.0E
8 Su	0623 2100	0052 1039	0.8E 0.4F		23 M	0928 2050	0527 1435	0.5F 0.7E		8 W	0843 2027	0253 1438	1.0F 1.5E	23 Th	0940 2140	0356 1527	2.0F 2.3E
9 M		0112 0828 1409 2142	0.4E * * *		24 Tu	0925 2110	0429 1456	1.0F 1.3E		9 Th	0911 2112	0313 1518	1.6F 2.0E	24 F	1018 2218	0428 1602	2.2F 2.4E
10 Tu		0102 0513 1429	* * 0.7E		25 W	0952 2145	0430 1533	1.4F 1.8E		10 F	0951 2202	0351 1556	2.1F 2.5E	25 Sa	1057 2259	0500 1643	2.3F 2.4E
11 W		0314 1518	0.7F 1.2E		26 Th	1026 2223	0445 1608	1.8F 2.1E		11 Sa	1039 2257	0434 1639	2.6F 2.8E	26 Su	1139 2342	0542 1724	2.3F 2.4E
12 Th		0351 1553	1.3F 1.7E		27 F	1103 2303	0514 1651	2.1F 2.3E		12 Su	1131 2353	0529 1733	2.8F 3.0E	27 M	1221	0620 1808	2.2F 2.3E
13 F		0438 1643	1.8F 2.1E		28 Sa	1142 2346	0545 1732	2.2F 2.4E		13 M	1225	0618 1827	3.0F 3.0E	28 Tu	0025 1302	0655 1853	2.1F 2.2E
14 Sa		0526 1733	2.3F 2.5E		29 Su	1224	0621 1815	2.2F 2.3E		14 Tu	0050 1320	0711 1920	2.9F 2.8E	29 W	0106 1342	0730 1937	1.9F 2.0E
15 Su		0615 1827	2.6F 2.7E		30 M	0030 1309	0700 1903	2.1F 2.2E		15 W	0145 1412	0800 2009	2.6F 2.4E	30 Th	0144 1419	0748 2012	1.7F 1.7E
					31 Tu	0117 1355	0735 1954	2.0F 2.1E									

Time meridian 90° W. 0000 is midnight. 1200 is noon.
 If three consecutive entries are marked (F) the middle one is not a true maximum but an intermediate value to show the current pattern.
 * Current weak and variable.

MOBILE BAY ENTRANCE, ALABAMA, 1983

121

F-Flood, Dir. 025° True E-Ebb, Dir. 190° True

JULY									AUGUST											
Day	Slack Water			Maximum Current			Day	Slack Water			Maximum Current			Day	Slack Water			Maximum Current		
	Time	h.m.	Vel.	Time	h.m.	Vel.		Time	h.m.	Vel.	Time	h.m.	Vel.		Time	h.m.	Vel.	Time	h.m.	Vel.
1	0217	0808	1.4F	16	0215	0748	0.6F	1	0333	*	16	0532	1133	1.5E						
F	1449	2038	1.3E	Sa	1408	1845	0.4E	M	1713	2355	0.5F	Tu	1747							
					2319															
2	0241	0815	1.0F	17	0334	0.4F		2	0547	1200	0.9E	17	0626	0036	1.6F					
Sa	1504	2048	0.8E	Su	0807	1352	0.4E	Tu	1731	2353	1.1F	W	1836	1224	1.8E					
					1937															
3	0240	0731	0.6F	18	0157	0.8F		3	0611	1229	1.5E	18	0721	0120	1.8F					
Su	1354	1939	0.3E	M	0703	1254	1.0E	W	1813			Th	1926	1310	2.0E					
					1905															
4	0100	0536	0.4F	19	0206	1.3F		4	0655	0042	1.6F	19	0816	0214	1.8F					
M	0937	1409	0.4E	Tu	0725	1315	1.6E	Th	1905	1312	2.0E	F	2018	1359	2.0E					
	1932				1929															
5	0750	0253	0.6F	20	0222	1.7F		5	0748	0131	2.1F	20	0910	0314	1.8F					
Tu	1905	1342	1.0E	W	0801	1350	2.0E	F	2002	1358	2.4E	Sa	2111	1451	2.0E					
					2004															
6	0745	0147	1.1F	21	0251	1.9F		6	0846	0232	2.5F	21	1003	0411	1.8F					
W	1934	1349	1.6E	Th	0842	1427	2.2E	Sa	2102	1447	2.7E	Su	2203	1539	2.0E					
					2045															
7	0815	0208	1.7F	22	0331	2.1F		7	0945	0336	2.7F	22	1053	0506	1.8F					
Th	2017	1418	2.1E	F	0926	1508	2.3E	Su	2204	1540	2.9E	M	2252	1622	1.9E					
					2128															
8	0857	0251	2.2F	23	0417	2.1F		8	1045	0438	2.7F	23	1139	0554	1.6F					
F	2108	1501	2.6E	Sa	1011	1554	2.3E	M	2307	1638	2.8E	Tu	2340	1711	1.7E					
					2212															
9	0948	034F	2.6F	24	0458	2.1F		9	1143	0542	2.6F	24	1223	0637	1.5F					
Sa	2204	1550	2.9E	Su	1055	1635	2.3E	Tu		1727	2.5E	W		1748	1.5E					
					2257															
10	1041	0437	2.9F	25	0546	2.1F		10	0008	0636	2.2F	25	0026	0712	1.2F					
Su	2302	1642	3.1E	M	1139	1716	2.2E	W	1239	1815	2.0E	Th	1307	1829	1.1E					
					2340															
11	1137	0533	3.0F	26	0623	2.0F		11	0109	0739	1.6F	26	0115	0800	0.9F					
M	2359	1732	3.0E	Tu	1221	1759	2.0E	Th	1333	1845	1.3E	F	1358	1912	0.7E					
12	1231	0628	2.8F	27	0022	0658	1.8F	12	0210	0842	1.0F	27	0224	0912	0.5F					
Tu		1826	2.7E	W	1300	1840	1.8E	F	1425	1857	0.6E	Sa	1525	1933	0.3E					
13	0055	0719	2.5F	28	0059	0727	1.5F	13	0931	*	28	1838	*							
W	1323	1909	2.3E	Th	1336	1909	1.5E	Sa	1703	*	Su									
									2348	0.3F										
14	0145	0800	2.0F	29	0133	0748	1.2F	14	0334	0930	0.5E	29	0824	0.5E						
Th	1408	1939	1.7E	F	1408	1947	1.1E	Su	1613	2321	0.8F	M	1406	2040	0.7F					
15	0222	0834	1.3F	30	0201	0749	0.8F	15	0437	1038	1.1E	30	0251	0933	1.0E					
F	1440	1951	1.0E	Sa	1433	1951	0.7E	M	1659	2345	1.3F	Tu	1525	2143	1.2F					
				31	0208	0642	0.4F					31	0401	1036	1.5E					
				Su	1813		*					W	1629	2240	1.7F					

Time meridian 90° W. 0000 is midnight. 1200 is noon.
 if three consecutive entries are marked (F) the middle one is not a true maximum but an intermediate
 value to show the current pattern.
 * Current weak and variable.

GALVESTON BAY ENTRANCE (between jetties), TEXAS, 1983

125

F-Flood, Dir. 300° True E-Ebb, Dir. 100° True

MARCH							APRIL									
Day	Slack Water			Maximum Current			Day	Slack Water			Maximum Current					
	Time	Time	Vel.	Time	Time	Vel.		Time	Time	Vel.	Time	Time	Vel.			
	h.m.	h.m.	knots	h.m.	h.m.	knots		h.m.	h.m.	knots	h.m.	h.m.	knots			
1 Tu	0151	0445	1.0F	16 W	0120	0440	1.0F	1 F	0330	0646	1.7F	16 Sa	0244	0639	2.2F	
	0657	1109	2.0E		0701	1052	1.5E		1250	2341	2.1E		1350	2237	2.7E	
	1517	1737	1.1F		1508	1715	0.6F									
	2021	2338	1.1E		1859	2243	1.2E									
2 W	0300	0548	1.1F	17 Th	0205	0538	1.2F	2 Sa	0432	0756	1.6F	17 Su	0346	0746	2.2F	
	0824	1203	1.2E		0819	1146	0.9E		1508				1524	2322	2.8E	
	1610	1810	0.6F			1736	*									
	2000					2250	1.5E									
3 Th		0013	1.4E	18 F	0259	0639	1.3F	3 Su		0017	2.0E	18 M	0459	0900	2.3F	
	0414	0657	1.1F		1025	1303	0.4E		0542	0912	1.6F		1615			
	1039	1321	0.5E			1538	*		1604							
		1844	*			2313	1.8E									
4 F		0053	1.6E	19 Sa	0406	0756	1.5F	4 M		0142	1.9E	19 Tu		0033	2.7E	
	0529	0815	1.1F		1456	2348	2.1E		0654	1107	1.7F		0618	1015	2.4F	
	1423	1737	0.3E						1645				1654			
		1914	*													
5 Sa		0147	1.7E	20 Su	0524	0912	1.7F	5 Tu		0313	1.8E	20 W		0239	2.5E	
	0641	0956	1.3F		1634				0802	1218	1.8F		0733	1120	2.4F	
	1635	1910	0.5E						1719	2009	0.8E		1720	2025	0.8E	
		1957	0.4E							2157	0.7E			2142	0.8E	
6 Su		0256	1.8E	21 M		0058	2.3E	6 W		0433	1.9E	21 Th		0415	2.5E	
	0748	1220	1.6F		0646	1035	2.0F		0902	1251	1.8F		0841	1215	2.4F	
	1726	1959	0.6E		1725				1745	2033	0.8E		1729	2021	0.8E	
		2111	0.6E							2308	0.4E			2307	0.3E	
7 M		0415	2.0E	22 Tu		0301	2.4E	7 Th		0542	2.1E	22 F		0530	2.4E	
	0848	1309	1.8F		0800	1156	2.4F		0954	1316	1.8F		0941	1252	2.1F	
	1807	2035	0.6E		1809				1803	2047	0.7E		1727	2015	0.9E	
		2226	0.5E										2306			
8 Tu		0521	2.2E	23 W		0433	2.7E	8 F		0000	*	23 Sa		0016	0.3F	
	0942	1346	2.0F		0906	1251	2.6F			0633	2.2E		0129	0640	2.3E	
	1843	2104	0.6E		1846	2119	0.6E			1041	1339		1.7F	1036	1327	1.8F
		2323	0.3E			2305	0.5E			1812	2052		0.7E	1719	2004	1.1E
9 W		0615	2.4E	24 Th		0542	3.0E	9 Sa		0054	0.3F	24 Su		0116	0.9F	
	1031	1415	2.0F		1005	1335	2.6F		0211	0720	2.2E		0335	0743	2.0E	
	1916	2132	0.5E		1907	2124	0.5E			1123	1406		1.6F	1127	1356	1.4F
										1814	2044		0.7E	1704	2019	1.5E
10 Th		0014	*	25 F		0005	*	10 Su		0135	0.7F	25 M		0210	1.4F	
		0703	2.6E			0645	3.1E		0331	0802	2.1E		0518	0837	1.6E	
	1116	1436	2.0F			1412	2.5F			1204	1432		1.4F	1217	1423	1.0F
	1942	2154	0.4E			1912	2117		0.5E		1805		2044	0.9E	1643	2037	2.0E
11 F		0100	*	26 Sa		0108	0.4F	11 M		0221	1.0F	26 Tu		0305	1.8F	
		0745	2.7E		0231	0742	3.0E		0440	0844	1.9E		0016	0305	1.8F	
	1157	1459	1.9F		1150	1444	2.2F			1244	1458		1.1F	1309	1452	0.6F
	2000	2157	0.3E		1908	2111	0.7E			1740	2059		1.2E	1628	2104	2.3E
12 Sa		0143	0.4F	27 Su		0205	0.9F	12 Tu		0221	1.0F	27 W		0355	2.1F	
	0310	0821	2.7E		0403	0836	2.7E		0549	0927	1.6E		0054	0355	2.1F	
	1235	1523	1.8F		1239	1516	1.8F			1328	1527		0.7F	1043	1519	*
	2007	2145	0.3E		1856	2126	1.0E			1721	2114		1.5E	2127	2.5E	
13 Su	0004	0224	0.6F	28 M	0017	0257	1.3F	13 W	0037	0353	1.6F	28 Th	0133	0449	2.2F	
	0407	0856	2.6E		0526	0926	2.3E		0703	1017	1.2E		1000	1203	0.3E	
	1311	1549	1.6F		1326	1545	1.3F			1422	1549		0.3F		1541	*
	2006	2158	0.4E		1835	2146	1.4E			1705	2129		1.9E		2156	2.6E
14 M	0018	0307	0.8F	29 Tu	0059	0352	1.5F	14 Th	0111	0443	1.8F	29 F	0216	0539	2.2F	
	0502	0933	2.3E		0648	1020	1.7E		0833	1106	0.7E		1208	2217	2.6E	
	1347	1617	1.3F			1414	1612		0.8F		1608		*			
	1947	2214	0.6E			1814	2212		1.7E		2139		2.2E			
15 Tu	0043	0353	0.9F	30 W	0145	0449	1.7F	15 F	0153	0538	2.0F	30 Sa	0302	0633	2.1F	
	0558	1008	1.9E		0820	1118	1.1E		1037	1231	0.3E		1354	2243	2.5E	
	1425	1646	1.0F			1511	1641		0.4F		1356		0.3E			
	1917	2228	0.9E			1800	2238		2.0E		2159		2.5E			
			31 Th	0236	0545	1.7F										
				1014	1226	0.5E										
					1709	*										
					2306	2.1E										

Time meridian 90° W. 0000 is midnight. 1200 is noon.

* Current weak and variable.

If three consecutive entries are marked (E) the middle one is not a true maximum but an intermediate value to show the current pattern.

GALVESTON BAY ENTRANCE (between jetties), TEXAS, 1983

F-Flood, Dir. 300° True E-Ebb, Dir. 100° True

MAY				JUNE										
Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current	
	h.m.	h.m.	h.m.	Vel.		h.m.	h.m.	h.m.	Vel.		h.m.	h.m.	h.m.	Vel.
1	0355	0731	2.0F		16	0340	0737	2.8F		1	0522	0900	1.9F	
Su	1451	2313	2.3E		M	1516	2325	3.2E		W	1529			
2	0457	0839	1.9F		17	0447	0841	2.7F		2		0105	1.9E	
M	1533				Tu	1552				Th.	0619	0946	1.7F	
											1533	1905	0.8E	
												2052	0.7E	
3		0000	2.0E		18		0043	2.8E		3		0241	1.6E	
Tu	0604	0956	1.8F		W	0557	0946	2.5F		F	0715	1029	1.5F	
	1606					1608					1527	1913	0.9E	
												2215	0.4E	
4		0212	1.8E		19		0226	2.4E		4		0404	1.3E	
W	0711	1055	1.8F		Th	0706	1041	2.2F		Sa	0811	1104	1.3F	
	1628	1936	0.9E			1604	1915	0.9E			1515	1854	1.0E	
		2129	0.8E				2150	0.5E				2326	*	
5		0340	1.7E		20		0357	2.0E		5		0521	1.0E	
Th	0811	1136	1.7F		F	0810	1124	1.9F		Su	0905	1140	1.0F	
	1640	1952	0.9E			1554	1913	1.1E			1448	1830	1.3E	
		2240	0.4E				2310	*			2226			
6		0456	1.7E		21		0520	1.6E		6		0022	0.7F	
F	0906	1211	1.6F		Sa	0910	1159	1.5F		M	0317	0630	0.8E	
	1643	2002	0.9E			1542	1902	1.4E			1003	1215	0.7F	
		2340	*			2233					1419	1839	1.7E	
											2240			
7		0559	1.6E		22		0027	0.7F		7		0118	1.3F	
Sa	0955	1240	1.4F		Su	0306	0643	1.3E		Tu	0518	0739	0.6E	
	1639	1943	1.0E			1006	1228	1.1F			1107	1242	0.4F	
	2301					1523	1917	1.9E			1405	1900	2.2E	
						2259					2303			
8		0037	0.5F		23		0130	1.3F		8		0207	1.9F	
Su	0226	0654	1.5E		M	0511	0757	0.9E		W	0654	0859	0.4E	
	1042	1309	1.2F			1101	1303	0.8F				1312	*	
	1622	1938	1.2E			1503	1934	2.3E				1926	2.7E	
	2311					2331					2334			
9		0129	1.0F		24		0224	1.8F		9		0256	2.4F	
M	0409	0744	1.3E		Tu	0650	0913	0.6E		Th	0829	1112	0.3E	
	1129	1336	0.9F			1158	1331	0.4F				1327	*	
	1556	1950	1.6E			1454	2003	2.7E				1955	3.2E	
	2329													
10		0212	1.4F		25		0007	0.313		10		0012	0.344	
Tu	0538	0839	1.1E		W	0823	1042	0.4E		F	1026	2024	3.5E	
	1221	1405	0.5F				1358	*						
	1539	2008	2.0E				2027	2.9E						
	2353													
11		0301	1.9F		26		0044	0.402		11		0056	0.438	
W	0705	0936	0.8E		Th	1001	1224	0.3E		Sa	1225	2103	3.8E	
		1433	*				1421	*						
		2029	2.4E				2056	3.0E						
12		0350	2.3F		27		0122	0.445		12		0145	0.529	
Th	0838	1042	0.5E		F	1142	2125	3.0E		Su	1340	2151	3.8E	
		1448	*											
		2045	2.8E											
13		0441	2.6F		28		0202	0.533		13		0239	0.624	
F	1031	2113	3.1E		Sa	1257	2154	2.9E		M	1435	2240	3.6E	
14		0534	2.8F		29		0245	0.619		14		0336	0.721	
Sa	1306	2145	3.3E		Su	1352	2221	2.7E		Tu	1509	2335	3.2E	
15		0635	2.8F		30		0333	0.711		15		0436	0.813	
Su	1426	2228	3.3E		M	1436	2259	2.5E		W	1513			
					31		0426	0.805						
					Tu	1509	2342	2.2E						

Time meridian 90° W. 0000 is midnight. 1200 is noon.

* Current weak and variable.

If three consecutive entries are marked (E) the middle one is not a true maximum but an intermediate value to show the current pattern.

GALVESTON BAY ENTRANCE (between jetties), TEXAS, 1983

127

F-Flood, Dir. 300° True E-Ebb, Dir. 100° True

JULY

AUGUST

Day	Slack Water			Maximum Current			Day	Slack Water			Maximum Current					
	Time	h.m.	Vel.	Time	h.m.	Vel.		Time	h.m.	Vel.	Time	h.m.	Vel.			
1		0012	1.8E	16	0209	1.2E	1		0309	0.4E	16	0003	1.5F			
F	0532	0852	1.5F	Sa	0611	0851	1.1F	M	0912	*	Tu	0530	0730	0.3E		
	1416	1820	0.6E		1210	1559	1.3E		1542	1.3E		0926	*			
		2021	0.5E		2005	2150	0.5F		2012	0.8F		1629	2.3E			
2		0142	1.3E	17	0058	0352	0.5E	2		0739	*	17	2058	0106	1.9F	
Sa	0623	0930	1.2F	Su	0715	0932	0.7F	Tu	0947	*	W	0626	0831	0.4E		
	1350	1806	0.8E		1145	1642	1.8E		1620	1.8E		1015	0.3E			
		2144	*		2049	2341	1.0F		2048	2356	1.5F		1727	2.5E		
3		0320	0.8E	18		0650	*	3		0607	0900	0.4E	18	2150	0155	2.1F
Su	0721	1012	0.9F	M		1012	0.3F	W		1022	0.3E	Th	0711	0915	0.5E	
	1306	1712	1.1E		1137	1714	2.3E			1703	2.3E			1117	0.3E	
	2129	2301	0.4F		2133				2130					1818	2.7E	
4		0131	0.5E	19		0117	1.6F	4		0054	2.1F	19	2237	0230	2.2F	
M	0833	1047	0.5F	Tu		0820	*	Th	0721	1002	0.4E	F	0753	0950	0.4E	
	1237	1730	1.6E			1054	*			1057	0.4E			1206	*	
	2140					1758	2.6E			1750	2.9E			1902	2.8E	
5		0009	1.0F	20		0206	2.0F	5		0149	2.6F	20	2322	0303	2.2F	
Tu	0446	0656	0.3E	W	0745	0924	0.3E	F	0830	1835	3.4E	Sa	0834	1025	0.3E	
		1121	*			1137	*		2304				1255	*		
		1748	2.1E			1835	2.9E						1942	2.9E		
		2205				2259										
6		0106	1.7F	21		0249	2.3F	6		0236	3.0F	21	0004	0324	2.2F	
W	0637	0924	0.3E	Th	0840	1021	0.3E	Sa	0949	1924	3.8E	Su	0004	1054	*	
		1150	*			1216	*		2353				1338	*		
		1820	2.6E			1915	3.0E						2023	2.9E		
		2238				2340										
7		0201	2.3F	22		0324	2.4F	7		0323	3.1F	22	0044	0351	2.0F	
Th	0813	1053	0.3E	F		1118	*	Su		1214	*	M		1109	*	
		1211	*			1300	*			1238	*			1415	0.3F	
		1852	3.2E			1953	3.1E			2016	4.0E			2058	2.9E	
		2318												1534		
8		0250	2.8F	23	0021	0353	2.4F	8	0044	0407	3.0F	23	0122	0417	1.9F	
F	0950	1935	3.6E	Sa		1158	*	M		1226	*	Tu		1057	*	
						1338	*			1400	0.3F			1456	0.4F	
						2033	3.1E			1521	2105	3.9E		1624	2134	2.7E
9	0003	0339	3.1F	24	0101	0424	2.4F	9	0134	0447	2.8F	24	0158	0449	1.7F	
Sa	1129	2016	4.0E	Su		1242	*	Tu		1144	*	W		1058	*	
						1415	*			1503	0.4F			1539	0.5F	
						2105	3.1E			1636	2154	3.6E		1713	2204	2.4E
10	0051	0427	3.3F	25	0141	0454	2.2F	10	0224	0527	2.3F	25	0234	0515	1.4F	
Su	1308	2105	4.1E	M		1344	*	W		1151	*	Th		1119	*	
						1444	*			1612	0.5F			1624	0.5F	
						2142	3.0E			1748	2250	2.9E		1804	2240	2.0E
11	0142	0518	3.2F	26	0219	0528	2.1F	11	0313	0605	1.8F	26	0311	0547	1.1F	
M	1434	2154	3.9E	Tu	1506	2215	2.7E	Th	1041	1220	0.3E	F	0906	1139	0.4E	
									1437	1724	0.6F		1405	1720	0.5F	
									1906	2346	2.1E		1904	2321	1.5E	
12	0234	0604	2.9F	27	0257	0603	1.9F	12	0404	0640	1.3F	27	0353	0619	0.7F	
Tu	1534	2248	3.5E	W	1505	2250	2.4E	F	1009	1255	0.8E	Sa	0832	1157	0.7E	
									1624	1840	0.6F		1514	1826	0.5F	
									2041				2020			
13	0327	0650	2.6F	28	0334	0641	1.6F	13		0055	1.3E	28		0015	0.9E	
W	1508	2345	2.9E	Th	1446	2318	2.0E	Sa		0459	0715	0.8F	Su	0459	0649	0.3F
										0938	1340	1.2E		0812	1212	1.0E
										1749	2003	0.8F		1632	1938	0.7F
										2336				2221		
14	0421	0733	2.1F	29	0413	0715	1.3F	14		0221	0.5E	29		0149	0.4E	
Th	1311	1557	0.3E	F		1410	*	Su		0612	0.3F	M		0724	*	
		1837	*			1512	*			0922	1432	1.6E		1236	1.3E	
						1648	*			1901	2139	1.0F		1749	2059	1.0F
						1833	*									
15		0046	2.1E	30		0000	1.5E	15		0609	*	30	0309	1339	1.6E	
F	0515	0814	1.6F	Sa	0456	0756	1.0F	M		0837	*	Tu	1858	2220	1.4F	
	1238	1538	0.7E		1136	1430	0.4E			1532	2.0E					
		2009	*			1956	*			2003						
				31		0109	0.9E					31	0506	1507	2.0E	
				Su		0836	0.6F					W	2001	2339	1.9F	
						1046	0.8E									
						1944	0.3F									
						2312										

Time meridian 90° W. 0000 is midnight. 1200 is noon.

* Current weak and variable.

If three consecutive entries are marked (E) the middle one is not a true maximum but an intermediate value to show the current pattern.

GALVESTON BAY ENTRANCE (between jetties), TEXAS, 1983

F-Flood, Dir. 300° True E-Ebb, Dir. 100° True

SEPTEMBER								OCTOBER							
Day	Slack Water			Maximum Current			Day	Slack Water			Maximum Current				
	Time	Time	Vel.	Time	Time	Vel.		Time	Time	Vel.	Time	Time	Vel.		
	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots
1 Th	0604 2059	1624	2.5E	16 F	0123 0615	0123 0841 1105 1756	2.0F 0.7E 0.4E 2.4E	1 Sa	0611 2133	0015 0903 1040 1713	2.5F 0.7E 0.6E 2.8E	16 Su	0531 2219	0053 0825 1146 1821	1.8F 0.8E * 2.0E
2 F	0658 2155	0041 1724	2.4F 2.9E	17 Sa	0645 2256	0152 0909 1201 1847	2.0F 0.6E * 2.5E	2 Su	0632 2229	0100 0904 1145 1815	2.5F 0.5E * 2.9E	17 M	0537 1114 1407 2303	0116 0825 1237 1903	1.7F 0.8E 0.4F 2.0E
3 Sa	0749 2249	0132 1006 1142 1827	2.7F 0.4E 0.3E 3.3E	18 Su	0706 2338	0216 0928 1246 1929	2.0F 0.5E * 2.6E	3 M	0635 1113 1404 2321	0141 0846 1245 1910	2.4F 0.5E 0.4F 2.9E	18 Tu	0537 1124 1531 2344	0143 0820 1323 1947	1.5F 0.9E 0.7F 1.9E
4 Su	2340	0215 1017 1237 1918	2.8F * * 3.5E	19 M	0720 1145 1505	0236 0927 1145 2005	1.8F 0.4E 0.5F 2.5E	4 Tu	0630 1122 1543	0213 0835 1342 2009	2.1F 0.7E 0.9F 2.6E	19 W	0525 1142 1642	0209 0821 1409 2028	1.3F 1.1E 1.1F 1.7E
5 M	1453	0255 0954 1332 2011	2.7F * 0.4F 3.5E	20 Tu	0018 0726 1158 1604	0303 0922 1412 2042	1.7F 0.5E 0.7F 2.4E	5 W	0011 0614 1152 1712	0246 0854 1439 2103	1.7F 1.1E 1.4F 2.2E	20 Th	0025 0502 1203 1752	0236 0836 1455 2114	1.0F 1.4E 1.4F 1.4E
6 Tu	0030 1614	0333 0954 1423 2100	2.5F * 0.8F 3.2E	21 W	0055 0721 1215 1700	0329 0930 1456 2122	1.4F 0.6E 0.9F 2.1E	6 Th	0100 0551 1233 1841	0317 0918 1532 2158	1.2F 1.6E 1.7F 1.6E	21 F	0109 0446 1228 1906	0302 0852 1537 2200	0.6F 1.7E 1.7F 1.0E
7 W	0119 0825 1218 1731	0408 1011 1523 2155	2.0F 0.5E 1.1F 2.7E	22 Th	0133 0659 1238 1758	0355 0945 1542 2157	1.2F 0.8E 1.0F 1.7E	7 F	0151 0533 1319 2020	0343 0939 1631 2301	0.7F 2.0E 1.9F 1.0E	22 Sa	0323 0906 1627 2036	* 2.0E 1.9F 0.6E	
8 Th	0208 0801 1319 1851	0440 1037 1624 2247	1.5F 0.9E 1.2F 2.0E	23 F	0212 0634 1310 1901	0424 1005 1630 2240	0.8F 1.0E 1.1F 1.3E	8 Sa	0255 0517 1410 2219	0411 1013 1728	0.3F 2.3E 2.0F	23 Su	0339 0922 1336 1715	* 2.3E 2.0F	
9 F	0258 0733 1426 2026	0512 1106 1731 2355	1.0F 1.3E 1.3F 1.2E	24 Sa	0301 0618 1349 2019	0451 1012 1719 2335	0.4F 1.3E 1.2F 0.8E	9 Su	1505	0017 0432 1043 1829	0.4E * 2.4E 2.0F	24 M	0019 0108 0934 1812	* * 2.6E 2.1F	
10 Sa	0357 0715 1536 2248	0541 1141 1836	0.5F 1.6E 1.4F	25 Su	0509 1022 1437 2231	* 1.6E 1.4F	10 M	0105 1607	1112 1937	2.4E 1.9F	25 Tu	0145 1510	1005 1921	2.7E 2.2F	
11 Su	1650	0115 0614 1224 1951	0.5E * 1.8E 1.4F	26 M	0057 0256 1042 1536	0.3E * 1.9E 1.5F	11 Tu	0253 1716	1157 2101	2.3E 1.9F	26 W	0302 1625	1046 2029	2.8E 2.3F	
12 M	0209 1804	0527 0643 1314 2125	0.3E 0.3E 2.0E 1.5F	27 Tu	0222 1648	1114 2042	2.1E 1.7F	12 W	0344 1828	1306 2239	2.1E 1.9F	27 Th	0350 1741	1146 2144	2.7E 2.4F
13 Tu	0408 1915	1427 2338	2.0E 1.8F	28 W	0359 1809	1212 2205	2.2E 2.0F	13 Th	0423 1937	1448 2353	1.9E 1.9F	28 F	0428 1856	1333 2249	2.5E 2.4F
14 W	0500 2020	0742 0840 1544	0.7E 0.6E 2.1E	29 Th	0451 1925	1400 2320	2.3E 2.3F	14 F	0453 2038	0747 0940 1617	0.9E 0.7E 1.9E	29 Sa	0454 2005	0814 0914 1533 2340	0.9E 0.9E 2.4E 2.3F
15 Th	0541 2118	0040 0812 1003 1656	2.0F 0.7E 0.6E 2.2E	30 F	0535 2032	1556 2.5E	15 Sa	0516 2132	0030 0809 1051 1727	1.9F 0.9E 0.4E 2.0E	30 Su	0501 2107	0804 1042 1655	0.8E 0.4E 2.3E	
												31 M	0457 2204	0021 0752 1150 1809	2.1F 0.9E * 2.1E

Time meridian 90° W. 0000 is midnight. 1200 is noon.

* Current weak and variable.

If three consecutive entries are marked (E) the middle one is not a true maximum but an intermediate value to show the current pattern.

F-Flood, Dir. 300° True E-Ebb, Dir. 100° True

NOVEMBER						DECEMBER											
Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current		Day	Slack Water Time		Maximum Current				
	h.m.	h.m.	h.m.	knots		h.m.	h.m.	h.m.	knots		h.m.	h.m.	h.m.	h.m.	knots		
1 Tu	0447 1054 1511 2256	0056 0739 1253 2014	1.8F 1.2E 0.8F 1.9E		16 W	0352 1102 1617 2309	0047 0721 1313 1933	1.1F 1.4E 1.0F 1.2E		1 Th	0233 1108 1839 2332	0035 0709 1407 2051	0.7F 2.5E 1.9F 0.5E	16 F	0145 1056 1852	0027 1355 2107	0.3F 1.8E 0.4E
2 W	0428 1118 1702 2348	0125 0748 1353 2014	1.4F 1.7E 1.4F 1.5E		17 Th	0328 1121 1744	0113 0736 1401 2030	0.8F 1.8E 1.5F 0.9E		2 F	0226 1145 2017	0107 0738 1457 2225	0.4F 2.9E 2.4F 0.3E	17 Sa	1125 2020	0054 0715 1439 2303	* 2.7E 2.3F 0.3E
3 Th	0406 1152 1840	0152 0809 1448 2112	1.0F 2.2E 1.9F 1.0E		18 F	0000 0314 1145 1906	0142 0752 1447 2125	0.5F 2.1E 1.9F 0.7E		3 Sa	1224	0135 0807 1545	* 3.2E 2.6F	18 Su	1200 2208	0116 0744 1528	* 3.1E 2.7F
4 F	0041 0354 1230 2016	0221 0838 1537 2226	0.5F 2.6E 2.3F 0.6E		19 Sa	1214 2035	0209 0812 1533 2228	* 2.5E 2.3F 0.4E		4 Su	1304 2343	0001 0157 0839 1629	* * 3.3E 2.7F	19 M	1240	0813 1617	3.5E 3.0F
5 Sa	1312 2204	0249 0904 1632	* 2.9E 2.5F		20 Su	1248 2228	0225 0830 1622	* 2.8E 2.5F		5 M	1346	0914 1718	3.3E 2.7F	20 Tu	0013 1325	0850 1706	3.7E 3.1F
6 Su	1356	0042 0306 0936 1723	0.3E * 3.0E 2.5F		21 M	1329	0853 1715	3.1E 2.7F		6 Tu	1430	0056 0945 1804	3.2E 2.5F	21 W	0135 1415	0929 1758	3.8E 3.0F
7 M	0027 1444	0958 1817	2.9E 2.4F		22 Tu	0104 1417	0922 1806	3.3E 2.7F		7 W	0148 1518	1016 1855	2.9E 2.3F	22 Th	0232 1508	1013 1850	3.7E 2.8F
8 Tu	0152 1538	1029 1921	2.8E 2.2F		23 W	0214 1512	1003 1909	3.4E 2.7F		8 Th	0230 1609	1052 1948	2.6E 2.1F	23 F	0312 1605	1106 1942	3.3E 2.5F
9 W	0242 1638	1058 2027	2.5E 2.1F		24 Th	0303 1615	1050 2013	3.2E 2.6F		9 F	0301 1703	1133 2037	2.3E 1.9F	24 Sa	0322 1703	1208 2028	2.7E 2.1F
10 Th	0320 1744	1151 2139	2.2E 1.9F		25 F	0339 1722	1153 2113	2.9E 2.5F		10 Sa	0318 1800	1238 2123	1.9E 1.7F	25 Su	0238 1803	0556 0720 1330 2116	0.5E 0.5E 2.0E 1.7F
11 F	0349 1849	1349 2236	1.9E 1.8F		26 Sa	0356 1830	1329 2207	2.4E 2.2F		11 Su	0317 1856	0647 0832 1420 2206	0.8E 0.7E 1.5E 1.4F	26 M	0201 1905	0537 0911 1501 2154	0.8E * 1.3E 1.3F
12 Sa	0408 1950	0716 0912 1524 2321	0.9E 0.8E 1.7E 1.7F		27 Su	0347 1935	0704 0911 1515 2253	0.8E 0.7E 2.0E 1.9F		12 M	0307 1953	0654 0952 1547 2248	0.9E 0.4E 1.2E 1.2F	27 Tu	0135 0912 1338 2011	0524 1050 1652 2236	1.3E 0.4F 0.7E 0.8F
13 Su	0416 2045	0731 1026 1636 2346	0.9E 0.5E 1.6E 1.6F		28 M	0332 2037	0651 1042 1648 2328	1.0E * 1.5E 1.5F		13 Tu	0252 2050	0645 1109 1710 2323	1.0E * 0.9E 0.9F	28 W	0106 0939 1643 2120	0537 1224 1907 2311	1.9E 1.1F 0.4E 0.5F
14 M	0416 2135	0742 1132 1743	1.0E * 1.5E		29 Tu	0315 1014 1435 2136	0639 1202 1806	1.4E 0.6F 1.2E		14 W	0225 1017 1532 2148	0621 1212 1827 2353	1.4E 0.6F 0.7E 0.6F	29 Th	0053 1016 1844	0606 1329 2046 2346	2.5E 1.8F 0.3E *
15 Tu	0410 1051 1430 2222	0018 0727 1224 1839	1.4F 1.1E 0.5F 1.3E		30 W	0252 1036 1655 2233	0003 0648 1307 1933	1.1F 1.9E 1.3F 0.8E		15 Th	0157 1032 1723 2252	0628 1306 1939	1.8E 1.3F 0.5E	30 F	1055 2013	0638 1424 2201	2.9E 2.3F 0.3E
														31 Sa	1135	0022 0715 1506 2307	* 3.2E 2.6F *

Time meridian 90° W. 0000 is midnight. 1200 is noon.

* Current weak and variable.

If three consecutive entries are marked (E) the middle one is not a true maximum but an intermediate value to show the current pattern.

F-Flood, Dir. 250° True E-Ebb, Dir. 055° True

JANUARY				FEBRUARY										
Day	Slack Water Time		Maximum Current Vel.		Day	Slack Water Time		Maximum Current Vel.		Day	Slack Water Time		Maximum Current Vel.	
	h.m.	h.m.	knots			h.m.	h.m.	knots			h.m.	h.m.	knots	
1			0036	0.6F	16			0100	0.5F	1			0148	0.8F
Sa	0329	0610	0.5E		Su	0402	0629	0.3E		Tu	0458	0754	0.7E	
	0843	1214	0.9F			0851	1218	0.6F			1056	1357	0.7F	
	1526	1859	1.1E			1521	1901	0.8E			1651	2014	0.9E	
	2241					2247					2330			
2			0125	0.7F	17			0135	0.5F	2			0237	0.8F
Su	0427	0710	0.5E		M	0441	0713	0.3E		W	0551	0851	0.7E	
	0949	1312	0.8F			0944	1301	0.6F			1203	1452	0.6F	
	1617	1948	1.0E			1559	1936	0.8E			1740	2059	0.8E	
	2324					2316								
3			0216	0.7F	18			0208	0.5F	3			0326	0.8F
M	0524	0810	0.6E		Tu	0520	0802	0.4E		Th	0644	0951	0.7E	
	1058	1407	0.7F			1041	1348	0.5F			1312	1548	0.5F	
	1708	2037	1.0E			1639	2015	0.7E			1829	2146	0.7E	
						2343								
4			0307	0.7F	19			0245	0.6F	4			0415	0.8F
Tu	0620	0910	0.6E		W	0559	0847	0.4E		F	0737	1048	0.7E	
	1209	1508	0.6F			1142	1434	0.4F			1422	1647	0.4F	
	1800	2130	0.9E			1719	2051	0.7E			1921	2234	0.6E	
5			0359	0.8F	20			0321	0.6F	5			0502	0.8F
W	0717	1013	0.6E		Th	0640	0939	0.5E		Sa	0828	1145	0.7E	
	1324	1612	0.5F			1248	1527	0.4F			1533	1748	0.3F	
	1853	2217	0.8E			1803	2131	0.6E			2016	2324	0.5E	
6			0448	0.8F	21			0403	0.7F	6			0551	0.8F
Th	0812	1117	0.7E		F	0724	1030	0.6E		Su	0919	1243	0.7E	
	1441	1713	0.4F			1357	1622	0.3F			1640	1852	0.3F	
	1947	2307	0.6E			1851	2215	0.6E			2115			
7			0539	0.8F	22			0444	0.7F	7			0618	0.4E
F	0905	1216	0.7E		Sa	0812	1124	0.7E		M	0257	0639	0.7F	
	1557	1817	0.3F			1507	1723	0.3F			1007	1336	0.7E	
	2045	2358	0.5E			1945	2302	0.5E			1741	1953	0.3F	
											2219			
8			0630	0.8F	23			0533	0.8F	8			0730	0.3E
Sa	0957	1317	0.7E		Su	0902	1224	0.7E		Tu	0343	0730	0.7F	
	1709	1923	0.3F			1617	1826	0.3F			1054	1429	0.8E	
	2145					2045	2353	0.5E			1833	2050	0.3F	
											2323			
9			0051	0.5E	24			0624	0.8F	9			0203	0.3E
Su	0335	0718	0.8F		M	0954	1321	0.8E		W	0431	0819	0.7F	
	1045	1414	0.8E			1721	1932	0.3F			1139	1516	0.8E	
	1813	2025	0.3F			2151					1918	2139	0.3F	
	2247													
10			0140	0.4E	25			0054	0.5E	10			0257	0.3E
M	0416	0804	0.8F		Tu	0330	0719	0.9F		Th	0522	0904	0.7F	
	1130	1502	0.8E			1048	1418	0.9E			1221	1557	0.8E	
	1908	2120	0.3F			1819	2034	0.3F			1957	2226	0.4F	
	2350					2259								
11			0235	0.3E	26			0156	0.5E	11			0351	0.3E
Tu	0458	0848	0.8F		W	0427	0815	0.9F		F	0613	0953	0.6F	
	1212	1549	0.8E			1142	1513	1.0E			1303	1640	0.8E	
	1956	2212	0.3F			1911	2132	0.4F			2032	2309	0.4F	
12			0322	0.3E	27			0253	0.5E	12			0437	0.3E
W	0541	0931	0.7F		Th	0529	0912	0.9F		Sa	0706	1035	0.6F	
	1252	1632	0.9E			1236	1607	1.0E			1343	1720	0.8E	
	2036	2259	0.3F			1959	2228	0.5F			2104	2345	0.5F	
13			0411	0.3E	28			0358	0.5E	13			0523	0.4E
Th	0626	1013	0.7F		F	0633	1013	0.9F		Su	0758	1119	0.6F	
	1330	1711	0.9E			1329	1659	1.1E			1422	1756	0.8E	
	2113	2342	0.4F			2044	2322	0.6F			2133			
14			0457	0.3E	29			0459	0.6E	14			0606	0.4E
F	0712	1054	0.7F		Sa	0739	1108	0.9F		M	0321	0606	0.4E	
	1407	1748	0.9E			1421	1748	1.0E			0850	1202	0.6F	
	2146					2127					1502	1832	0.8E	
											2201			
15			0021	0.4F	30			0011	0.6F	15			0056	0.5F
Sa	0320	0543	0.3E		Su	0308	0559	0.6E		Tu	0358	0650	0.5E	
	0800	1135	0.6F			0844	1204	0.9F			0943	1247	0.5F	
	1444	1823	0.9E			1512	1838	1.0E			1541	1906	0.7E	
	2217					2209					2228			
					31			0100	0.7F					
					M	0404	0659	0.7E						
						0950	1300	0.8F						
						1602	1925	1.0E						
						2250								

Time meridian 60° W. 0000 is midnight. 1200 is noon.

TABLE 2.—CURRENT DIFFERENCES AND OTHER CONSTANTS AND ROTARY TIDAL CURRENTS

EXPLANATION OF TABLE

In this publication, reference stations are those for which daily predictions are listed in Table 1. Those stations appearing in Table 2 are called subordinate stations. The principal purpose of Table 2 is to present data that will enable one to determine the approximate times of minimum currents (slack waters) and the times and speeds of maximum currents at numerous subordinate stations on the Atlantic Coast of North America. By applying the specific corrections given in Table 2 to the predicted times and speeds of the current at the appropriate reference station, reasonable approximations of the current at the subordinate station may be compiled.

Locations and Depths

Because the latitude and longitude are listed according to the exactness recorded in the original survey records, the locations of the subordinate stations are presented in varying degrees of accuracy. Since a minute of latitude is nearly equivalent to a mile, a location given to the nearest minute may not indicate the exact position of the station. This should be remembered, especially in the case of a narrow stream, where the nearest minute of latitude or longitude may locate a station inland. In such cases, unless the description locates the station elsewhere, reference is made to the current in the center of the channel. In some instances, the charts may not present a convenient name for locating a station. In those cases, the position may be described by a bearing from some prominent place on the chart.

Although current measurements may have been recorded at various depths in the past, the data listed here for most of the subordinate stations are mean values determined to have been representative of the current at each location. For that reason, no specific current meter depths for those stations are given in Table 2. Beginning with the Boston Harbor tidal current survey in 1971, data for individual meter depths were published and subsequent new data may be presented in a similar manner.

Since most of the current data in Table 2 came from meters suspended from survey vessels or anchored buoys, the listed depths are those measured downward from the surface. Some later data have come from meters anchored at fixed depths from the bottom. Those meter positions were defined as depths below chart datum. Such defined depths in this and subsequent editions will be accompanied by the small letter "d".

Minimum Currents

The reader may note that at many locations the current may not diminish to a true slack water or zero speed stage. For that reason, the phrases, "minimum before flood" and "minimum before ebb" are used in Table 2 rather than "slack water" although either or both minimums may actually reach a zero speed value at some locations. Table 2 lists the average speeds and directions of the minimums.

Maximum Currents

Near the coast and in inland tidal waters, the current increases from minimum current (slack water) for a period of about 3 hours until the maximum speed or the strength of the current is reached. The speed then decreases for another period of about 3 hours when minimum current is again reached and the current begins a similar cycle in the opposite direction. The current that flows toward the coast or up a stream is known as the flood current; the op-

posite flow is known as the ebb current. Table 2 lists the average speeds and directions of the maximum floods and maximum ebbs. The directions are given in degrees, true, reading clockwise from 000° at north to 359° and are the directions toward which the currents flow.

Time Differences and Speed Ratios

Table 2 contains mean time differences by which the reader can compile approximate times for the minimum and maximum current phases at the subordinate stations. Time differences for those phases should be applied to the corresponding phases at the reference station. It will be seen upon inspection that some subordinate stations exhibit either a double flood or a double ebb stage or both. Explanations of these stages can be found in the glossary located elsewhere in this publication. In those cases, a separate time difference is listed for each of the three flood (or ebb) phases and these should be applied only to the daily maximum flood (or ebb) phase at the reference station. The results obtained by the application of the time differences will be based upon the time meridian shown above the name of the subordinate station. Differences of time meridians between a subordinate station and its reference station have been accounted for and no further adjustment by the reader is needed. Summer or daylight saving time is not used in this publication.

The speed ratios are used to compile approximations of the daily current speeds at the subordinate stations and refer only to the maximum floods and ebbs. No attempt is made to predict the speeds of the minimum currents. Normally, these ratios should be applied to the corresponding maximum current phases at the reference station. As mentioned above, however, some subordinate stations may exhibit either a double flood or a double ebb or both. As with the time differences, separate ratios are listed for each of the three flood (or ebb) phases and should be applied only to the daily maximum flood (or ebb) speed at the reference station. It should be noted that although the speed of a given current phase at a subordinate station is obtained by reference to the corresponding phase at the reference station, the directions of the current at the two places may differ considerably. Table 2 lists the average directions of the various current phases at the subordinate stations.

Rotary Tidal Currents

The last page of Table 2 is a listing of data for those stations which exhibited rotary current patterns. Briefly, a rotary current can be described as one which flows continually with the direction of flow changing through all points of the compass during the tidal period. A more complete description can be found in the glossary located elsewhere in this publication. The average speeds and directions are listed in half-hour increments as referred to the predicted times of "minimum before flood" at the reference station in Table 1. The Moon, at times of new, full, or perigee may increase these speeds 15 to 20 percent above average; or 30 to 40 percent if perigee occurs at or near the time of new or full Moon. Conversely, the Moon at times of quadrature or apogee may decrease the speeds 15 to 20 percent or 30 to 40 percent if they occur together. Near average speeds may be expected when apogee occurs near or at new or full Moon, or when perigee occurs at or near quadrature. The directions of the currents are given in degrees, true reading clockwise from 000° at north to 359° and are the direction toward which the water is flowing.

Example of The Use of Table 2

Suppose we wish to calculate the times of the minimum currents and the times and speeds of the maximum currents on a particular morning at the location listed as Winthrop Head, 1.1 nautical miles east of. From Table 2 we learn that the reference station is Boston

TABLE 2.—CURRENT DIFFERENCES AND OTHER CONSTANTS
AND ROTARY CURRENTS

Harbor whose morning currents are listed below. Currents for Winthrop Head can be approximated by using the Table 2 corrections as indicated.

	Minimum before flood h.m.	Maximum flood h.m.	kn	Minimum before ebb h.m.	Maximum ebb h.m.	kn
Boston Harbor	0052	0419	1.2	0645	1109	1.4
Table 2 corrections	<u>-0112</u>	<u>+0019</u>	<u>×0.4 ratio</u>	<u>+0031</u>	<u>-0146</u>	<u>×0.3 ratio</u>
Winthrop Head	<u>2340*</u>	<u>0438</u>	<u>0.5</u>	<u>0716</u>	<u>0923</u>	<u>0.4</u>

* this minimum current phase is seen to occur just before midnight of the previous day.

Table 2 states that the average speeds and directions of the minimums before flood and ebb are 0.3 knots at 103° and 0.2 knots at 297°; respectively. The average directions of the maximum flood and maximum ebb are 205° and 019°; respectively.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS						
			Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb			
															h. m.	h. m.	h. m.
	BAY OF FUNDY Time meridian, 60°W	ft	° ' N	° ' W	on BAY OF FUNDY ENTRANCE, p.4												
1	Brazil Rock, 6 miles east of.....	43 22	65 18	-2 02	-2 00	-1 56	-2 00	0.4	0.4	0.0	--	1.0	275	0.0	--	1.0	050
6	Cape Sable, 3 miles south of.....	43 20	65 38	-3 02	-2 10	-1 21	-2 10	1.0	0.8	0.0	--	2.2	275	0.0	--	2.0	095
11	Cape Sable, 12 miles south of.....	43 11	65 37	-1 12	-1 00	-0 46	-1 00	0.7	0.7	0.0	--	1.7	285	0.0	--	1.6	090
16	Blonde Rock, 5 miles south of.....	43 15	65 59	-1 02	-0 50	-0 36	-0 50	0.9	0.8	0.0	--	2.0	310	0.0	--	2.0	125
21	Seal Island, 13 miles southwest of.....	43 16	66 15	-0 17	+0 10	+0 39	+0 10	1.1	0.7	0.0	--	2.6	325	0.0	--	1.6	140
26	Cape Fourchu, 17 miles southwest of.....	43 34	66 24	+0 38	+0 45	+0 44	+0 45	0.5	0.5	0.0	--	1.2	355	0.0	--	1.2	145
31	Cape Fourchu, 4 miles west of.....	43 47	66 15	-0 12	0 00	+0 09	0 00	0.9	0.7	0.0	--	2.0	000	0.0	--	1.7	175
36	Lurcher Shoal, 6 miles east of.....	43 52	66 21	+0 08	+0 30	+0 39	+0 30	0.9	0.8	0.0	--	2.0	355	0.0	--	1.8	175
41	Lurcher Shoal, 10 miles west of.....	43 46	66 42	+0 23	+0 30	-0 34	+0 30	0.6	0.7	0.0	--	1.4	000	0.0	--	1.6	160
46	Lurcher Shoal, 10 miles northwest of.....	43 59	66 37	-0 02	+0 30	+0 49	+0 30	0.8	0.5	0.0	--	1.8	005	0.0	--	1.2	175
51	Brier Island, 5 miles west of.....	44 13	66 30	+0 43	+0 50	+0 54	+0 50	1.2	1.0	0.0	--	2.7	005	0.0	--	2.5	185
56	Brier Island, 15 miles west of.....	44 17	66 44	-0 42	-0 15	+0 14	-0 15	0.6	0.5	0.0	--	1.4	060	0.0	--	1.2	250
61	Gannet Rock, 5 miles southeast of.....	44 29	66 41	+0 38	+0 30	+0 09	+0 30	1.1	1.6	0.0	--	2.6	040	0.0	--	3.9	230
66	Boars Head, 10 miles northwest of.....	44 31	66 23	+0 48	+0 55	+0 59	+0 55	0.8	0.8	0.0	--	1.9	020	0.0	--	2.0	205
71	Prim Point, 20 miles west of.....	44 44	66 15	+0 38	+0 45	+0 54	+0 45	0.7	0.6	0.0	--	1.6	040	0.0	--	1.4	235
76	Cape Spencer, 14 miles south of.....	44 58	65 57	+0 51	+0 55	+0 57	+0 55	0.7	0.7	0.0	--	1.7	050	0.0	--	1.6	245
81	BAY OF FUNDY ENTRANCE.....	44 45.2	66 55.9	Daily predictions				0.0	--	2.3	032	0.0	--	2.4	212		
	MAINE COAST Time meridian, 75°W																
86	Eastport, Friar Roads.....	44 54	66 59	0 00	0 00	0 00	0 00	1.2	1.2	0.0	--	3.0	210	0.0	--	3.0	040
91	Western Passage, off Kendall Head.....	44 55.9	67 00.0	+0 27	+0 11	+0 13	+0 40	1.4	1.3	0.0	--	3.2	319	0.0	--	3.1	142
96	Western Passage, off Frost Ledge.....	44 57.9	67 01.9	+0 33	+0 04	-0 16	+0 15	0.9	0.7	0.0	--	2.1	330	0.0	--	1.7	150
101	Pond Point, 7.6 miles SSE of.....	44 20.1	67 30.2	+0 13	-0 20	-1 33	-0 05	0.2	0.5	0.0	--	0.5	015	0.0	--	1.2	215
106	Moosabec Reach, east end.....	44 31.71	67 34.36	-2 45	-3 08	-3 13	-3 39	0.4	0.4	0.0	--	1.0	110	0.0	--	1.0	258
111	Moosabec Reach, west end.....	44 31.25	67 39.00	-1 43	-1 43	-2 00	-1 44	0.4	0.5	0.0	--	1.0	092	0.0	--	1.2	253
116	Bar Harbor, 1.2 miles east of <1>.....	44 23.0	68 10.0	--	+0 30	--	+0 48	0.1	0.3	0.0	--	0.2	328	0.0	--	0.7	148
121	Casco Passage, east end, Blue Hill Bay..	44 11.7	68 27.9	-1 49	-1 44	-1 02	-1 58	0.3	0.3	0.0	--	0.7	086	0.0	--	0.7	284
126	Hat Island, SE of, Jericho Bay.....	44 08.0	68 29.7	-1 02	-0 35	-0 50	-1 20	0.4	0.5	0.0	--	0.9	318	0.0	--	1.3	124
	on PORTSMOUTH HARBOR ENTRANCE, p.10																
136	Isle Au Haut, 0.8 mi. east of Richs Pt..	44 05.0	68 35.0	-2 13	-1 47	-2 09	-1 47	1.2	0.8	0.0	--	1.4	336	0.0	--	1.5	139
146	West Penobscot Bay, off Monroe Island...	44 04.5	69 00.6	-1 09	-1 24	-2 20	-1 12	0.2	0.3	0.0	--	0.3	006	0.0	--	0.6	159
156	Muscongus Sound.....	43 56.5	69 26.9	Current weak and variable													
166	Damariscotta River, off Cavis Point.....	43 52.5	69 35.0	-0 49	-0 44	-1 24	-1 18	0.5	0.6	0.0	--	0.6	350	0.0	--	1.0	215
176	Sheepscoat River, off Barter Island.....	43 54.0	69 41.5	-0 48	-1 02	-1 15	-0 33	0.7	0.6	0.0	--	0.8	005	0.0	--	1.1	200
186	Lower Point, NE of, Sasanoa River.....	43 51.1	69 43.3	-0 48	+0 09	-0 46	-0 27	1.4	1.0	0.0	--	1.7	327	0.0	--	1.8	152
196	Lower Hell Gate, Knubble Bay <2>.....	43 52.6	69 43.8	-0 23	+0 37	-0 46	+0 06	2.5	1.9	0.0	--	3.0	290	0.0	--	3.5	155
206	Upper Hell Gate, Sasanoa River.....	43 53.7	69 46.3	+3 31	+2 48	+1 20	+2 03	0.8	0.5	0.0	--	1.0	307	0.0	--	0.8	142
	KENNEBEC RIVER																
211	Hunniwell Point, northeast of.....	43 45.4	69 46.9	+0 05	+0 12	+0 05	+0 24	2.0	1.6	0.0	--	2.4	332	0.0	--	2.9	151
216	Bald Head, 0.3 mile southwest of.....	43 48.1	69 47.6	+0 23	+0 28	-0 04	+0 23	1.3	1.3	0.0	--	1.6	321	0.0	--	2.3	153

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS									
			Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb						
															h. m.	h. m.	h. m.	h. m.	knots deg.	knots deg.
KENNEBEC RIVER Time meridian, 75°W																				
PORTSMOUTH HARBOR ENTRANCE, p. 10																				
221	Bluff Head, west of.....	43	51.3	69	47.8	+0 33	+0 53	+0 26	+0 24	1.9	1.9	0.0	--	2.3	014	0.0	--	3.4	184	
226	Fiddler Ledge, north of.....	43	52.8	69	47.8	+0 47	+1 12	+0 22	+0 48	1.6	1.4	0.0	--	1.9	267	0.0	--	2.6	113	
231	Doubling Point, south of.....	43	52.8	69	48.4	+0 28	+0 49	+0 23	+0 53	2.2	1.7	0.0	--	2.6	300	0.0	--	3.0	127	
236	Lincoln Ledge, east of.....	43	53.8	69	48.6	+0 32	+0 45	+0 23	+0 34	1.6	1.6	0.0	--	1.9	359	0.0	--	2.8	174	
241	Bath, 0.2 mile south of bridge <3>.....	43	54.5	69	48.5	+0 29	+1 28	+0 43	+0 23	0.8	0.8	0.0	--	1.0	003	0.0	--	1.5	177	
CASCO BAY																				
251	Broad Sound, west of Eagle Island.....	43	42.7	70	03.8	-1 16	-1 05	-1 27	-0 59	0.8	0.7	0.0	--	0.9	010	0.0	--	1.3	168	
261	Hussey Sound, SW of Overset Island.....	15	43	40.27	70	10.52	-1 28	-1 18	-0 58	-1 30	0.9	0.6	0.0	--	1.1	316	0.3	189	1.2	153
	...do.....	25	43	40.27	70	10.52	-1 39	-1 19	-1 06	-1 32	0.9	0.6	0.0	--	1.1	318	0.3	211	1.1	155
	...do.....	40	43	40.27	70	10.52	-1 58	-1 16	-1 05	-1 32	0.9	0.5	0.1	228	1.1	314	0.3	200	1.0	154
271	Hussey Sound, SE of Pumpkin Mob.....	40	43	40.45	70	10.78	-2 21	-1 29	-1 32	-1 14	1.0	0.5	0.1	068	1.2	346	0.1	066	0.9	168
281	Hussey Sound, east of Crow Island.....	40	43	41.33	70	10.79	-2 18	-0 42	-0 55	-1 24	0.7	0.4	0.1	114	0.9	016	0.0	--	0.8	197
291	Portland Hbr. ent., SW of Cushing I.....	43	37.9	70	12.7	-1 43	-1 11	-1 20	-0 58	0.8	0.6	0.0	--	1.0	322	0.0	--	1.1	154	
301	Diamond I. Ledge, midchannel SW. of.....	43	39.6	70	13.5	-1 26	-1 12	-1 11	-1 06	0.8	0.5	0.0	--	0.9	300	0.0	--	0.9	150	
	Portland Breakwater Light																			
311	0.3 mi. NW of <1> <4>.....	43	39.5	70	14.5	--	--	-0 47	--	-1 07	0.3	0.3	0.0	--	0.4		0.0	--	0.5	048
321	Grand Trunk Wharves, off ends <1>.....	43	39.5	70	14.7	--	--	-1 45	--	-1 50	0.5	0.2	0.0	--	0.6	250	0.0	--	0.4	040
331	Portland Bridge, center of draw.....	43	38.7	70	15.5	-1 06	-0 17	-0 38	-0 15	0.8	0.6	0.0	--	0.9	225	0.0	--	1.0	050	
MAINE COAST-Continued																				
341	Cape Elizabeth.....	43	34	70	11	-1 35	-1 35	-1 35	-1 35	0.2	0.2	0.0	--	0.3	340	0.0	--	0.3	160	
351	Cape Porpoise.....	43	22	70	24	-0 55	-0 55	-0 55	-0 55	0.2	0.2	0.0	--	0.3	035	0.0	--	0.3	215	
361	Cape Neddick.....	43	10	70	35	-0 20	-0 20	-0 20	-0 20	0.3	0.3	0.0	--	0.4	025	0.0	--	0.4	205	
371	York Harbor entrance, 3 miles south of..	43	08	70	33	-0 15	-0 15	-0 15	-0 15	0.3	0.3	0.0	--	0.4	025	0.0	--	0.4	205	
PORTSMOUTH HARBOR																				
381	Kitts Rocks, 0.2 mile west of.....	43	03	70	42	0 00	0 00	0 00	0 00	0.7	0.9	0.0	--	0.8	325	0.0	--	1.6	175	
391	Little Harbor entrance.....	43	03	70	43	-1 00	-1 00	-1 00	-1 00	0.6	0.6	0.0	--	0.7	310	0.0	--	1.1	130	
401	PORTSMOUTH HARBOR ENT. (off Wood I.)....	43	03.8	70	42.3	Daily predictions				0.0	0.0	0.0	--	1.2	355	0.0	--	1.8	195	
411	Fort Point.....	43	04	70	42	+0 05	+0 05	+0 05	+0 05	1.2	1.1	0.0	--	1.5	350	0.0	--	2.0	130	
421	Salamander Point.....	43	05	70	43	+0 10	+0 10	+0 10	+0 10	1.1	0.7	0.0	--	1.3	260	0.0	--	1.3	085	
431	Hick Rocks and Clarks Island, between...	43	05	70	43	-0 35	-0 50	-0 35	-0 50	0.8	0.4	0.0	--	0.9	335	0.0	--	0.8	195	
441	Kittery Point Bridge.....	43	05	70	43	-1 10	-1 10	-1 10	-1 10	0.7	0.6	0.0	--	0.8	020	0.0	--	1.1	200	
451	Jamaica Island, northeast of.....	43	05	70	43	-0 25	-0 25	-0 25	-0 25	0.8	0.7	0.0	--	1.0	315	0.0	--	1.0	135	
461	Seavey Island, north of.....	43	05	70	44	+0 15	+0 15	+0 15	+0 15	1.2	1.0	0.0	--	1.4	260	0.0	--	1.8	080	
471	Clarks I. and Seavey I., between <5>....	43	05	70	44					1.5		0.0	--	1.8	200	0.0	--			
481	Clarks Island, south of.....	43	04	70	44	+0 15	+0 15	+0 15	+0 15	1.7	1.7	0.0	--	2.1	260	0.0	--	3.1	080	
491	Seavey Island, south of.....	43	04	70	44	+0 15	+0 15	+0 15	+0 15	2.5	2.1	0.0	--	3.0	260	0.0	--	3.8	090	
501	Marvin Island and Goat Island, between..	43	04	70	44	-1 00	-1 00	-1 00	-1 00	1.0	0.4	0.0	--	1.2	160	0.0	--	0.8	340	
511	Henderson Point, west of.....	43	05	70	44	+0 30	+0 30	+0 30	+0 30	2.2	1.3	0.0	--	2.6	340	0.0	--	2.3	170	
521	Off Gangway Rock.....	43	05	70	45	+0 30	+0 30	+0 30	+0 30	1.7	1.7	0.0	--	2.1	280	0.0	--	3.0	110	
531	Badgers Island, east of.....	43	05	70	45	+0 25	+0 25	+0 25	+0 25	0.9	0.2	0.0	--	1.1	240	0.0	--	0.4	050	

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER		POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS							
		DEPTH	ft	Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood		Maximum Flood		Minimum before Ebb		Maximum Ebb	
												h. m.	h. m.	h. m.	h. m.	knots deg.	deg.	knots deg.	deg.
	PORTSMOUTH HARBOR Time meridian, 75°W																		
541	Badgers Island, southwest of.....			43 05	70 45	+0 30	+0 30	+0 30	+0 30	2.7	2.0	0.0	--	3.3	330	0.0	--	3.7	125
	PISCATAQUA RIVER and TRIBUTARIES																		
546	NW of Nobles Island (RR. bridge).....			43 05	70 46	+0 35	+0 35	+0 35	+0 35	1.3	0.5	0.0	--	1.6	050	0.0	--	0.9	200
551	Nobles Island, north of.....			43 06	70 46	+0 30	+0 30	+0 30	+0 30	3.0	2.4	0.0	--	3.6	305	0.0	--	4.4	140
556	Frankfort Island, south of.....			43 07	70 48	+0 30	+0 30	+0 30	+0 30	2.2	1.6	0.0	--	2.6	310	0.0	--	2.9	130
561	Little Bay entrance, Dover Point.....			43 07	70 50	+0 35	+0 35	+0 35	+0 35	3.2	2.3	0.0	--	3.8	270	0.0	--	4.2	095
566	Furber Strait.....			43 05	70 52	+0 40	+0 40	+0 40	+0 40	1.7	1.2	0.0	--	2.0	185	0.0	--	2.1	010
	MASSACHUSETTS COAST																		
571	Gunboat Shoal.....			43 01	70 42	+0 05	+0 05	+0 05	+0 05	0.4	0.3	0.0	--	0.5	340	0.0	--	0.5	160
576	Isles of Shoals Light, White Island.....			42 58	70 37	0 00	0 00	0 00	0 00	0.2	0.2	0.0	--	0.3	020	0.0	--	0.3	200
	on BOSTON HARBOR, p.16																		
581	Merrimack River entrance.....			42 49.1	70 48.6	+1 04	+1 15	+1 13	-0 34	2.0	1.2	0.0	--	2.2	285	0.0	--	1.4	105
586	Newburyport, Merrimack River.....			42 48.8	70 52.1	+1 28	+1 48	+1 47	+0 35	1.4	1.2	0.0	--	1.5	288	0.0	--	1.4	098
591	Plum Island Sound entrance.....			42 42.3	70 47.3	+0 36	+0 50	+0 48	-0 07	1.5	1.2	0.0	--	1.6	316	0.0	--	1.5	184
596	Annisquam Harbor Light.....			42 40.1	70 41.1	+0 42	+0 49	+0 58	+0 03	0.9	1.1	0.0	--	1.0	200	0.0	--	1.3	013
601	Gloucester Harbor entrance.....			42 34.9	70 40.5	-0 28	+0 01	-0 29	-0 36	0.3	0.2	0.0	--	0.3	340	0.0	--	0.3	195
606	Blynman Canal ent., Gloucester Harbor...			42 36.6	70 40.4	-0 06	+0 05	-0 15	-0 39	2.7	2.8	0.0	--	3.0	310	0.0	--	3.3	130
611	Marblehead Channel.....			42 30	70 49	+1 09	+1 09	+1 09	+1 09	0.4	0.3	0.0	--	0.4	285	0.0	--	0.4	105
616	Ram Island, 0.2 n.mi. NNE of.....	10		42 28.75	70 51.68	See Rotary Tidal Currents, p.185													
621	Ram Island, 0.2 n.mi. southeast of.....	10		42 28.45	70 51.55	See Rotary Tidal Currents, p.185													
626	Great Pig Rocks, southeast of.....	10		42 27.53	70 50.70	See Rotary Tidal Currents, p.185													
631	Galloupes Point, 0.4 n.mi. south of.....	10		42 27.24	70 53.70	See Rotary Tidal Currents, p.185													
636	Little Nahant, 0.9 n.mi. northeast of...	10		42 26.85	70 54.84	See Rotary Tidal Currents, p.185													
641	Egg Rock, 0.2 n.mi. north of.....	10		42 26.25	70 53.93	See Rotary Tidal Currents, p.185													
646	Egg Rock, southwest of.....	10		42 25.85	70 54.20	See Rotary Tidal Currents, p.185													
651	Nahant, 1.8 n.mi. NE of East Point.....	10		42 26.00	70 52.02	+0 32	+0 49	+0 15	+1 00	0.6	0.6	0.0	--	0.7	252	0.1	291	0.7	144
	.....do.....	45		42 26.00	70 52.02	-0 21	+1 04	+1 14	-0 31	0.3	0.2	0.0	--	0.3	250	0.0	--	0.2	070
	.....do.....	80		42 26.00	70 52.02	-0 25	+1 04	+1 15	-0 31	0.2	0.1	0.1	329	0.2	238	0.0	--	0.2	077
656	Nahant, 0.4 n.mi. east of East Point....	15		42 25.23	70 53.63	+0 04	-0 41	+0 15	+0 22	0.4	0.5	0.2	118	0.5	205	0.0	--	0.6	045
	.....do.....	25		42 25.23	70 53.63	+0 03	-0 26	+0 08	+0 29	0.4	0.4	0.1	102	0.4	198	0.1	282	0.5	027
661	Nahant, 1 n.mi. SE of East Point.....	45		42 23.83	70 51.17	+0 04	+1 04	+1 13	+0 14	0.3	0.2	0.0	--	0.3	253	0.0	--	0.3	074
	.....do.....	70		42 23.83	70 51.17	-0 22	-0 04	+0 19	-1 01	0.2	0.2	0.0	--	0.2	261	0.0	--	0.2	090
666	Pea Island, 0.4 n.mi. southeast of.....	15		42 24.63	70 54.13	+0 53	+0 55	+0 42	-0 01	0.5	0.4	0.0	--	0.5	239	0.1	161	0.5	063
	.....do.....	25		42 24.63	70 54.13	+0 34	+0 34	+0 57	+0 29	0.4	0.3	0.0	--	0.5	224	0.0	--	0.4	048
	.....do.....	65		42 24.63	70 54.13	-0 37	-0 59	+0 14	-0 31	0.3	0.3	0.1	332	0.4	271	0.0	--	0.3	035
671	Bass Point, 1.2 n.mi. southeast of.....	10		42 24.12	70 55.07	-0 22	+1 20	+0 58	-0 14	0.7	0.6	0.1	351	0.7	259	0.0	--	0.7	066
	.....do.....	45		42 24.12	70 55.07	-0 29	-0 10	+0 52	-0 29	0.3	0.2	0.0	--	0.4	251	0.0	--	0.3	086
	.....do.....	60		42 24.12	70 55.07	-0 29	-0 10	+0 31	-0 59	0.2	0.2	0.0	--	0.3	250	0.0	--	0.2	091
676	Bass Point, 0.5 n.mi. SSW of.....	15		42 24.57	70 56.53	See Rotary Tidal Currents, p.185													
681	Bass Point, 0.7 n.mi. west of.....	10		42 25.13	70 57.25	See Rotary Tidal Currents, p.185													

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS					
			Lat.	Long.	Min. before Flood	Min. Flood before Ebb	Min. before Ebb	Min. Ebb before Flood	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb		
		ft	° ' N	° ' W	h. m.	h. m.	h. m.	h. m.			knots deg.	knots deg.	knots deg.	knots deg.		
CAPE COD BAY Time meridian, 75°W					on BOSTON HARBOR, p.16											
1231	Race Point, 7 miles north of.....	42 11	70 16	-0 01	-0 01	-0 01	-0 01	1.4	1.2	0.0	--	1.5 290	0.0	--	1.5 --	
1236	Race Point, 1 mile northwest of.....	42 05	70 15	-0 06	-0 06	-0 06	-0 06	0.9	0.8	0.0	--	1.0 226	0.0	--	0.9 061	
1241	Provincetown Harbor.....	42 03	70 10	+0 04	+0 04	+0 04	+0 04	0.5	0.3	0.0	--	0.6 315	0.0	--	0.4 135	
1246	Wellfleet Harbor.....	41 54	70 03	+0 09	+0 09	+0 09	+0 09	0.6	0.4	0.0	--	0.7 020	0.0	--	0.5 200	
1251	Barnstable Harbor.....	41 43.6	70 16.4	+0 19	+0 58	+0 22	+0 29	1.1	1.2	0.0	--	1.2 192	0.0	--	1.4 004	
1256	Sandwich Harbor.....	41 46	70 29	Current weak and variable				--	--	--	--	--	--	--	--	--
	Cape Cod Canal (see Index).....	--	--	Current weak and variable				--	--	--	--	--	--	--	--	--
1261	Sagamore Beach.....	41 48	70 31	Current weak and variable				--	--	--	--	--	--	--	--	--
1266	Ellisville Harbor, 1 mile east of.....	41 51	70 30	+0 14	+0 14	+0 14	+0 14	0.3	0.2	0.0	--	0.3 200	0.0	--	0.3 020	
1271	Manomet Point.....	41 56	70 32	+0 04	+0 04	+0 04	+0 04	1.0	0.7	0.0	--	1.1 155	0.0	--	0.9 010	
1276	Gurnet Point, 1 mile east of.....	42 00	70 35	-0 06	-0 06	-0 06	-0 06	1.3	0.8	0.0	--	1.4 250	0.0	--	1.0 --	
1281	Plymouth Harbor.....	41 58	70 39	+0 04	+0 04	+0 04	+0 04	0.5	0.3	0.0	--	0.5 245	0.0	--	0.4 010	
1286	Farnham Rock, 1 mile east of.....	42 06	70 35	-0 21	-0 21	-0 21	-0 21	1.0	0.8	0.0	--	1.1 180	0.0	--	0.9 010	
MASSACHUSETTS COAST-Continued					on POLLOCK RIP CHANNEL, p.28											
1291	Nauset Beach Light, 5 miles northeast of	41 56	69 54	See table 5.												
1296	Georges Bank and vicinity.....	--	--	See table 5.												
1301	Davis Bank.....	--	--	See table 5.												
1306	Monomoy Point, 23 miles east of.....	41 35	69 30	See table 5.												
1311	Nantucket Shoals.....	40 37	69 37	See table 5.												
1316	Nantucket Island, 28 miles east of.....	41 20	69 21	See table 5.												
1321	Old Man Shoal, Nantucket Shoals.....	41 13.6	69 59.0	+1 23	+1 03	+1 17	+1 14	0.9	0.9	0.0	--	1.9 080	0.0	--	1.6 225	
1326	Miacomet Pond, 3.0 miles SSE of.....	41 11.4	70 05.8	+2 19	+2 03	+2 22	+2 16	0.6	0.8	0.0	--	1.3 080	0.0	--	1.4 280	
1331	Tuckernuck Island, 4.2 miles SSW of.....	41 13.57	70 16.90	+4 08	+3 13	+2 17	+3 56	0.3	0.6	0.0	--	0.5 090	0.0	--	1.0 280	
1336	Martha's Vineyard, 1.4 miles S of <1>...	41 19.50	70 39.90	--	-2 53	--	-2 47	0.1	0.1	0.0	--	0.3 230	0.0	--	0.3 095	
NANTUCKET SOUND ENTRANCE																
1341	Pollock Rip Channel, east end.....	41 33.9	69 55.4	-0 14	-0 39	-0 23	-0 38	1.0	1.1	0.0	--	2.0 053	0.0	--	1.8 212	
1346	POLLOCK RIP CHANNEL (Butler Hole).....	41 33	69 59	Daily predictions												
1351	Great Round Shoal Channel.....	--	--	See table 5.												
NANTUCKET SOUND																
1356	Monomoy Pt., channel 0.2 mile west of...	41 33.0	70 01.3	0 00	+0 39	+0 18	-0 23	0.8	1.2	0.0	--	1.7 170	0.0	--	2.0 346	
1361	Chatham Roads.....	41 38.6	70 01.7	Current weak and variable												
1366	Stage Harbor, west of Morris Island.....	41 39.4	69 58.5	+3 07	+1 29	+2 24	+4 28	0.3	0.6	0.0	--	0.5 335	0.0	--	1.0 144	
1371	Dennis Port, 2.2 miles south of.....	41 37.0	70 06.9	+1 28	+0 52	+0 27	+1 04	0.2	0.2	0.1	138	0.3 077	0.1	052	0.3 269	
1376	Monomoy Point, 6 miles west of.....	41 33.5	70 09.0	+1 22	+1 52	+1 09	+1 22	0.2	0.3	0.1	194	0.5 090	0.1	256	0.5 275	
1381	Handkerchief Lighted Whistle Buoy "H"...	41 29.3	70 04.0	+1 08	+1 10	+0 49	+0 59	0.6	0.8	0.0	--	1.3 080	0.0	--	1.3 251	
1386	Halfmoon Shoal, 1.9 miles northeast of..	41 29.05	70 11.55	+1 42	+1 49	+1 24	+1 44	0.4	0.3	0.0	--	0.8 110	0.0	--	0.6 265	
1391	Halfmoon Shoal, 3.5 miles east of.....	41 28.1	70 09.2	+1 13	+1 23	+1 06	+1 11	0.5	0.6	0.0	--	1.1 088	0.0	--	1.0 295	
1396	Great Point, 0.5 mile west of.....	41 23.6	70 03.7	+0 25	+1 37	+1 13	+0 33	0.6	0.7	0.0	--	1.1 029	0.0	--	1.2 195	
1401	Great Point, 3 miles west of.....	41 23.4	70 06.8	+1 15	+1 23	+0 51	+1 08	0.4	0.5	0.0	--	0.8 066	0.0	--	0.8 248	
1406	Tuckernuck Shoal, off east end.....	41 24.3	70 10.4	+1 22	+1 34	+1 09	+1 10	0.5	0.5	0.3	000	0.9 113	0.3	186	0.9 287	

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS							
			Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood		Maximum before Ebb					
											knots	deg.	knots	deg.				
NANTUCKET SOUND Time meridian, 75°W																		
on POLLOCK RIP CHANNEL, p.28																		
1411	Brant Point, 2 miles NNW of <1>.....	41	19.25	70 06.30	- - -	+1 43	- - -	+2 36	0.2	0.2	0.0	- -	0.3	090	0.0	- -	0.3	275
1416	Nantucket Harbor entrance channel.....	41	18.4	70 06.0	+3 22	+1 55	+2 44	+3 58	0.6	0.9	0.0	- -	1.2	171	0.0	- -	1.5	350
1421	Eel Pt., Nantucket I. 2.5 miles NE of...	41	19.3	70 10.2	+1 13	+1 12	+1 02	+1 15	0.3	0.2	0.0	- -	0.6	094	0.0	- -	0.4	284
1426	Muskeget I., channel 1 mile northeast of...	41	21.0	70 17.1	+1 29	+0 45	+0 57	+0 56	0.6	0.9	0.0	- -	1.1	108	0.0	- -	1.5	295
1431	Muskeget Rock, 1.3 miles southwest of...	41	19.2	70 23.6	+1 10	+0 23	+0 57	+0 18	0.6	0.6	0.0	- -	1.3	024	0.0	- -	1.0	192
1436	Muskeget Channel.....	41	20.9	70 25.2	+1 40	+0 38	+1 29	+1 02	1.9	1.9	0.0	- -	3.8	021	0.0	- -	3.3	200
1441	Wasque Point, 2.0 miles southwest of....	41	19.90	70 29.25	+1 30	+1 04	+1 11	+0 32	0.6	0.6	0.0	- -	1.3	075	0.0	- -	1.2	280
								+1 15									0.9	280
								+1 53									1.1	280
1446	Long Shoal-Norton Shoal, between.....	41	24.50	70 20.00	+1 31	+1 12	+1 26	+1 13	0.7	0.6	0.0	- -	1.4	100	0.0	- -	1.1	260
1451	Cape Page Lt., 1.7 miles SSE of.....	41	24.0	70 25.6	+0 59	-0 07	+0 49	+0 48	0.8	0.7	0.0	- -	1.6	025	0.0	- -	1.3	215
1456	Cross Rip Channel.....	41	26.9	70 17.5	+1 48	+1 48	+1 55	+1 59	0.6	0.5	0.0	- -	1.3	091	0.0	- -	0.9	272
1461	Cape Page Lt., 3.2 miles northeast of...	41	27.5	70 24.0	+2 42	+2 03	+2 33	+2 37	0.8	0.7	0.0	- -	1.6	095	0.0	- -	1.2	300
1466	Broken Ground-Horseshoe Shoal, between..	41	33.0	70 17.1	+1 46	+1 55	+1 15	+1 20	0.5	0.5	0.2	000	1.1	107	0.1	224	0.9	276
1471	Point Gammon, 1.2 miles south of.....	41	35.3	70 15.4	+1 15	+1 03	+1 06	+1 02	0.5	0.6	0.0	- -	1.1	105	0.0	- -	1.0	260
1476	Nyannis Harbor, entrance off breakwater.	41	37.4	70 17.5	Current weak and variable													
1481	Lewis Bay entrance channel.....	41	37.9	70 16.4	+2 46	+0 53	+2 44	+4 22	0.5	0.8	0.0	- -	0.9	004	0.0	- -	1.3	184
1486	Cotuit Bay entrance (Bluff Point).....	41	36.6	70 25.8	+2 44	+2 33	+2 51	+3 35	0.3	0.4	0.0	- -	0.5	035	0.0	- -	0.7	218
1491	Wreck Shoal-Eldridge Shoal, between.....	41	32.0	70 25.7	+1 47	+1 32	+1 44	+1 45	0.8	0.8	0.0	- -	1.7	062	0.0	- -	1.4	245
1496	Hedge Fence Lighted Gong Buoy 22.....	41	28.3	70 29.0	+2 48	+2 34	+2 38	+2 44	0.7	0.7	0.0	- -	1.4	108	0.0	- -	1.2	268
1501	Cape Page Light, 1.4 miles west of.....	41	25.45	70 29.00	+2 13	+1 54	+1 26	+1 39	0.2	0.1	0.0	- -	0.3	095	0.0	- -	0.2	250
1506	Edgartown, Inner Harbor.....	41	23.4	70 30.5	+0 25	-1 04	+0 35	-0 20	0.6	0.6	0.0	- -	1.1	075	0.0	- -	1.1	270
								+1 08									0.5	265
								+1 58									0.7	260
1511	Katama Pt., 0.6 mi. NNW of, Katama B....	41	21.9	70 30.3	+0 12	-0 43	+0 20	-0 31	0.3	0.3	0.0	- -	0.6	325	0.0	- -	0.5	180
								+0 47									0.2	195
								+1 46									0.3	325
								+1 57									0.4	325
1516	East Chop-Squash Meadow, between.....	41	27.9	70 32.2	+2 07	+0 55	+1 43	+2 04	0.7	1.1	0.0	- -	1.4	131	0.0	- -	1.8	329
1521	East Chop, 1 mile north of.....	41	29.1	70 33.5	+2 40	+1 52	+2 17	+2 11	1.1	1.3	0.0	- -	2.2	116	0.0	- -	2.2	297
1526	Vineyard Haven.....	41	28.1	70 35.2	Current weak and variable													
1531	West Chop, 0.8 mile north of.....	41	29.6	70 35.7	+2 49	+1 58	+2 20	+2 35	1.6	1.8	0.0	- -	3.1	096	0.0	- -	3.0	282
1536	Cotuit Bay entrance.....	41	30.3	70 32.2	+2 27	+1 38	+2 01	+1 52	1.0	1.3	0.0	- -	2.1	106	0.0	- -	2.2	276
1541	Waquoit Bay entrance.....	41	32.9	70 31.8	+3 21	+2 14	+3 40	+4 01	0.8	0.8	0.0	- -	1.5	348	0.0	- -	1.4	203
1546	L'Hommedieu Shoal, north of west end....	41	31.6	70 34.6	+2 30	+2 03	+2 12	+2 11	1.2	1.4	0.0	- -	2.3	080	0.0	- -	2.3	268
1551	Nobska Point, 1.8 miles east of.....	41	31.1	70 37.1	+2 13	+1 45	+1 55	+1 49	1.2	1.0	0.0	- -	2.3	063	0.0	- -	1.7	240
VINEYARD SOUND																		
1556	West Chop, 0.2 mile west of.....	41	29.0	70 36.6	+1 19	+1 34	+1 50	+1 16	1.3	0.8	0.0	- -	2.7	059	0.0	- -	1.4	241
1561	Nobska Point, 1 mile southeast of.....	41	30.1	70 38.6	+2 33	+2 15	+2 25	+2 19	1.3	1.4	0.0	- -	2.6	071	0.0	- -	2.4	259
1566	Norton Point, 0.5 mile north of.....	41	28.1	70 39.9	+1 55	+1 44	+2 01	+1 12	1.7	1.4	0.0	- -	3.4	050	0.0	- -	2.4	240
1571	Tarpaulin Cove, 1.5 miles east of.....	41	28.3	70 43.5	+2 49	+2 07	+2 12	+2 33	1.0	1.4	0.0	- -	1.9	055	0.0	- -	2.3	232
1576	Robinsons Hole, 1.2 miles southeast of..	41	26.1	70 46.8	+2 30	+1 51	+2 11	+2 02	1.0	1.2	0.0	- -	1.9	060	0.0	- -	2.1	240
1581	Gay Head, 3 miles northeast of.....	41	23.1	70 47.0	+2 25	+1 50	+1 42	+2 11	0.5	0.8	0.0	- -	0.9	081	0.0	- -	1.3	238
1586	Menemsha Bight <6>.....	41	21.3	70 46.3														
1591	Gay Head, 3 miles north of.....	41	24.1	70 51.2	+2 13	+1 24	+1 55	+1 17	0.6	0.7	0.0	- -	1.1	074	0.0	- -	1.2	255

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS							
			Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb				
			°	'	h.	m.	h.	m.	h.	m.	knots	deg.	knots	deg.	knots	deg.	knots	deg.
VINEYARD SOUND Time meridian, 75°W					on POLLOCK RIP CHANNEL, p.28													
1596	Gay Head, 1.5 miles northwest of.....	41	21.8	70 51.8	+1 30	+0 54	+1 42	+1 16	1.0	1.2	0.0	--	2.0	012	0.0	--	2.0	249
1601	Cuttyhunk Island, 3.2 miles southwest of	41	23	71 00	See table 5.													
1606	Browns Ledge.....	41	19.8	71 05.9	See table 5.													
VINEYARD SOUND-BUZZARDS BAY					on CAPE COD CANAL, p.22													
Woods Hole																		
1611	South end.....	41	30.8	70 40.2	+0 29	+1 40	+1 17	+0 08	0.4	0.2	0.0	--	1.5	135	0.0	--	1.1	318
1616	0.1 mile SW of Devils Foot Island....	41	31.2	70 41.1	+0 20	+1 41	+0 55	+0 31	0.9	0.8	0.0	--	3.5	094	0.0	--	3.6	276
1621	North end.....	41	31.5	70 41.6	-0 29	+1 25	+1 09	-0 04	0.2	0.2	0.0	--	0.8	160	0.0	--	0.7	007
Robinsons Hole																		
1626	South end.....	41	26.7	70 48.2	+1 14	+1 42	+1 20	+1 01	0.2	0.2	0.0	--	0.8	162	0.0	--	1.0	339
1631	Middle.....	41	27.0	70 48.4	+1 30	+2 00	+1 02	+0 47	0.7	0.6	0.0	--	2.8	146	0.0	--	2.9	316
1636	North end.....	41	27.4	70 48.7	+1 54	+2 00	+0 52	+1 17	0.2	0.3	0.0	--	1.0	161	0.0	--	1.2	338
Quicks Hole																		
1641	South end.....	41	26.3	70 50.5	+2 18	+1 42	+1 17	+0 53	0.5	0.4	0.0	--	1.9	140	0.0	--	2.0	300
1646	Middle.....	41	26.6	70 50.9	+2 21	+2 00	+1 26	+0 41	0.6	0.5	0.0	--	2.5	167	0.0	--	2.2	339
1651	North end.....	41	27.1	70 51.0	+2 42	+2 06	+1 44	+0 23	0.5	0.6	0.0	--	2.0	165	0.0	--	2.6	002
1656	Canapitsit Channel.....	41	25.4	70 54.5	+2 03	+2 27	+1 02	+0 26	0.6	0.4	0.0	--	2.6	156	0.0	--	1.7	312
					on POLLOCK RIP CHANNEL, p.28													
1661	Westport River entrance.....	41	30.5	71 05.3	+0 09	-0 05	-0 26	-1 13	1.1	1.5	0.0	--	2.2	290	0.0	--	2.5	108
BUZZARDS BAY <7>																		
1666	Gooseberry Neck, 2 miles SSE of.....	41	27	71 01	See table 5.													
1671	Ribbon Reef-Sow & Pigs Reef, between....	41	25.3	70 58.2	-0 19	-1 31	-2 44	-1 54	0.4	0.7	0.0	--	0.8	062	0.0	--	1.2	237
1676	Penikese Island, 0.8 mile northwest of..	41	27.9	70 56.2	-1 37	-0 25	-0 55	-0 57	0.6	0.6	0.0	--	1.2	050	0.0	--	1.1	254
1681	Penikese Island, 0.2 mile south of.....	41	26.6	70 55.5	-1 43	-0 15	-1 30	-2 39	0.4	0.5	0.0	--	0.7	093	0.0	--	0.9	287
1686	Gull I. and Mashawena I., between.....	41	26.2	70 54.2	-2 15	-0 57	-2 01	-2 41	0.5	0.6	0.0	--	0.9	091	0.0	--	1.1	247
1691	Weepecket Island, south of.....	41	30.4	70 44.3	-3 16	-1 07	-1 28	-2 27	0.4	0.4	0.0	--	0.8	069	0.0	--	0.6	255
1696	Quamquisset Harbor entrance.....	41	32.4	70 39.8	Current weak and variable						0.0 -- 0.4 -- 0.0 -- 0.3 --							
1701	West Falmouth Harbor entrance.....	41	36.5	70 39.3	Current weak and variable													
1706	Megansett Harbor.....	41	38.8	70 39.2	Current weak and variable													
1711	Abiels Ledge, 0.4 mile south of.....	41	41.1	70 40.4	+0 26	-0 36	-0 06	-0 23	0.4	0.6	0.0	--	0.8	035	0.0	--	1.0	216
1716	Dumpling Rocks, 0.2 mile southeast of...	41	32.0	70 55.1	-1 43	-1 03	-1 32	-2 09	0.4	0.6	0.0	--	0.8	066	0.0	--	1.1	190
1721	Apponaganset Bay.....	41	35	70 57	Current weak and variable													
1726	Clarks Cove.....	41	36	70 55	Current weak and variable													
1731	New Bedford Harbor and approaches.....			Current weak and variable														
1736	West Island and Long Island, between....	41	35.6	70 50.4	Current weak and variable						0.0 -- 0.3 -- 0.0 -- 0.4 --							
1741	West Island, 1 mile southeast of.....	6	41	70 48.6	-0 43	-0 43	-1 28	-1 42	0.4	0.5	0.0	--	0.7	079	0.0	--	0.8	203
1746	Nasketucket Bay.....	41	37.1	70 50.2	Current weak and variable						0.0 -- 0.3 -- 0.0 -- 0.3 --							
1751	Mattapoissett Harbor.....	41	38	70 47	Current weak and variable													
1756	Sippican Harbor.....	41	41	70 44	Current weak and variable						0.0 -- 0.3 -- 0.0 -- 0.4 --							
1761	Wareham River, off Long Beach Point.....	41	44.0	70 43.0	-1 41	-0 31	-1 22	-1 23	0.3	0.4	0.0	--	0.6	022	0.0	--	0.6	202

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS							
			Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb				
															h. m.	h. m.	h. m.	h. m.
	BUZZARDS BAY <7> Time meridian, 75°W	ft	N	W	on POLLOCK RIP CHANNEL, p.28													
1766	Wareham River, off Barney's Point.....	41	44.7	70 42.4	-1 49	-0 27	-1 22	-1 31	0.4	0.4	0.0	--	0.7	010	0.0	--	0.6	185
					on CAPE COD CANAL, p.22													
1771	Onset Bay, south of Onset Island.....	41	43.9	70 38.7	Current weak and variable													
1776	Onset Bay, south of Wicket's Island.....	41	44.1	70 39.3	Current weak and variable													
	CAPE COD CANAL																	
					Daily predictions													
1781	CAPE COD CANAL, railroad bridge.....	41	44.5	70 36.8	-0 03	-0 01	-0 03	-0 04	0.8	0.9	0.0	--	4.0	070	0.0	--	4.5	250
1786	Bourne Highway bridge.....	41	45	70 35	-0 07	-0 03	-0 09	-0 10	0.8	0.8	0.0	--	3.3	065	0.0	--	4.0	245
1791	Bourne Dale.....	41	46	70 34	-0 09	-0 04	-0 11	-0 13	0.7	0.6	0.0	--	3.4	030	0.0	--	3.6	210
1796	Sagamore Bridge.....	41	46	70 33	-0 09	-0 04	-0 11	-0 13	0.7	0.6	0.0	--	2.8	095	0.0	--	2.5	275
1801	Cape Cod Canal, east end.....	15	41 46.5	70 30.0	-0 13	-0 06	-0 17	-0 19	0.6	0.6	0.0	--	2.4	065	0.0	--	2.6	245
	NARRAGANSETT BAY <8>																	
					on POLLOCK RIP CHANNEL, p.28													
					Current weak and variable													
1811	Sakonnet River (except Narrows).....	- - - -	- - - -	- - - -	-2 58	-5 02	-2 26	-3 06	1.4	1.6	0.0	--	2.7	010	0.0	--	2.7	190
1821	Tiverton, Stone bridge, Sakonnet R. <9>..	41	37.5	71 13.0	-2 54	-0 36	-	-	0.3	-	-	-	0.6	010	-	-	-	-
					-0 36	-	-	-	1.3	-	-	-	2.5	010	-	-	-	-
1831	Tiverton, RR. bridge, Sakonnet R. <10>..	41	38.3	71 12.9	-3 26	-5 06	-2 48	-3 41	1.2	1.4	0.0	--	2.3	000	0.0	--	2.4	180
					-3 04	-1 15	-	-	-	-	-	-	-	-	-	-	-	-
					-1 15	-	-	-	0.8	-	-	-	1.5	000	-	-	-	-
1841	Brenton Point, 1.4 n.mi. southwest of...	7	41 25.9	71 22.6	-1 03	-0 38	-1 20	-1 04	0.2	0.4	0.0	--	0.4	347	0.0	--	0.6	170
1851	Castle Hill, west of.....	7	41 27.8	71 22.2	-1 22	-3 00	-1 31	-1 31	0.5	0.8	0.0	--	1.0	000	0.0	--	1.4	210
1861	Bull Point, east of.....	10	41 28.8	71 21.0	-1 10	-0 47	-1 10	-1 33	0.6	0.8	0.0	--	1.2	001	0.0	--	1.5	206
1871	Mackerel Cove.....	41	28.5	71 22.8	Current weak and variable													
1881	Newport Harbor, S and E of Goat Island..	41	29	71 20	Current weak and variable													
1891	Rose Island, northeast of.....	41	30.2	71 20.0	-1 58	-1 29	-1 24	-1 38	0.4	0.6	0.0	--	0.8	340	0.0	--	1.1	166
1901	Rose Island, west of.....	41	29.8	71 21.0	-0 42	-0 34	-1 20	-1 28	0.4	0.6	0.0	--	0.7	001	0.0	--	1.0	172
1911	Gould Island, southeast of.....	7	41 31.5	71 20.2	-1 40	-1 28	-1 14	-1 16	0.3	0.4	0.0	--	0.5	033	0.0	--	0.7	217
1921	Dyer Island-Carrs Point (between).....	41	34.5	71 17.8	-1 56	-1 13	-0 50	-1 37	0.4	0.4	0.0	--	0.8	040	0.0	--	0.6	236
1931	Dyer Island, west of.....	7	41 35.2	71 18.5	-1 04	-0 46	-0 53	-1 34	0.4	0.6	0.0	--	0.8	023	0.0	--	1.0	216
1941	Bristol Harbor.....				Current weak and variable													
1951	Mount Hope Bridge.....	7	41 38.4	71 15.5	-1 22	-1 34	-1 08	-0 58	0.6	0.8	0.0	--	1.1	047	0.0	--	1.4	230
1961	Mount Hope Bay.....				Current weak and variable													
1971	Kickamuit R. (Narrows), Mt. Hope Bay....	41	41.9	71 14.7	-2 04	-3 34	-1 19	-0 48	0.7	1.0	0.0	--	1.4	000	0.0	--	1.7	191
					-1 40	-0 04	-	-	0.5	-	-	-	0.9	000	-	-	-	-
					-0 04	-	-	-	0.9	-	-	-	1.7	000	-	-	-	-
1981	Beavertail Point, 0.8 mile northwest of.	41	27.5	71 24.7	-0 11	-0 54	-1 31	-0 19	0.3	0.6	0.0	--	0.5	003	0.0	--	1.0	188
1991	Dutch Island and Beaver Head, between...	41	29.8	71 24.2	-1 56	-1 32	-1 58	-1 47	0.5	0.6	0.0	--	1.0	030	0.0	--	1.0	233
2001	Dutch Island, west of.....	7	41 30.3	71 24.6	-1 33	-1 49	-1 21	-1 16	0.7	0.7	0.0	--	1.3	014	0.0	--	1.2	206
2011	Wickford Harbor.....	41	34	71 26	Current weak and variable								0.3	--		--	0.3	--
2021	Prudence Island, west of.....	- - - -	- - - -	- - - -	Current weak and variable													
2031	Greenwich Bay entrance.....	41	40.0	71 23.6	Current weak and variable								0.3	--		--	0.4	--

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS								
			Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb					
															°	'	h.	m.	h.
			NARRAGANSETT BAY <8> Time meridian, 75°W		on POLLOCK RIP CHANNEL, p.28														
2041	Patience Island, narrows east of.....	41	39.5	71 21.2	-2 41	-2 29	-2 44	-2 37	0.4	0.5	0.0	--	0.7	354	0.0	--	0.9	157	
2051	Patience I. and Warwick Neck, between...	41	39.8	71 22.4	-1 40	-1 21	-1 18	-1 13	0.3	0.5	0.0	--	0.6	040	0.0	--	0.8	224	
2061	Warren River entrance.....	41	42.7	71 17.8	Current weak and variable				0.0	--	0.4	020	0.0	--	0.3	200			
2071	Warren, Warren River.....	41	43.7	71 17.3	-0 14	+0 11	-0 22	-1 05	0.5	0.5	0.0	--	1.0	358	0.0	--	0.9	171	
2081	Hog Island to Providence.....	--	--	--	Current weak and variable														
2091	India Point RR. Bridge, Seekonk R. <9>..	41	49.0	71 23.3	-1 48	-4 02	-1 31	-1 06	0.5	0.8	0.0	--	1.0	020	0.0	--	1.4	180	
						-2 30			0.2				0.4	020					
						-0 12			0.7				1.3	020					
2101	Cold Spring Pt., Seekonk River <10>.....	41	49.6	71 22.8	-1 48	-4 14	-1 31	-1 02	0.4	0.8	0.0	--	0.8	030	0.0	--	1.4	210	
						-2 24			0.1				0.2	030					
						-0 26			0.6				1.1	030					
			BLOCK ISLAND SOUND		on THE RACE, p.34														
			Point Judith																
2106	Harbor of Refuge, south entrance.....	41	21.48	71 29.75	-2 23	-2 52	-2 26	-3 59	0.2	0.2	0.0	--	0.6	329	0.0	--	0.8	141	
								-2 41		0.1							0.4	141	
								-1 56		0.2							0.7	141	
2111	Harbor of Refuge, west entrance.....	41	22	71 31	See table 5.														
2116	Pond entrance.....	41	23	71 31	-3 23	-3 01	-3 16	-3 52	0.6	0.4	0.0	--	1.8	351	0.0	--	1.5	186	
2121	2.4 miles southwest of.....	41	19.87	71 30.65	-0 48	-0 01	+0 18	-0 24	0.2	0.2	0.0	--	0.7	258	0.0	--	0.6	090	
2126	4.5 miles southwest of.....	41	18	71 33	See table 5.														
			Block Island																
2131	four miles north of.....	41	18	71 32	-0 30	+0 03	+0 35	+0 21	0.2	0.2	0.0	--	0.8	285	0.0	--	0.8	076	
2136	Sandy Point, 2.1 miles NNE of.....	15	41 15.85	71 34.00	+0 09	-0 53	-0 30	-0 43	0.4	0.5	0.0	--	1.0	296	0.0	--	1.7	066	
2141	Sandy Pt., 1.5 miles north of.....	7	41 15	71 34	-0 22	-0 30	-1 03	-0 50	0.6	0.5	0.0	--	1.9	315	0.0	--	2.1	063	
2146	Clay Head, 1.2 miles ENE of.....	15	41 13.35	71 31.85	-2 20	-1 32	-0 37	-0 55	0.2	0.1	0.5	220	0.7	298	0.0	--	0.5	164	
2151	Old Harbor Pt., 0.5 mile southeast of	41	09	71 32	-0 10	-0 29	-0 34	+0 09	0.1	0.1	0.0	--	0.2	336	0.0	--	0.6	175	
2156	Lewis Pt., 1.0 mile southwest of.....	41	08.20	71 37.30	-1 37	-1 08	-0 34	-1 13	0.7	0.5	0.0	--	1.9	298	0.0	--	1.8	136	
2161	Lewis Pt., 1.5 miles west of.....	41	09	71 38	-1 31	-1 15	-0 44	-0 57	0.4	0.4	0.0	--	1.4	318	0.0	--	1.7	170	
2166	Great Salt Pond entrance.....	41	11.97	71 35.50	-4 18	-3 35	-3 34	-4 22	0.1	0.1	0.0	--	0.3	165	0.0	--	0.3	326	
2171	Great Salt Pond ent., 1 mile NW of...	7	41 12	71 36	-0 52	-0 58	-1 50	-0 32	0.1	0.1	0.0	--	0.4	158	0.0	--	0.4	035	
2176	Sandy Point, 0.4 mile west of <11>...	41	13.80	71 35.13	--	-1 24	--	-1 35	--	0.2	0.0	--	--	--	0.0	--	0.7	011	
2181	Green Hill Point, 1.1 miles south of....	41	20.90	71 35.77	-1 06	-0 47	-0 34	-0 55	0.2	0.1	0.0	--	0.6	258	0.0	--	0.4	070	
2186	Sandy Point, 4.1 miles northwest of....	15	41 17.10	71 38.00	-0 04	+0 11	+0 22	+0 04	0.2	0.2	0.0	--	0.7	270	0.0	--	0.6	084	
2191	Grace Point, 2.0 miles northwest of....	41	12	71 38	See table 5.														
2196	Quonochontaug Beach, 1.1 miles S of....	41	18.80	71 42.82	-0 52	+0 06	+0 37	-0 20	0.4	0.1	0.0	--	1.1	248	0.0	--	0.4	078	
2201	Quonochontaug Beach, 3.8 miles S of....	15	41 16.35	71 43.00	-0 05	-0 06	+0 29	+0 08	0.2	0.2	0.0	--	0.7	243	0.0	--	0.6	058	
2206	Lewis Point, 6.0 miles MNW of.....	15	41 11.60	71 44.20	+0 51	+0 40	+0 06	+0 35	0.2	0.3	0.0	--	0.6	286	0.0	--	1.2	097	
2211	Southwest Ledge.....	41	07	71 42	-0 33	-0 33	-0 10	-0 08	0.5	0.5	0.0	--	1.5	321	0.0	--	2.1	141	
2216	Southwest Ledge, 2.0 miles west of....	15	41 06.80	71 43.00	+0 02	+0 10	+0 01	-0 41	0.5	0.5	0.0	--	1.5	354	0.0	--	1.9	168	
2221	Watch Hill Point, 2.2 miles east of....	41	18.16	71 48.60	-0 37	-0 08	+0 35	-0 21	0.4	0.2	0.0	--	1.2	260	0.0	--	0.7	086	
2226	Watch Hill Point, 5.2 miles SSE of....	15	41 13.20	71 49.00	+0 26	+0 18	+0 29	+0 12	0.4	0.3	0.0	--	1.2	265	0.0	--	1.2	064	
2231	Montauk Point, 5.4 miles NNE of.....	15	41 09.55	71 49.48	+0 25	-0 03	-0 47	+0 08	0.4	0.5	0.0	--	1.1	279	0.0	--	1.6	079	
2236	Montauk Point, 1.2 miles east of.....	41	04.50	71 49.80	-1 30	-1 09	-0 48	-1 53	1.0	0.8	0.0	--	2.8	346	0.0	--	2.8	162	
2241	Montauk Point, 1 mile northeast of.....	41	05	71 51	-2 02	-1 29	-1 10	-1 41	0.7	0.4	0.0	--	2.4	356	0.0	--	1.9	145	

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS										
			Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood		Maximum Flood								
											knots deg.	knots deg.	knots deg.	knots deg.							
					on THE RACE, p.34																
BLOCK ISLAND SOUND Time meridian, 75°W																					
2246	Micopesset Island, 1.1 miles SSE of.....		41 16.50	71 54.80	-1 02	-0 10	+0 39	-0 07	0.5	0.2	0.0	--	1.5	250	0.0	--	0.8	073			
2251	East Pt., Fishers I., 4.1 miles S of....	15	41 13.40	71 55.50	+0 42	+0 32	+0 09	+0 12	0.3	0.5	0.0	--	0.9	236	0.0	--	1.8	073			
2256	Cerberus Shoal, 1.5 miles east of.....	15	41 10.45	71 55.17	-0 23	-0 15	-0 33	-0 52	0.4	0.5	0.0	--	1.1	256	0.0	--	1.8	092			
2261	Shagwong Reef & Cerberus Shoal, between.		41 07.90	71 55.50	-0 38	-0 47	-0 35	-0 57	0.6	0.5	0.0	--	1.9	241	0.0	--	1.8	056			
2266	Montauk Harbor entrance.....	6	41 04.78	71 56.35	-2 25	-2 47	-3 12	-4 49	0.4	0.2	0.0	--	1.2	226	0.0	--	0.6	033			
								-2 32		0.1								0.2	024		
								-0 44		0.2									0.5	353	
2271	Mt. Prospect, 0.6 mile SSE of.....	15	41 14.75	71 59.80	-0 42	-0 06	0 00	-0 59	0.6	0.5	0.0	--	1.7	275	0.0	--	1.6	054			
2276	Cerberus Shoal and Fishers I., between..	7	41 13	71 58	-0 57	-0 05	+0 11	-0 06	0.4	0.3	0.0	--	1.3	264	0.0	--	1.3	096			
2281	Little Gull Island, 3.7 miles ESE of....		41 10.7	72 02.1	See table 5.																
2286	Gardiners Island, 3 miles northeast of..	10	41 07.9	72 02.0	-0 45	-0 56	-0 21	-0 26	0.3	0.2	0.0	--	0.9	305	0.0	--	1.0	138			
2291	Eastern Plain Point, 1.2 miles N of.....		41 07.12	72 04.85	-2 53	-1 51	-1 18	-2 23	0.3	0.2	0.0	--	1.0	290	0.0	--	0.8	110			
2296	Eastern Plain Pt., 3.9 miles ENE of.....		41 07.05	71 59.80	-1 09	-1 26	-0 32	-1 01	0.3	0.3	0.0	--	1.0	246	0.0	--	1.0	096			
2301	Little Gull Island, 0.8 mile SSE of <51>		41 11.67	72 06.23	-2 18	-0 50	-0 33	-3 02	0.4	0.2	0.0	--	1.3	331	0.0	--	0.6	105			
								-1 54		0.0									0.1	252	
								-0 32		0.2										0.6	174
2306	Rocky Point, 2 miles MNW of.....	15	41 03.55	72 01.80	-1 30	-1 01	-0 59	-0 59	0.1	0.1	0.1	192	0.3	255	0.2	340	0.3	065			
GARDINERS BAY, etc.																					
2311	Goff Point, 0.4 mile northwest of.....		41 01.49	72 03.75	-1 54	-2 25	-1 35	-2 31	0.4	0.5	0.0	--	1.2	225	0.0	--	1.6	010			
2316	Acabonack Hbr. ent., 0.6 mile ESE of....		41 01.30	72 07.40	-1 42	-2 10	-1 15	-2 30	0.5	0.3	0.0	--	1.4	345	0.0	--	1.2	140			
2321	Hog Creek Point, north of.....		41 04.10	72 09.70	-1 04	-0 49	-1 31	-1 52	0.1	0.1	0.0	--	0.3	281	0.0	--	0.3	067			
2326	Ram Island, 2.2 miles east of.....		41 04.70	72 13.80	-0 27	-0 24	-0 24	-0 12	0.1	0.1	0.0	--	0.2	250	0.0	--	0.3	090			
2331	Orient Point, 2.4 miles SSE of.....		41 07.50	72 12.30	+0 11	-0 34	+1 01	-0 31	0.1	0.1	0.0	--	0.4	250	0.0	--	0.3	025			
2336	Gardiners Pt. Ruins, 1.1 miles N of.....		41 09.50	72 08.83	-0 20	-0 17	-0 19	+0 04	0.4	0.5	0.0	--	1.2	270	0.0	--	1.8	066			
2341	Gardiners Point & Plum Island, between..	15	41 09.33	72 09.52	-0 26	-0 31	-0 42	-0 30	0.5	0.5	0.0	--	1.4	288	0.0	--	1.6	100			
2346	Ram Island, 1.4 miles NNE of.....		41 05.8	72 15.8	-0 07	-0 02	-0 03	+0 17	0.1	0.2	0.0	--	0.4	240	0.0	--	0.6	075			
2351	Long Beach Pt., 0.7 mile southwest of...	15	41 06.25	72 18.40	+0 25	-0 11	+0 34	0 00	0.5	0.5	0.0	--	1.3	307	0.0	--	1.8	101			
2356	Hay Beach Point, 0.3 mile NW of <52>....		41 06.65	72 70.43	+0 12	+0 20	+0 51	-0 51	0.5	0.3	0.0	--	1.5	210	0.0	--	1.2	025			
								+0 38		0.2									0.6	025	
								+1 35		0.2										0.8	020
2361	Jennings Point, 0.2 mile NNW of.....	13	41 04.48	72 22.95	+0 24	+0 09	+0 27	+0 03	0.6	0.4	0.0	--	1.6	290	0.0	--	1.5	055			
2366	Cedar Point, 0.2 mile west of.....		41 02.38	72 16.07	-0 19	-0 16	+0 19	-0 41	0.6	0.5	0.0	--	1.8	195	0.0	--	1.6	005			
2371	North Haven Peninsula, north of.....		41 02.47	72 19.25	+0 04	-0 30	+0 29	-0 34	0.8	0.6	0.0	--	2.4	230	0.0	--	2.1	035			
2376	Paradise Point, 0.4 mile east of.....	13	41 02.88	72 22.57	+0 18	+0 03	+0 35	+0 06	0.5	0.4	0.0	--	1.5	145	0.0	--	1.5	345			
2381	Little Peconic Bay entrance.....	19	41 01.58	72 23.08	+0 27	+0 01	+0 43	+0 21	0.6	0.4	0.0	--	1.6	240	0.0	--	1.5	015			
2386	Robins Island, 0.5 mile south of.....		40 56.98	72 27.18	+0 24	-0 12	+0 46	+0 35	0.6	0.2	0.0	--	1.7	245	0.0	--	0.6	065			
								-1 31		0.1										0.2	243
								-0 07		0.2										0.5	234
FISHERS ISLAND SOUND																					
2391	Edwards Pt. and Sandy Pt., between.....	4	41 19.90	71 53.88	-2 34	-3 17	-2 25	-3 41	0.4	0.3	0.0	--	1.1	035	0.0	--	1.0	227			
2396	Napatree Point, 0.7 mile southwest of...		41 17.92	71 54.00	-0 56	-1 07	-0 57	-1 18	0.6	0.6	0.0	--	1.7	284	0.0	--	2.2	113			
2401	Little Narragansett Bay entrance.....		41 20	71 53	-1 56	-1 59	-2 09	-2 35	0.4	0.3	0.0	--	1.3	092	0.0	--	1.3	268			

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS							
			Lat.	Long.	Min. before Flood		Min. before Ebb		Flood	Ebb	Minimum before Flood.	Maximum Flood	Minimum before Ebb	Maximum Ebb				
					h. m.	h. m.	h. m.	h. m.										
			ft	° ' "	° ' "	on THE RACE, p.34												
				N	W													
FISHERS ISLAND SOUND Time meridian, 75°W																		
2406	Avondale, Pawcatuck River <51>.....	6	41 19.90	71 50.73	-1 56	-2 42	-2 17	-3 40	0.2	0.2	0.0	--	0.6	058	0.0	--	0.5	265
																	0.1	243
																	0.2	263
2411	Ram Island Reef, south of.....	7	41 18.1	71 58.5	-0 52	-0 47	-0 41	-0 50	0.4	0.4	0.0	--	1.3	255	0.0	--	1.6	088
2416	Moank <51>.....	4	41 19.12	71 59.30	-1 36	-3 16	-4 10	-4 30	0.2	0.1	0.0	--	0.5	340	0.0	--	0.3	173
																	0.0	--
																	0.5	162
2421	Mystic, Highway Bridge, Mystic River....	6	41 21.25	71 58.18	-2 02	-2 50	-2 07	-3 39	0.2	0.1	0.0	--	0.5	039	0.0	--	0.4	231
																	0.2	234
																	0.3	232
2426	Clay Point, 1.3 miles NNE of.....	15	41 17.88	71 58.53	-0 42	-0 49	-0 40	-1 15	0.5	0.5	0.0	--	1.4	264	0.0	--	1.9	035
2431	North Hill Point, 1.1 miles NNW of.....	41	17.57	72 01.68	-1 05	-0 26	-0 18	-1 37	0.5	0.4	0.0	--	1.5	258	0.0	--	1.2	082
LONG ISLAND SOUND																		
The Race																		
2436	Race Point, 0.4 mile southwest of....	41	14.70	72 02.60	-0 24	-0 35	-0 43	-0 44	0.9	1.0	0.0	--	2.6	288	0.0	--	3.5	135
2441	THE RACE, near Valiant Rock.....	41	14.20	72 03.60	Daily predictions				0.0	--	2.9	295	0.0	--	3.5	100		
2446	0.5 mile NE of Little Gull Island....	41	13	72 06	-0 30	-0 14	-0 11	-0 26	1.0	0.7	0.0	--	3.3	002	0.0	--	3.1	107
2451	Little Gull I., 1.1 miles ENE of....	41	13.10	72 05.10	-0 07	-0 11	+0 01	-0 45	1.4	1.3	0.0	--	4.0	301	0.0	--	4.7	130
2456	Great Gull Island, 0.7 mile WSW of.....	41	11.67	72 08.02	-0 51	-0 33	-0 31	-1 42	0.9	0.9	0.0	--	2.6	299	0.0	--	3.2	133
2461	Plum Gut.....	41	10.00	72 12.80	-1 22	-1 30	-1 01	-2 05	1.2	1.2	0.0	--	3.5	323	0.0	--	4.3	126
2466	Eastern Point, 1.5 miles south of.....	41	17.8	72 04.4	-1 57	-1 50	-1 03	-1 50	0.1	0.1	0.0	--	0.4	249	0.0	--	0.4	055
2471	New London Harbor entrance.....	41	19.08	72 05.02	-1 22	-1 51	-2 12	-1 15	0.1	0.1	0.0	--	0.1	348	0.0	--	0.2	211
Thames River																		
2476	Winthrop Point.....	41	21.63	72 05.30	-1 17	-1 59	-0 54	-2 35	0.1	0.1	0.0	--	0.4	012	0.0	--	0.4	180
																	0.2	186
																	0.3	185
2481	Off Smith Cove.....	5	41 23.98	72 05.18	-1 18	-2 20	-1 29	-1 54	0.2	0.1	0.0	--	0.7	019	0.0	--	0.5	199
																	0.2	202
																	0.6	198
2486	Off Stoddard Hill.....	15	41 27.65	72 04.12	-1 17	-2 23	-0 40	-2 29	0.2	0.1	0.0	--	0.7	332	0.0	--	0.4	164
																	0.2	165
																	0.5	161
2491	Lower Coal Dock.....	15	41 30.88	72 04.72	Current weak and variable				0.4	0.5	0.0	--	1.2	285	0.0	--	1.6	062
2496	Goshen Point, 1.9 miles SSE of.....	15	41 16.00	72 06.30	-1 05	-1 00	-1 03	-1 49	0.7	0.8	0.0	--	1.9	258	0.0	--	2.9	043
2501	Little Gull Island, 0.8 mile NNW of....	15	41 13.10	72 06.93	+0 17	-1 19	-2 29	-0 46	0.3	0.3	0.0	--	1.4	255	0.0	--	1.3	090
2506	Bartlett Reef, 0.2 mile south of.....	11	41 17.87	72 08.47	-1 06	-1 27	-0 43	-1 42	0.4	0.4	0.0	--	1.2	267	0.0	--	1.6	099
2511	Twotree Island Channel.....	5	41 19.40	72 10.62	-0 53	-1 03	-0 53	-0 40	0.6	0.2	0.0	--	1.6	352	0.0	--	0.8	178
2516	Niantic (Railroad Bridge).....	15	41 16.40	72 12.50	-0 50	-1 11	-0 25	-1 10	0.4	0.4	0.0	--	1.2	260	0.0	--	1.4	073
2521	Black Point, 0.8 mile south of.....	15	41 14.00	72 12.30	+0 25	+0 04	+0 29	+0 26	0.7	0.7	0.0	--	2.1	236	0.0	--	2.4	076
2526	Black Point and Plum Island, between....	15	41 11.87	72 11.92	+0 04	-0 16	-1 13	-0 41	0.6	0.7	0.0	--	1.7	247	0.0	--	2.4	065
2531	Plum Island, 0.8 mile NNW of.....	15	41 12.57	72 49.83	-0 13	-0 14	-0 09	-0 18	0.3	0.2	0.0	--	0.8	272	0.0	--	0.7	068
2536	Branford Reef, 1.5 miles southwest of...	15	41 08.65	72 49.67	-0 01	+0 09	+0 11	+0 03	0.2	0.2	0.0	--	0.7	260	0.0	--	0.8	074
2541	Branford Reef, 5.0 miles south of.....	41	16.35	72 16.92	-2 37	-1 11	-0 52	-2 37	0.4	0.3	0.0	--	1.3	240	0.0	--	1.2	045
2546	Hatchett Point, 1.1 miles WSW of.....																	

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS							
			Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood		Maximum before Ebb					
											h. m.	h. m.	h. m.	h. m.	knots deg.	knots deg.	knots deg.	knots deg.
	LONG ISLAND SOUND Time meridian, 75°W		° N	° W	on THE RACE, p.34													
	Connecticut River																	
2551	Lynde Point, channel east of.....		41 16	72 20	+0 42	+0 50	+0 18	+0 29	0.3	0.2	0.0	--	0.9	344	0.0	--	0.7	161
2556	Saybrook Point, 0.2 mile northeast of.....		41 17.02	72 20.87	+0 35	+0 51	+0 47	+0 30	0.5	0.4	0.0	--	1.5	355	0.0	--	1.5	160
2561	Railroad drawbridge.....	15	41 19.00	72 20.77	+0 27	-0 26	+0 54	+1 06	0.4	0.3	0.0	--	1.0	360	0.0	--	1.0	198
					+0 35				0.2				0.6	359				
					+1 31				0.3				0.9	356				
2566	Eustasia Island, 0.6 mile ESE of.....		41 23.30	72 24.23	+1 53	+1 38	+1 23	+1 26	0.4	0.4	0.0	--	1.1	290	0.0	--	1.4	070
2571	Eddy Rock Shoal, west of.....	15	41 26.57	72 27.78	+1 41	+2 16	+2 01	+1 20	0.3	0.2	0.0	--	0.8	350	0.0	--	0.6	155
2576	Higganum Creek, 0.5 mile ESE of.....		41 30.02	72 32.62	+3 06	+2 52	+2 35	+3 01	0.3	0.3	0.0	--	0.8	270	0.0	--	1.0	080
2581	Wilcox Island Park, east of.....		41 34.33	72 38.88	+4 06	+3 36	+3 07	+3 35	0.3	0.3	0.0	--	0.9	355	0.0	--	1.0	160
2586	Rocky Hill.....	9	41 39.82	72 37.73	+4 41	+3 37	+3 21	+3 30	0.2	0.2	0.0	--	0.6	335	0.0	--	0.8	135
2591	Hartford Jetty <42>.....	9	41 45.07	72 39.02	+5 45	+4 39	+3 22	+4 29	0.0	0.2	0.0	--	0.1	290	0.0	--	0.7	095
2596	Saybrook Breakwater, 1.5 miles SE of....		41 14.78	72 19.05	-1 30	-1 11	-0 55	-1 57	0.7	0.6	0.0	--	1.9	260	0.0	--	2.0	070
2601	Mulford Point, 3.1 miles northwest of...	15	41 12.00	72 19.08	-0 06	-1 05	-0 05	-0 24	0.7	0.6	0.0	--	1.9	269	0.0	--	2.3	066
2606	Orient Point, 1 mile WNW of.....		41 10.02	72 15.11	-1 09	-2 02	-0 33	-1 15	0.5	0.9	0.0	--	1.4	245	0.0	--	3.1	055
					-0 59				0.3				0.8	255				
					-0 09				0.7				2.1	245				
2611	Rocky Point, 0.3 mile north of.....	15	41 08.63	72 21.42	-0 27	-1 02	-1 01	-0 28	0.6	0.6	0.0	--	1.8	279	0.0	--	2.1	041
2616	Cornfield Point, 3 miles south of.....	7	41 12.9	72 22.4	-0 56	-0 17	-0 03	-0 20	0.6	0.4	0.0	--	2.0	256	0.0	--	1.7	094
2621	Cornfield Point, 1.1 miles south of.....	15	41 14.65	72 23.40	-1 01	-1 34	-1 02	-2 03	0.5	0.5	0.0	--	1.4	293	0.0	--	1.6	108
2626	Kesley Point, 2.1 miles southeast of....		41 14.10	72 27.93	-0 35	-1 02	-0 54	-1 00	0.5	0.5	0.0	--	1.5	260	0.0	--	1.8	070
2631	Six Mile Reef, 1.5 miles north of.....		41 12.66	72 28.87	-0 17	-0 12	-0 23	-0 41	0.3	0.4	0.0	--	1.0	290	0.0	--	1.3	095
2636	Six Mile Reef, 2 miles east of.....		41 10.83	72 26.90	-0 36	-0 12	-0 07	-0 35	0.6	0.6	0.0	--	1.6	235	0.0	--	2.1	040
2641	Horton Point, 1.4 miles NNW of.....		41 06.30	72 27.40	+0 04	+0 08	-0 03	-0 18	0.5	0.6	0.0	--	1.4	260	0.0	--	2.0	040
2646	Kelsey Point, 1 mile south of.....		41 14	72 30	-1 32	-1 00	-1 03	-1 51	0.6	0.3	0.0	--	2.0	249	0.0	--	1.5	118
2651	Hammonasset Point, 1.2 miles SW of.....	15	41 14.22	72 34.00	-0 59	-1 15	-0 44	-1 31	0.3	0.3	0.0	--	1.0	287	0.0	--	1.0	106
2656	Hammonasset Point, 5 miles south of....	15	41 09.80	72 34.17	-0 03	-0 03	-0 24	-0 06	0.5	0.4	0.0	--	1.4	284	0.0	--	1.5	090
2661	Mattituck Inlet, 1 mile northwest of....	15	41 01.68	72 34.22	-0 21	-0 15	-0 08	-0 26	0.3	0.3	0.0	--	0.9	241	0.0	--	1.0	053
2666	Sachem Head, 1 mile SSE of.....		41 13.65	72 42.30	-0 38	-0 36	-0 35	-1 02	0.4	0.3	0.0	--	1.1	255	0.0	--	1.0	065
2671	Sachem Head 6.2 miles south of.....	15	41 08.73	72 42.30	+0 29	+0 24	-0 12	-0 04	0.2	0.3	0.0	--	0.6	260	0.0	--	0.9	065
2676	Roanoke Point, 5.6 miles north of.....	15	41 04.37	72 42.53	-0 02	-0 02	-0 15	-0 24	0.2	0.3	0.0	--	0.7	255	0.0	--	0.9	050
2681	Roanoke Point, 2.3 miles NNW of.....		41 00.92	72 42.97	-1 19	-0 22	-0 10	-0 29	0.3	0.2	0.0	--	0.9	270	0.0	--	0.7	070
2686	Sachem Head, 1 mile south of.....		41 14	72 43	-0 46	+0 03	-0 33	-0 38	0.3	0.3	0.0	--	0.9	278	0.0	--	1.2	084
2691	Herod Point, 2.8 miles north of.....	15	41 00.97	72 49.93	-0 29	-0 17	-0 27	-0 06	0.2	0.2	0.1	020	0.4	290	0.1	020	0.6	090
2696	Herod Point, 6.5 miles north of.....	15	41 04.65	72 49.80	-0 27	+0 06	+0 12	-0 07	0.3	0.2	0.0	--	0.9	254	0.0	--	0.7	070
2701	New Haven Harbor entrance <12>.....		41 14	72 55	-1 11	-1 34	-0 37	-1 15	0.4	0.2	0.0	--	1.4	319	0.0	--	0.9	152
2706	City Point, 1.3 miles northeast of.....		41 17.83	72 54.42	+0 11	+0 30	+0 33	+0 08	0.1	0.1	0.0	--	0.3	015	0.0	--	0.4	215
2711	Oyster River Pt., 1.3 miles SSE of <1>..		41 12.87	72 58.00	--	-0 15	--	-0 47	0.1	0.1	0.0	--	0.3	255	0.0	--	0.3	060
2716	Pond Point, 4.2 miles SSE of.....		41 08.60	72 58.08	-0 20	+0 04	-0 04	-0 14	0.2	0.2	0.0	--	0.6	265	0.0	--	0.6	065
2721	Stratford Shoal, 6 miles east of.....		41 04.52	72 58.43	+0 01	-0 02	-0 07	-0 09	0.2	0.2	0.0	--	0.6	265	0.0	--	0.6	060
2726	Sound Beach, 2.2 miles north of.....		41 00.33	72 58.45	-0 03	-0 06	-0 15	-0 25	0.3	0.3	0.0	--	0.9	270	0.0	--	0.9	075
2731	Charles Island, 0.8 mile SSE of.....		41 10.77	73 02.63	-0 51	-0 36	-0 30	-0 54	0.1	0.1	0.0	--	0.4	250	0.0	--	0.4	070
	Housatonic River																	
2736	Milford Point, 0.2 mile west of.....	10	41 10.35	73 06.82	-0 06	+0 01	+0 15	-0 55	0.4	0.3	0.0	--	1.2	330	0.0	--	1.2	135
2741	Railroad drawbridge, above.....	5	41 12.53	73 06.67	+0 34	+0 13	+0 29	-0 55	0.4	0.4	0.0	--	1.1	350	0.0	--	1.3	185
2746	Fowler Island, 0.1 mile NNW of.....	5	41 14.40	73 06.23	+0 48	+0 10	+0 30	+0 48	0.4	0.3	0.0	--	1.1	040	0.0	--	1.1	270

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS			
			Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb
			° N	° W	h. m.	h. m.	h. m.	h. m.			knots deg.	knots deg.	knots deg.	knots deg.
	LONG ISLAND SOUND Time meridian, 75°W	ft			on THE RACE, p.34									
2751	Housatonic River													
	Wooster Island, 0.1 mile southwest of	5	41 16.67	73 05.20	+1 19	+0 33	+0 20	+0 22	0.2 0.2	0.0 --	0.6 020	0.0 --	0.7 220	
2756	Derby-Shelton Bridge, below <13>.....		41 18.73	73 04.78	- - -	- - -	- - -	-0 06	- - 0.1	0.0 --	- - -	0.0 --	0.4 095	
2761	Point No Point, 2.1 miles south of.....	15	41 06.75	73 07.13	-0 30	-0 06	-0 08	-0 01	0.4 0.3	0.0 --	1.3 251	0.0 --	1.2 074	
2766	Old Field Point, 1 mile east of.....	15	40 58.47	73 05.80	+3 26	+2 31	+2 25	+1 56	0.1 0.2	0.0 --	0.2 105	0.0 --	0.6 308	
	.....do.....	22	40 58.47	73 05.80	+2 30	+1 54	+2 17	+1 44	0.1 0.2	0.0 --	0.2 110	0.0 --	0.5 297
2771	Old Field Point, 2 miles northeast of... .....do.....	15 40	41 00.23 41 00.23	73 05.70 73 05.70	+0 33 +0 22	+0 13 +0 08	-0 11 -0 12	+0 58 +0 41	0.3 0.3 0.2 0.2	0.0 --	1.0 266 0.5 236	0.0 --	1.1 092 0.6 081	
2776	Stratford Point, 4.3 miles south of..... .....do.....	15 60	41 04.77 41 04.77	73 06.67 73 06.67	+0 12 -0 36	+0 19 -0 09	+0 05 -0 23	+0 14 +0 15	0.3 0.3 0.2 0.2	0.0 --	1.0 254 0.6 291	0.0 --	1.0 075 0.8 078	
2781	Stratford Point, 6.1 miles south of..... .....do.....	15 51	41 02.97 41 02.97	73 05.80 73 05.80	-0 18 -0 43	+0 03 -0 31	+0 16 -0 34	+0 30 -0 12	0.3 0.2 0.3 0.2	0.0 --	1.0 267 0.9 279	0.0 --	0.8 080 0.9 087	
2786	Port Jefferson Harbor entrance.....		40 58	73 06	+0 11	+0 40	+0 32	+0 14	0.8 0.4	0.0 --	2.6 151	0.0 --	1.9 323	
2791	Crane Neck Point, 0.5 mile northwest of.		40 58	73 10	-0 45	-1 24	-1 38	-1 34	0.4 0.3	0.0 --	1.3 256	0.0 --	1.5 016	
2796	Bridgeport Hbr. ent., btn. jetties <14>.	4	41 09	73 11	-0 10	-0 22	+0 05	-0 03	0.2 0.1	0.0 --	0.7 340	0.0 --	0.6 176	
2801	Crane Neck Point, 3.4 miles WNW of.....	15	40 59.00	73 13.87	-0 12	+0 02	-0 25	+0 09	0.2 0.2	0.0 --	0.5 261	0.0 --	0.6 079	
2806	Crane Neck Point, 3.7 miles WSW of.....	15	40 56.30	73 13.87	-1 32	-0 31	-0 24	-0 18	0.1 0.1	0.0 --	0.4 066	0.0 --	0.4 232	
2811	Shoal Point, 6 miles south of.....	15	41 01.70	73 14.03	+0 22	+0 28	+0 42	+0 55	0.1 0.1	0.0 --	0.4 232	0.0 --	0.4 047	
2816	Pine Creek Point, 2.3 miles SSE of.....	15	41 05.05	73 14.40	-0 20	+0 06	+0 21	+0 23	0.2 0.2	0.0 --	0.7 272	0.0 --	0.6 084	
2821	Saugatuck River, 0.3 mi. NW of Bluff Pt.	15	41 06.27	73 21.92	-0 12	-0 41	+0 20	+0 10	0.2 0.1	0.0 --	0.5 265	0.0 --	0.4 080	
2826	Saugatuck R., 0.5 mile above Bluff Pt....		41 06	73 23	Current weak and variable									
2831	Sheffield I. Tower, 1.1 miles SE of..... .....do.....	15 60	41 01.97 41 01.97	73 24.33 73 24.33	+0 33 -0 27	+0 39 +0 24	+0 59 +1 00	+0 33 +0 36	0.3 0.2 0.2 0.2	0.0 --	0.9 283 0.6 269	0.0 --	0.8 081 0.5 076	
2836	Sheffield I. Hbr., 0.5 mile southeast of	12	41 03.32	73 25.25	-2 41	-3 54	-3 36	-2 12	0.1 0.1	0.0 --	0.2 229	0.0 --	0.4 042	
2841	Norwalk River, off Gregory Point.....	15	41 05.20	73 24.22	-0 12	-0 21	+0 29	+0 30	0.2 0.2	0.0 --	0.6 322	0.0 --	0.5 155	
2846	Eaton's Neck Pt., 1.3 miles north of....	15	40 58.60	73 23.77	+0 21	+0 21	+0 05	+0 21	0.5 0.4	0.0 --	1.4 283	0.0 --	1.4 075	
2851	Eaton's Neck Pt., 1.8 miles west of.....		40 57	73 26	-1 09	-1 01	-0 28	-0 29	0.2 0.1	0.0 --	0.5 199	0.0 --	0.6 068	
2856	Eaton's Neck Pt., 3 miles north of..... .....do..... .....do.....	15 40 170	41 00.38 41 00.38 41 00.38	73 23.80 73 23.80 73 23.80	+0 40 +0 17 -0 38	+0 30 +0 13 -0 22	+0 36 +0 26 +1 26	+0 17 +0 28 +0 44	0.2 0.3 0.2 0.2 0.2 0.1	0.0 --	0.7 253 0.6 264 0.6 188	0.0 --	0.9 046 0.6 078 0.5 054	
2861	Huntington Bay, off East Fort Point..... .....do.....	15 30	40 55.60 40 55.60	73 25.05 73 25.05	-0 06 -0 54	+0 14 +0 10	+0 14 +0 05	+0 51 -0 16	0.2 0.1 0.1 0.1	0.0 --	0.5 190 0.4 179	0.0 --	0.5 014 0.3 007	
2866	Northport Bay entrance (in channel)....	15	40 54.53	73 24.45	-0 11	+0 14	+0 12	+0 30	0.1 0.1	0.0 --	0.4 100	0.0 --	0.4 267	
2871	Northport Bay, south of Duck I. Bluff...		40 55	73 23	+0 31	+0 54	+0 12	-0 05	0.1 0.1	0.0 --	0.4 007	0.0 --	0.3 286	
2876	Long Neck Point, 0.6 mile south of..... .....do.....	15 27	41 01.58 41 01.58	73 28.68 73 28.68	-1 20 -1 05	-0 05 -0 08	+1 14 +1 12	+0 11 +0 09	0.3 0.1 0.3 0.1	0.0 --	0.8 252 0.8 257	0.0 --	0.5 073 0.5 080	
2881	Lloyd Point, 1.3 miles NNW of..... .....do.....	15 40	40 57.95 40 57.95	73 29.70 73 29.70	+1 16 -0 08	+0 54 +0 13	+1 20 +1 07	+1 05 +0 37	0.3 0.3 0.3 0.2	0.0 --	1.0 255 1.0 269	0.0 --	0.9 055 0.7 053	
2886	Shippan Point, 1.3 miles SSE of..... .....do.....	15 40	40 59.90 40 59.98	73 31.00 73 31.03	+0 28 +0 10	+0 07 +0 11	+0 13 +0 46	+0 16 -0 10	0.3 0.3 0.2 0.2	0.0 --	0.9 239 0.7 247	0.0 --	0.9 055 0.8 071	
2891	Oyster Bay													
	Rocky Point, 1 mile east of.....	15	40 55.15	73 30.03	+0 11	+0 20	+0 14	+0 42	0.2 0.2	0.0 --	0.6 117	0.0 --	0.5 306	
2896	Harbor ent., south of Plum Point.....		40 54	73 31	-0 04	+0 07	+0 04	+0 04	0.2 0.2	0.0 --	0.7 244	0.0 --	0.7 054	
2901	Harbor, west of Soper Point.....		40 53	73 32	+0 26	+0 28	+0 01	+0 26	0.2 0.1	0.0 --	0.6 333	0.0 --	0.4 140	
2906	Cold Spring Harbor.....		40 53	73 29	Current weak and variable									
2911	Stamford Harbor entrance.....	12	41 00.88	73 32.20	-1 30	-1 17	-2 07	-0 22	0.1 0.2	0.0 --	0.4 329	0.0 --	0.8 134	

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS								
			Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb					
															h. m.	h. m.	h. m.	h. m.	knots deg.
LONG ISLAND SOUND Time meridian, 75°W																			
on THE RACE, p.34																			
2916	Greenwich Point, 1.1 miles south of.....	15	40 59.02	73 34.02	+1 13	+1 03	+1 39	+1 13	0.2	0.2	0.0	--	0.7	258	0.0	--	0.8	073	
	...do.....	55	40 59.02	73 34.02	+1 16	+0 56	+0 41	+1 15	0.2	0.1	0.0	--	0.6	265	0.0	--	0.4	069	
2921	Greenwich Point, 2.5 miles south of.....	15	40 57.60	73 33.68	+0 39	+0 15	+0 47	+0 41	0.2	0.2	0.0	--	0.7	242	0.0	--	0.7	052	
	...do.....	55	40 57.60	73 33.68	-1 15	+0 01	-0 37	-0 05	0.2	0.1	0.0	--	0.5	256	0.0	--	0.4	079	
2926	Oak Neck Point, 0.6 mile north of.....	15	40 55.50	73 34.02	+2 43	+2 03	+2 15	+2 23	0.2	0.2	0.0	--	0.5	260	0.0	--	0.6	072	
	...do.....	30	40 55.50	73 34.02	+0 46	+1 40	+1 31	+2 03	0.2	0.1	0.0	--	0.5	300	0.0	--	0.5	090	
2931	Captain Hbr. Ent., 0.6 mile southwest of	15	40 59.65	73 35.67	+1 24	+1 49	+1 39	+2 12	0.2	0.2	0.0	--	0.6	312	0.0	--	0.7	118	
	...do.....	30	40 59.65	73 35.67	+1 14	+1 19	+0 48	+2 10	0.2	0.2	0.0	--	0.5	319	0.0	--	0.7	142	
2936	Cos Cob Harbor, off Goose Island.....	41	01	73 36	+0 13	-0 07	+0 04	-0 40	0.2	0.1	0.0	--	0.5	013	0.0	--	0.4	188	
2941	Penigo Neck, 0.6 mi. off Parsonage Pt..	15	40 56.32	73 40.50	+1 01	+0 28	+1 06	+0 39	0.2	0.2	0.0	--	0.7	226	0.0	--	0.7	035	
2946	Matinecock Point, 0.7 mile NNW of.....	15	40 54.80	73 38.40	+1 06	+0 32	+1 24	+0 48	0.2	0.2	0.0	--	0.6	233	0.0	--	0.6	046	
	...do.....	40	40 54.80	73 38.40	+0 27	+0 12	+1 23	+0 32	0.2	0.1	0.0	--	0.7	262	0.0	--	0.5	053	
2951	Matinecock Point, 1.7 miles northwest of	15	40 55.48	73 39.37	+1 12	+1 04	+0 57	+1 14	0.1	0.1	0.0	--	0.4	234	0.0	--	0.4	055	
2956	Hempstead Harbor, 0.3 mile north of.....	15	40 51.72	73 40.47	Current weak and variable														
2961	Hempstead Harbor, 0.5 mile east of.....	15	40 51.50	73 39.98	--	+0 05	--	-0 19	0.1	--	0.0	--	0.3	157	0.0	--	0.1	331	
2966	Old Town Wharf, 0.5 mile north of.....	5	40 48.78	73 39.08	--	-0 22	--	--	0.1	--	0.0	--	0.4	196	0.0	--	--	--	
2971	Hempstead Harbor, off Glenwood Landing..	10	40 49.68	73 39.00	-0 46	-0 05	-0 07	-0 47	0.3	0.2	0.0	--	0.9	138	0.0	--	0.7	320	
2976	Delancey Point, 1 mile southeast of.....	15	40 55.00	73 42.73	+0 37	+0 14	+1 04	+0 07	0.2	0.1	0.0	--	0.5	244	0.0	--	0.4	059	
	...do.....	33	40 55.00	73 42.73	--	+0 11	+0 59	-0 27	0.1	0.1	0.0	--	0.4	239	0.0	--	0.3	069	
2981	Mamaroneck Harbor.....	40	56	73 43	Current weak and variable														
2986	Echo Bay entrance.....	40	54	73 46	Current weak and variable														
on THROGS NECK, p.40																			
2991	Dauids Island, channel 0.1 mile east of.		40 53	73 46	Current weak and variable														
2996	Huckleberry Island, 0.2 mile NW of.....	15	40 53.43	73 45.43	-3 15	-4 07	-3 42	-3 53	0.4	0.3	0.0	--	0.2	069	0.0	--	0.2	234	
3001	Huckleberry Island, 0.6 mile SE of.....	15	40 52.80	73 44.75	-2 25	-0 24	-2 14	-2 37	0.6	0.4	0.0	--	0.4	025	0.0	--	0.3	226	
3006	Execution Rocks, 0.4 mile southwest of..	15	40 52.40	73 44.00	-2 38	-3 03	-2 48	-2 51	1.0	0.5	0.0	--	0.6	058	0.0	--	0.4	246	
3011	Manhasset Bay entrance.....	15	40 49.75	73 43.78	+2 58	+2 27	+2 27	+2 51	0.6	0.4	0.0	--	0.4	115	0.0	--	0.3	307	
3016	Hart Island, 0.2 mile north of.....	15	40 51.82	73 46.27	-2 23	-3 55	-4 17	-3 23	0.3	0.3	0.0	--	0.2	098	0.0	--	0.3	264	
								-0 48										0.1	283
								-0 36										0.2	283
3021	Hart Island, southeast of.....	15	40 50.62	73 45.77	-1 44	-0 07	-1 32	-0 18	0.9	0.5	0.0	--	0.6	032	0.0	--	0.4	216	
3026	Hart Island and City Island, between....	15	40 51.37	73 46.73	-1 48	-2 51	-2 19	-2 40	0.4	0.3	0.0	--	0.2	349	0.0	--	0.2	143	
								-2 39						0.2	348			--	--
								-0 28						0.4	349			0.3	150
3031	City Island Bridge.....	10	40 51.47	73 47.60	-2 59	-4 52	-4 27	-4 26	0.3	0.6	0.0	--	0.2	352	0.0	--	0.5	198	
								-2 30						--	--			--	--
								-1 10						0.1	327			0.2	196
3036	Eastchester Bay, near Big Tom.....	5	40 50.20	73 47.72	-3 05	-3 51	-4 07	-3 27	0.5	0.5	0.0	--	0.3	097	0.0	--	0.4	294	
3041	Hutchinson R., Pelham Highway Bridge....	5	40 51.70	73 49.00	+2 41	+2 37	+1 51	+2 00	1.4	0.6	0.0	--	0.8	305	0.0	--	0.4	078	
3046	City Island, 0.6 mile southeast of.....	15	40 49.72	73 46.47	-1 17	-0 45	-2 59	-3 40	0.8	0.6	0.0	--	0.5	038	0.0	--	0.4	251	
								-2 19										0.2	233
								-0 15										0.5	233

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS			
			Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb
LONG ISLAND SOUND Time meridian, 75°W														
on THROGS NECK, p.40														
3051	Elm Point, 0.2 mile west of.....	15	40 48.92	73 46.02	-1 33	-3 16	-1 48	-0 26	0.3 0.7	0.0 --	0.2 026	0.0 --	0.6 213	
						-2 49			0.2		0.1 028			
						-0 09			1.0		0.6 024			
3056	Throgs Neck, 0.4 mile south of.....	15	40 47.90	73 47.45	+0 36	+0 18	+0 20	+0 06	1.3 0.8	0.0 --	0.8 090	0.0 --	0.6 278	
3061	THROGS NECK, 0.2 mile south of.....	15	40 48.12	73 47.48	Daily predictions					0.0 --	0.6 090	0.0 --	0.8 289	
EAST RIVER on HELL GATE, p.46														
3066	Cryders Point, 0.4 mile NNW of.....	40	48.02	73 47.92	-0 29	-0 43	-0 30	-1 00	0.4 0.2	0.0 --	1.3 110	0.0 --	1.1 285	
3071	Old Ferry Point.....	40	48	73 50	-1 23	-0 37	-0 02	-0 38	0.5 0.3	0.0 --	1.7 076	0.0 --	1.5 240	
3076	Clason Point, 0.2 mile SSW of.....	40	48.04	73 51.07	-0 22	-0 46	0 00	-0 32	0.5 0.3	0.0 --	1.8 070	0.0 --	1.5 250	
3081	Flushing Creek entrance.....	40	45.9	73 50.7	Current weak and variable									
3086	Rikers I. chan., off La Guardia Field..	40	47	73 53	+0 04	-0 04	+0 04	-0 08	0.3 0.3	0.0 --	1.1 088	0.0 --	1.3 261	
3091	Bronx River (1 mile north of Hunts Pt.)	40	48.9	73 52.5	Current weak and variable									
3096	Hunts Point, southwest of.....	40	48	73 53	+0 01	-0 10	+0 01	-0 05	0.5 0.3	0.0 --	1.7 108	0.0 --	1.3 280	
3101	N. Brother I. & S. Brother I., between..	40	47.9	73 54.0	+0 10	+0 06	+0 20	-0 01	0.7 0.4	0.0 --	2.5 066	0.0 --	1.8 253	
3106	Port Morris, channel off of.....	40	47.94	73 54.36	-0 07	-0 32	+0 20	+0 03	0.4 0.4	0.0 --	1.5 045	0.0 --	1.7 220	
3111	Off Winthrop Ave., Astoria.....	40	47.2	73 55.0	+0 04	+0 02	-0 01	-0 11	1.0 0.5	0.0 --	3.4 040	0.0 --	2.5 220	
3116	Mill Rock, northeast of.....	40	46.9	73 56.2	-0 23	+0 05	-0 29	-0 32	0.7 0.1	0.0 --	2.3 103	0.0 --	0.6 288	
3121	Mill Rock, west of.....	40	46.8	73 56.5	-0 26	+0 08	-0 02	-0 17	0.4 0.2	0.0 --	1.2 000	0.0 --	1.0 180	
3126	HELL GATE (off Mill Rock).....	40	46.7	73 56.3	Daily predictions					0.0 --	3.4 050	0.0 --	4.6 230	
Roosevelt Island														
3131	west of, off 75th Street.....	40	46	73 57	-0 02	-0 04	-0 08	+0 07	1.1 1.0	0.0 --	3.8 037	0.0 --	4.7 215	
3136	east of, off 36th Avenue.....	40	46	73 57	-0 08	-0 04	-0 08	-0 11	1.0 0.7	0.0 --	3.5 030	0.0 --	3.4 210	
3141	west of, off 67th Street.....	40	45.74	73 57.24	+0 13	-0 08	+0 06	+0 11	1.1 0.9	0.0 --	3.6 011	0.0 --	4.0 230	
3146	west of, off 63rd Street.....	40	45.58	73 57.27	-0 10	-0 08	0 00	+0 03	0.8 0.6	0.0 --	2.8 036	0.0 --	2.9 223	
3151	east of.....	40	45.49	73 57.08	0 00	-0 06	+0 02	+0 07	0.8 0.6	0.0 --	2.8 028	0.0 --	2.6 200	
3156	Manhattan, off 31st Street.....	40	44.38	73 58.17	+0 09	-0 11	-0 02	+0 36	0.4 0.5	0.0 --	1.5 000	0.0 --	2.1 175	
3161	Newtown Creek entrance.....	40	44	73 57	Current weak and variable									
3166	Pier 67, off 19th Street.....	40	44	73 58	-0 08	+0 08	-0 08	+0 07	0.5 0.4	0.0 --	1.8 355	0.0 --	1.9 179	
3171	Williamsburg Bridge, 0.3 mile north of..	40	43.08	73 58.24	-0 05	+0 12	-0 01	+0 10	0.8 0.6	0.0 --	2.7 020	0.0 --	2.9 220	
3176	Corlears Hook, south of, midstream <15>.	40	42.5	73 58.6	-0 12	+0 01	-0 09	-0 01	0.9 0.7	0.0 --	3.0 058	0.0 --	3.0 233	
3181	Brooklyn Bridge, 0.1 mile southwest of..	40	42.2	74 00.0	-0 18	+0 08	-0 04	-0 07	0.9 0.8	0.0 --	2.9 046	0.0 --	3.5 222	
3186	Governors I., N of (SEE CAUTION NOTE)...	40	41.8	74 01.0	-0 16	+0 16	-0 20	+0 17	0.4 0.4	0.0 --	1.2 094	0.0 --	1.7 269	
3191	Buttermilk Channel.....	40	41.15	74 00.81	-0 12	-0 18	-0 06	+0 18	0.5 0.5	0.0 --	1.8 050	0.0 --	2.4 220	
HARLEM RIVER														
3196	East 105th Street.....	40	47	73 56	-0 20	+0 08	-0 02	-0 17	0.4 0.2	0.0 --	1.2 035	0.0 --	1.0 215	
3201	East 117th Street (midchannel) <16>.....	40	47.6	73 55.8	-1 16	+0 10			0.4 --	0.0 --	1.3 197		-- --	
3206	Willis Ave. Bridge, 0.1 mile NW of.....	40	48.3	73 55.8	-0 30	0 00	-0 12	-0 13	0.4 0.3	0.0 --	1.2 140	0.0 --	1.3 330	
3211	Madison Ave. Bridge.....	40	48.8	73 56.1	-0 20	+0 18	-0 21	-0 14	0.5 0.4	0.0 --	1.8 180	0.0 --	1.7 000	
3216	Macombs Dam Bridge.....	40	49.7	73 56.1	-0 20	+0 14	-0 22	-0 11	0.5 0.3	0.0 --	1.7 180	0.0 --	1.4 000	
3221	High Bridge.....	40	50.5	73 55.9	-0 20	+0 08	-0 23	-0 08	0.6 0.4	0.0 --	2.0 189	0.0 --	2.0 015	
3226	West 207th Street Bridge.....	40	51.8	73 54.9	-0 22	+0 05	-0 22	-0 02	0.6 0.4	0.0 --	2.0 215	0.0 --	2.0 035	
3231	Broadway Bridge.....	40	52.4	73 54.7	-0 23	+0 08	-0 20	+0 04	0.6 0.5	0.0 --	2.1 116	0.0 --	2.3 299	

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS				
			Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb	
															h.
	HARLEM RIVER Time meridian, 75°W	ft	N	W	on HELL GATE, p.46										
3236	Spuyten Duyvil Creek entrance.....	40	52.68	73 55.46	-0 10	+0 12	-0 10	+0 17	0.4	0.3	0.0	--	1.4 100	0.0 --	1.5 285
	LONG ISLAND, South Coast				on THE NARROWS, p.52										
3241	Fire Island Lighted Whistle Bouy 2FI....	40	29	73 11	See table 5.										
3246	Fire Island Inlet, 22 miles S of <17>...	40	16	73 16	See table 5.										
3251	Shinnecock Canal, railroad bridge <18>...	40	53.2	72 30.1				-0 38	--	0.8	--	--	--	--	1.5 180
3256	Ponquogue bridge, Shinnecock Bay.....	40	50.7	72 30.1	+0 54	+0 35	+0 27	+0 37	0.5	0.3	0.0	--	0.8 250	0.0 --	0.6 090
3261	Shinnecock Inlet.....	40	50.6	72 28.7	-0 06	-0 21	-0 30	-1 03	1.5	1.2	0.0	--	2.5 350	0.0 --	2.3 170
3266	Fire I. Inlet, 0.5 mi. S of Oak Beach...	40	37.78	73 18.40	-0 03	-0 01	+0 29	-0 01	1.4	1.2	0.0	--	2.4 082	0.0 --	2.4 244
3271	Jones Inlet.....	40	35.5	73 34.0	-1 15	-0 49	-0 48	-1 05	1.8	1.3	0.0	--	3.1 035	0.0 --	2.6 217
3276	Long Beach, inside, between bridges.....	40	35.7	73 39.6	-0 54	+0 23	+0 32	0 00	0.3	0.3	0.0	--	0.5 076	0.0 --	0.6 277
3281	East Rockaway Inlet.....	40	35.4	73 45.3	-1 46	-1 35	-1 03	-1 38	1.3	1.2	0.0	--	2.2 042	0.0 --	2.3 227
3286	Ambrose Light.....	40	27	73 49	See table 5.										
3291	Sandy Hook App. Lighted Horn Bouy 2A....	40	27	73 55	See table 5.										
	JAMAICA BAY														
3296	Rockaway Inlet.....	40	33.7	73 56.1	-1 55	-2 20	-1 33	-2 11	1.1	1.3	0.0	--	1.8 085	0.0 --	2.7 244
3301	Barren Island, east of.....	40	35	73 53	-1 59	-2 28	-2 03	-2 19	0.7	0.9	0.0	--	1.2 004	0.0 --	1.7 192
3306	Canarsie (midchannel, off pier).....	40	37.6	73 53.0	-1 54	-1 38	-1 18	-2 06	0.3	0.4	0.0	--	0.5 045	0.0 --	0.7 222
3311	Beach Channel (bridge).....	40	35	73 49	-1 48	-1 13	-0 57	-1 25	1.1	1.0	0.0	--	1.9 062	0.0 --	2.0 225
3316	Grass Haddock Channel.....	40	36.6	73 47.1	-1 21	-1 02	-0 57	-0 54	0.6	0.5	0.0	--	1.0 052	0.0 --	1.0 228
	NEW YORK HARBOR ENTRANCE														
	Ambrose Channel														
3326	Entrance.....	40	30.4	73 58.4	-1 20	-1 30	-1 03	-0 38	1.0	1.2	0.0	--	1.7 310	0.0 --	2.3 110
3336	East of West Bank Light <19>.....	40	31.9	74 01.5	-0 04	-1 01	-0 53	+0 15	0.8	0.9	0.9	270	1.3 310	0.5 045	1.8 170
3346	Coney Island Lt., 1.6 miles SSW of.....	40	33.04	74 01.4	+0 01	-0 48	-0 24	+0 56	0.5	0.8	0.0	--	0.8 330	0.0 --	1.5 145
3356	Ambrose Channel, north end.....	40	33.8	74 01.6	+0 15	-0 10	-0 09	+0 42	0.8	0.9	0.0	--	1.3 332	0.0 --	1.9 176
3366	Coney Island, 0.2 mile west of.....	40	34.6	74 01.1	-0 49	-1 43	-0 57	-0 07	0.9	1.0	0.0	--	1.5 329	0.0 --	2.0 170
3376	Ft. Lafayette, channel east of.....	40	36.5	74 02.2	-2 13	-0 06	+0 04	-1 50	0.6	0.5	0.0	--	1.1 343	0.0 --	0.9 194
3386	THE NARROWS, midchannel.....	40	36.6	74 02.8	Daily predictions						0.0	--	1.7 340	0.0 --	2.0 160
	NEW YORK HARBOR, Upper Bay														
3396	Tompkinsville.....	40	38.1	74 03.6	-0 29	+0 20	+0 08	+0 20	0.9	1.0	0.0	--	1.6 004	0.0 --	2.0 172
3406	Bay Bridge Channel.....	40	39.0	74 02.0	-0 27	-0 50	-0 42	-0 36	0.6	0.6	0.0	--	1.0 039	0.0 --	1.1 218
3416	Red Hook Channel.....	40	40.0	74 01.2	-1 03	-0 44	-0 08	-0 30	0.6	0.4	0.0	--	1.0 353	0.0 --	0.7 170
3426	Robbins Reef Light, east of.....	40	39.45	74 03.48	+0 16	+0 16	+0 02	+0 24	0.8	0.8	0.0	--	1.3 016	0.0 --	1.6 204
3436	Red Hook, 1 mile west of.....	40	40.5	74 02.5	+0 41	+1 06	+0 47	+0 52	0.8	1.2	0.0	--	1.3 024	0.0 --	2.3 206
3446	Statue of Liberty, east of.....	40	41.4	74 01.8	+0 57	+0 58	+0 56	+0 59	0.8	1.0	0.0	--	1.4 031	0.0 --	1.9 205

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS						
			Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb			
			° ' N	° ' W	h. m.	h. m.	h. m.	h. m.			knots deg.	knots deg.	knots deg.	knots deg.			
HUDSON RIVER, Midchannel <20> Time meridian, 75°W		ft			on THE NARROWS, p.52												
3456	The Battery, northwest of.....	40 43	74 02	+1 41	+1 26	+1 21	+1 46	0.9	1.2	0.0	--	1.5	015	0.0	--	2.3	194
3466	Desbrosses Street.....	40 43	74 01	+1 43	+1 30	+1 24	+1 52	0.9	1.2	0.0	--	1.5	010	0.0	--	2.3	--
3476	Chelsea Docks.....	40 45	74 01	+1 27	+1 42	+1 32	+1 38	1.0	1.0	0.0	--	1.7	018	0.0	--	2.0	187
3486	Forty-second Street.....	40 46	74 00	+1 51	+1 41	+1 34	+2 00	1.0	1.2	0.0	--	1.7	030	0.0	--	2.3	--
3496	Ninety-sixth Street.....	40 48	73 59	+1 57	+1 48	+1 42	+2 07	1.0	1.2	0.0	--	1.7	030	0.0	--	2.3	--
3506	Grants Tomb, 123d Street.....	40 49	73 58	+1 59	+1 53	+1 45	+2 10	0.9	1.2	0.0	--	1.6	025	0.0	--	2.3	--
3516	George Washington Bridge.....	40 51	73 57	+1 41	+1 55	+1 50	+2 08	0.9	1.1	0.0	--	1.6	020	0.0	--	2.2	200
3526	Spuyten Duyvil.....	40 53	73 56	+2 11	+2 08	+1 57	+2 24	0.9	1.1	0.0	--	1.6	020	0.0	--	2.1	--
3536	Riverdale.....	40 54	73 55	+2 11	+2 07	+2 02	+2 32	0.8	1.0	0.0	--	1.4	015	0.0	--	2.0	200
3546	Dobbs Ferry.....	41 01	73 53	+2 30	+2 33	+2 24	+2 49	0.8	0.9	0.0	--	1.3	010	0.0	--	1.7	--
3556	Tarrytown.....	41 05	73 53	+2 37	+2 46	+2 40	+3 02	0.6	0.8	0.0	--	1.1	000	0.0	--	1.5	--
3566	Ossining.....	41 10	73 54	+2 50	+3 02	+3 05	+3 19	0.5	0.7	0.0	--	0.9	320	0.0	--	1.3	--
3576	Haverstraw.....	41 12	73 57	+2 55	+3 08	+3 13	+3 26	0.5	0.7	0.0	--	0.8	335	0.0	--	1.3	--
3586	Peekskill.....	41 17	73 57	+3 10	+3 24	+3 33	+3 42	0.5	0.6	0.0	--	0.8	000	0.0	--	1.2	--
3596	Bear Mountain Bridge.....	41 19	73 59	+3 16	+3 31	+3 39	+3 48	0.5	0.6	0.0	--	0.8	000	0.0	--	1.1	--
3606	Highland Falls.....	41 22	73 58	+3 24	+3 37	+3 44	+4 02	0.6	0.6	0.0	--	1.0	005	0.0	--	1.2	185
3616	West Point, off Duck Island.....	41 24	73 57	+3 32	+3 47	+3 51	+4 04	0.5	0.6	0.0	--	1.0	010	0.0	--	1.1	--
3626	Newburgh.....	41 30	74 00	+3 50	+4 06	+4 03	+4 21	0.5	0.6	0.0	--	0.9	005	0.0	--	1.1	--
3636	New Hamburg.....	41 35	73 57	+4 05	+4 20	+4 11	+4 33	0.6	0.6	0.0	--	1.0	005	0.0	--	1.1	--
3646	Poughkeepsie.....	41 42	73 57	+4 26	+4 37	+4 21	+4 49	0.6	0.6	0.0	--	1.1	005	0.0	--	1.2	--
3656	Hyde Park.....	41 47	73 57	+4 42	+4 48	+4 30	+5 00	0.7	0.7	0.0	--	1.2	005	0.0	--	1.3	--
3666	Kingston Point <21>.....	41 56	73 57	+5 09	+5 09	+4 54	+5 19	0.8	0.8	0.0	--	1.3	005	0.0	--	1.6	--
3676	Barrytown.....	42 00	73 56	+5 26	+5 21	+5 10	+5 26	0.8	0.9	0.0	--	1.4	010	0.0	--	1.7	--
3686	Saugerties.....	42 04	73 56	+5 43	+5 42	+5 29	+5 36	0.9	1.0	0.0	--	1.5	000	0.0	--	1.9	--
3696	Silver Point.....	42 09	73 54	+6 01	+6 14	+5 49	+5 50	0.9	1.0	0.0	--	1.5	030	0.0	--	2.0	--
3706	Catskill.....	42 13	73 51	+6 16	+6 37	+6 09	+6 06	0.9	1.0	0.0	--	1.6	355	0.0	--	2.0	--
3716	Hudson.....	42 15	73 48	+6 23	+6 45	+6 20	+6 15	0.9	1.0	0.0	--	1.6	030	0.0	--	2.0	--
3726	Coxsackie.....	42 21	73 47	+6 45	+6 57	+6 55	+6 44	0.9	0.9	0.0	--	1.6	350	0.0	--	1.8	--
3736	New Baltimore.....	42 27	73 47	+7 12	+7 04	+7 13	+7 09	0.8	0.8	0.0	--	1.3	355	0.0	--	1.5	--
3746	Castleton-on-Hudson.....	42 32	73 46	+7 35	+7 11	+7 12	+7 29	0.5	0.6	0.0	--	0.9	015	0.0	--	1.2	--
3756	Albany.....	42 39	73 45	+8 29	+7 32	+6 46	+7 47	0.2	0.4	0.0	--	0.3	020	0.0	--	0.8	--
3766	Troy (below the locks) <22>.....	42 44	73 42	--	--	--	--	--	--	--	--	--	--	--	--	0.7	190
NEW YORK HARBOR, Lower Bay																	
3776	False Hook Channel.....	40 28.4	74 00.0	-2 07	-1 36	-1 22	-1 28	1.1	0.7	0.0	--	1.8	320	0.0	--	1.4	135
3786	Sandy Hook, 1.7 miles ENE of north tip..	40 29.7	73 59.0	-1 48	-1 38	-1 06	-1 48	0.9	0.8	0.0	--	1.5	295	0.0	--	1.7	100
3796	Sandy Hook & South Channels, junction...	40 28.9	73 59.6	-1 28	-1 24	-1 13	-1 16	0.8	0.8	0.0	--	1.3	300	0.0	--	1.7	113
3806	Sandy Hook Chan., 0.4 mi. W of north tip	40 28.79	74 01.30	-1 51	-1 55	-1 30	-1 50	1.2	0.8	0.0	--	2.0	235	0.0	--	1.6	050
3816	Sandy Hook Pt., 2 mi. W of (channel)....	40 28.8	74 03.6	-1 45	-2 00	-1 50	-1 42	0.4	0.3	0.0	--	0.6	263	0.0	--	0.6	086
3826	Chapel Hill South Channel.....	40 29.90	74 02.8	-2 12	-2 30	-1 40	-2 08	0.4	0.3	0.0	--	0.7	255	0.0	--	0.6	075
3836	New Dorp Beach, 1.2 miles south of.....	40 32.4	74 05.8	-4 19	-3 36	-4 35	-4 16	0.2	0.2	0.0	--	0.4	225	0.0	--	0.5	030
3846	Old Orchard Shoal Lt., 1.2 mi. ENE of...	40 31.1	74 04.36	-2 19	-2 07	-1 23	-2 02	0.4	0.2	0.0	--	0.7	270	0.0	--	0.4	085
3856	New Dorp Beach, 1.8 miles SE of <23>....	40 32.9	74 03.7	--	--	--	--	0.3	0.3	--	--	0.5	045	--	--	0.5	225
3866	Midland Beach, 2.6 miles SE of <24>....	40 32.8	74 02.35	0 00	+0 07	0 00	+0 01	0.5	0.6	0.2	270	0.8	335	0.2	068	1.3	160
3876	Coney Island Lt., 1.5 miles SSE of.....	40 33.1	74 00.3	-1 27	-1 56	-0 58	-0 53	0.6	0.6	0.0	--	1.1	310	0.0	--	1.3	125

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS						
			Lat.	Long.	Min. before Flood		Min. before Ebb		Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb			
					h. m.	h. m.	h. m.	h. m.									
	DELAWARE BAY and RIVER Time meridian, 75°W	ft	° ' N	° ' W	on DELAWARE BAY ENTRANCE, p. 58						knots deg.	knots deg.	knots deg.	knots deg.			
4206	Ben Davis Point, 0.8 mile southwest of..	39 16.9	75 18.2	+0 56	+0 59	+1 21	+1 00	0.7	0.4	0.0	--	1.2	308	0.0	--	0.8	122
4211	Cohansey River, 0.5 mile above entrance.	39 20.9	75 21.6	+1 29	+1 21	+1 39	+1 28	0.7	0.7	0.0	--	1.2	074	0.0	--	1.4	254
4216	Bridgeton (Broad Street Bridge) <1>....	39 25.6	75 14.2	--	+2 28	--	+2 31	0.1	0.2	0.0	--	0.2	000	0.0	--	0.3	180
4221	Arnold Point, channel abreast of.....	39 22.5	75 27.8	+2 25	+2 18	+2 03	+2 26	1.1	1.1	0.0	--	2.0	336	0.0	--	2.1	156
4226	Smyrna River entrance.....	39 21.9	75 30.8	+1 48	+1 42	+2 05	+2 07	0.7	0.8	0.0	--	1.2	250	0.0	--	1.5	070
4231	Stony Point, channel west of.....	39 27.1	75 33.8	+3 23	+2 50	+2 38	+3 06	0.8	1.0	0.0	--	1.5	324	0.0	--	1.9	151
4236	Appoquinimink River entrance.....	39 26.8	75 34.9	+2 33	+2 55	+2 22	+2 34	0.6	0.6	0.0	--	1.0	231	0.0	--	1.2	048
4241	Reedy Island (off end of pier).....	39 30.7	75 33.4	+3 01	+3 01	+2 54	+3 23	1.3	1.4	0.0	--	2.4	027	0.0	--	2.6	194
4246	Alloway Creek ent., 0.2 mile above.....	39 29.9	75 31.5	+2 21	+2 42	+2 19	+1 56	1.2	1.1	0.0	--	2.1	129	0.0	--	2.1	325
4251	New Bridge, Alloway Creek.....	39 31.6	75 27.1	+3 03	+3 57	+3 36	+3 36	0.7	0.7	0.0	--	1.3	090	0.0	--	1.4	270
4256	Reedy Point, 0.4 mile east of.....	39 33.53	75 33.13	+3 18	+3 02	+2 54	+4 00	1.0	1.2	0.0	--	1.8	333	0.0	--	2.3	166
4261	Reedy Point, 1.1 miles east of.....	39 33.58	75 32.47	+3 19	+3 11	+3 08	+3 36	1.0	0.9	0.0	--	1.8	354	0.0	--	1.7	179
4266	Salem River entrance.....	39 34.2	75 30.1	+3 46	+3 33	+3 37	+4 09	0.8	0.8	0.0	--	1.5	062	0.0	--	1.6	245
4271	Bulkhead Shoal Channel, off Del. City...	39 35.0	75 35.2	+3 16	+2 58	+3 03	+3 44	1.2	1.1	0.0	--	2.1	308	0.0	--	2.1	138
4276	Pea Patch Island, channel east of.....	39 36.0	75 33.9	+3 30	+3 13	+3 33	+4 09	1.3	1.2	0.0	--	2.3	319	0.0	--	2.3	148
4281	Penns Neck, 0.6 mile west of.....	39 37.05	75 34.92	+3 38	+3 38	+3 14	+3 31	0.9	0.9	0.0	--	1.7	002	0.0	--	1.7	167
4286	Penns Neck, 0.3 mile west of.....	39 37.07	75 34.58	+3 22	+3 07	+3 08	+3 37	1.0	0.9	0.0	--	1.8	339	0.0	--	1.7	152
4291	New Castle, channel abreast of.....	39 39.1	75 33.2	+4 04	+3 21	+3 34	+4 01	1.1	1.3	0.0	--	1.9	051	0.0	--	2.4	230
4296	Kelly Point, 0.2 mile northwest of.....	39 38.9	75 32.8	+3 43	+3 55	+3 24	+3 31	0.9	0.8	0.0	--	1.6	049	0.0	--	1.5	230
4301	Deepwater Point, channel northwest of...	39 42.1	75 30.6	+3 44	+3 54	+3 45	+3 55	1.7	1.4	0.0	--	3.0	029	0.0	--	2.6	215
4306	Christina River, 1 mile above entrance..	39 43	75 32	+3 16	+3 01	+2 58	+2 44	0.4	0.5	0.0	--	0.7	300	0.0	--	0.9	050
4311	Cherry Island Flats, channel east of....	39 44.3	75 29.1	+4 09	+4 08	+4 02	+3 57	0.9	0.7	0.0	--	1.6	027	0.0	--	1.4	207
4316	Oldsmans Point.....	39 45.9	75 28.4	+4 28	+3 42	+4 03	+4 40	0.9	0.8	0.0	--	1.6	027	0.0	--	1.5	210
4321	Marcus Hook.....	39 48.2	75 24.6	+4 58	+4 19	+4 02	+4 51	0.9	0.8	0.0	--	1.7	061	0.0	--	1.6	232
4326	Eddystone.....	39 50.8	75 20.5	+5 25	+4 41	+4 31	+4 55	0.9	1.2	0.0	--	1.7	058	0.0	--	2.2	242
4331	Essington Harbor.....	39 51.5	75 18.3	+4 09	+3 54	+4 04	+3 56	0.8	0.6	0.0	--	1.4	096	0.0	--	1.2	274
4336	Crab Point, 0.5 mile east of.....	39 50.8	75 17.0	+4 48	+4 44	+4 44	+4 58	1.2	1.0	0.0	--	2.1	094	0.0	--	1.9	268
4341	Hog Island, channel southeast of.....	39 52.0	75 12.9	+4 53	+4 53	+4 42	+4 52	1.1	1.2	0.0	--	1.9	054	0.0	--	2.2	231
4346	Schuylkill River entrance <1>.....	39 53.2	75 11.7	--	+3 20	--	+4 08	0.3	0.2	0.0	--	0.5	356	0.0	--	0.4	178
4351	Gloucester.....	39 53.4	75 08.1	+5 13	+5 02	+4 53	+5 00	1.2	1.1	0.0	--	2.2	020	0.0	--	2.0	210
4356	Greenwich Point, northeast of.....	39 54.5	75 07.6	+5 18	+4 53	+4 54	+5 01	0.9	0.8	0.0	--	1.6	002	0.0	--	1.6	188
4361	Camden Marine Terminals, E of Chan. <29>	39 56.4	75 08.2	+5 52	+5 13	+5 16	+5 07	0.7	0.6	0.0	--	1.3	005	0.0	--	1.1	174
4366	Fisher Point.....	39 58.9	75 04.2	+6 07	+5 46	+5 23	+5 06	0.8	0.9	0.0	--	1.4	041	0.0	--	1.7	223
4371	Torresdale, west of channel.....	40 02.4	74 59.4	+6 54	+5 56	+4 59	+5 46	0.5	0.8	0.0	--	0.9	044	0.0	--	1.6	223
4376	Rancocas Creek, off Delanco.....	40 02.6	74 57.6	+6 36	+6 25	+5 51	+6 08	0.6	0.5	0.0	--	1.0	090	0.0	--	0.9	272
4381	Bristol, south of.....	40 05.3	74 51.6	+6 55	+5 31	+4 57	+6 10	0.7	0.8	0.0	--	1.3	024	0.0	--	1.6	200
4386	Burlington Island, channel east of.....	40 05.7	74 50.2	+7 32	+5 46	+4 16	+6 46	0.5	0.9	0.0	--	0.9	018	0.0	--	1.8	204
4391	Whitehill <30>.....	40 08.2	74 44.2	--	--	--	+7 07	--	0.7	0.0	--	--	--	0.0	--	1.4	233
	DEL., MD. and VA. COAST																
4396	Indian River Inlet (bridge).....	38 37	75 04	--	+0 05	--	+0 10	1.0	1.1	0.0	--	1.8	265	0.0	--	2.1	085
4401	Fenwick Shoal Lighted Whistle Buoy 2....	38 25	74 46														
4406	Winter-Quarter Shoal Buoy 6WQS <31>.....	37 55	74 56														

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS							
			Lat.	Long.	Min. before Flood		Min. before Ebb		Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb				
					h. m.	h. m.	h. m.	h. m.							knots deg.	knots deg.	knots deg.	knots deg.
	DEL., MD. and VA. COAST Time meridian, 75°W	ft	N	W	on CHESAPEAKE BAY ENTRANCE, p.64													
4411	Cape Charles, 70 miles east of.....		37 05	74 51	See table 5.													
4416	Smith Island Shoal, southeast of.....	7	37 05.3	75 43.5	-2 14	-2 12	-2 04	-2 05	0.3	0.3	0.0	--	0.3	298	0.0	--	0.4	068
4421	Chesapeake Light, 4.4 miles northeast of		36 59	75 42	See table 5.													
4426	Cape Henry Light, 2.2 miles southeast of		36 53.9	75 58.7	-1 54	-1 18	-0 39	-1 41	1.0	0.6	0.0	--	1.0	346	0.0	--	0.9	165
	CHESAPEAKE BAY																	
4431	Cape Henry Light, 1 mile north of.....		36 56.4	76 00.5	+0 04	-0 25	-0 08	-0 25	1.1	1.3	0.0	--	1.1	280	0.0	--	2.0	090
4436	Cape Henry Light, 1.8 miles north of....		36 57.4	76 00.1	-0 23	-0 11	+0 10	-0 17	1.2	1.0	0.0	--	1.2	292	0.0	--	1.5	099
4441	CHESAPEAKE BAY ENTRANCE.....	7	36 58.8	76 00.4	Daily predictions						0.0	--	1.0	306	0.0	--	1.5	126
4446	Cape Henry Light, 4.6 miles north of....		37 00.1	75 59.3	-1 05	-0 46	-0 10	-0 54	1.3	0.9	0.0	--	1.3	294	0.0	--	1.3	104
4451	Cape Charles Light, 9.5 mi. WSW of.....	r	37 03.7	76 05.4	-0 12	+0 08	+0 32	-0 05	1.5	0.9	0.0	--	1.5	319	0.0	--	1.4	126
4456	Cape Henry Light, 8.3 mi. northwest of..		37 02.2	76 06.6	-0 22	-0 12	+0 16	-0 05	1.0	0.7	0.0	--	1.0	329	0.0	--	1.1	133
4461	Lynnhaven Roads.....		36 55.1	76 04.9	-0 58	-0 37	-0 14	-0 41	0.8	0.6	0.0	--	0.8	280	0.0	--	0.9	070
4466	Lynnhaven Inlet bridge.....		36 54.4	76 05.6	-1 56	-2 05	-2 12	-3 01	0.6	0.9	0.0	--	0.6	180	0.0	--	1.4	000
	Chesapeake Bay Bridge Tunnel																	
4471	Chesapeake Beach, 1.5 miles north of.		36 56.69	76 07.33	-0 09	-0 07	-0 23	-0 31	0.8	0.6	0.0	--	0.8	305	0.0	--	0.9	100
4476	Thimble Shoal Channel.....		36 58.33	76 06.67	-0 53	-0 46	-0 24	-0 39	1.4	0.9	0.0	--	1.4	310	0.0	--	1.3	095
4481	Tail of the Horseshoe.....		36 59.57	76 06.20	-0 33	-0 25	-0 13	-0 59	0.9	0.7	0.0	--	0.9	300	0.0	--	1.0	110
4486	Middle Ground, channel west of.....		37 03.00	76 05.00	-0 10	-0 20	+0 36	+0 04	1.6	0.9	0.0	--	1.6	335	0.0	--	1.3	150
4491	Chesapeake Channel.....		37 02.50	76 04.33	-0 33	-0 17	+0 03	-0 12	1.8	1.0	0.0	--	1.8	335	0.0	--	1.5	145
4496	Fisherman Island, 3.2 miles WSW of...		37 04.00	76 02.25	-1 00	-1 07	-0 46	-1 07	1.2	1.1	0.0	--	1.2	330	0.0	--	1.6	135
4501	Fisherman Island, 1.4 miles WSW of...		37 04.78	76 00.25	-1 47	-0 57	-0 41	-1 33	1.8	0.7	0.0	--	1.8	330	0.0	--	1.1	140
4506	Fisherman I., 1.8 miles south of.....		37 03.58	75 58.77	-1 04	-1 00	-0 27	-1 24	1.6	0.9	0.0	--	1.6	320	0.0	--	1.4	120
4511	Fisherman I., 0.4 mile west of.....		37 05.57	75 59.33	-0 59	-1 03	-0 35	-1 13	2.0	1.3	0.0	--	2.0	005	0.0	--	2.0	175
4516	Fisherman I., 1.1 miles northwest of.		37 06.50	76 00.00	-1 17	-0 35	-0 06	-0 50	1.8	1.1	0.0	--	1.8	355	0.0	--	1.6	165
4521	Cape Charles, off Wise Point.....	5	37 06.88	75 58.30	-0 29	-0 18	+0 27	+0 49	0.7	0.1	0.0	--	0.7	305	0.0	--	0.2	075
	Little Creek																	
4526	North of east jetty.....	10	36 56.05	76 10.60	-2 00	-2 02	-1 42	-1 59	0.9	0.7	0.0	--	0.9	280	0.0	--	1.0	076
4531	0.5 mile north of west jetty.....	10	36 56.32	76 10.81	-1 37	-1 03	-0 42	-1 31	0.9	0.6	0.0	--	0.9	274	0.0	--	0.9	108
4536	Old Plantation Flats Light, west of.....		37 14.0	76 04.1	+0 53	+1 06	+1 26	+0 35	1.2	0.9	0.0	--	1.2	005	0.0	--	1.3	175
4541	York Spit Channel.....	7	37 12.9	76 08.5	+0 55	+0 55	+0 55	+0 55	0.8	0.7	0.0	--	0.8	010	0.0	--	1.1	195
4546	Wolf Trap Light, 0.5 mile west of.....		37 23.4	76 11.9	+1 05	+1 05	+1 05	+1 05	1.0	0.8	0.0	--	1.0	015	0.0	--	1.2	190
4551	Wolf Trap Light, 5.8 miles east of.....		37 23.1	76 04.3	+1 45	+1 45	+1 45	+1 45	0.9	0.9	0.0	--	0.9	015	0.0	--	1.3	175
4556	Stingray Point, 5.5 miles east of.....		37 35.0	76 10.4	+1 50	+2 41	+2 52	+2 01	1.0	0.6	0.0	--	1.0	343	0.0	--	0.9	179
4561	Stingray Point, 12.5 miles east of.....		37 33.8	76 02.3	+1 40	+2 05	+1 40	+2 05	1.0	0.5	0.0	--	1.0	030	0.0	--	0.8	175
4566	Smith Point, 4.5 miles east of.....		37 52.9	76 08.6	+3 11	+3 14	+3 14	+3 15	0.7	0.5	0.0	--	0.7	352	0.0	--	0.8	163
4571	Smith Point Light, 6 miles north of.....		37 58.9	76 11.4	+3 50	+3 35	+3 50	+3 35	0.4	0.7	0.0	--	0.4	350	0.0	--	1.0	135
4576	Point Lookin.....		38 06.6	76 13.1	+4 35	+4 15	+4 35	+4 15	0.4	0.3	0.0	--	0.4	010	0.0	--	0.5	160
4581	Point No Point.....		38 09.1	76 14.0	+5 15	+5 10	+5 15	+5 10	0.4	0.4	0.0	--	0.4	355	0.0	--	0.6	150
	BALTIMORE HARBOR APPROACH, p.70																	
4586	Cedar Point, 3.2 miles east of.....		38 18.3	76 18.35	--	-2 49	--	-3 32	0.2	0.8	0.0	--	0.2	030	0.0	--	0.6	175
4591	Cedar Point, 1.1 miles ENE of.....		38 18.27	76 21.10	-3 23	-2 50	-2 36	-3 42	0.5	0.8	0.0	--	0.4	010	0.0	--	0.6	185
4596	Drum Point, 2.8 miles northeast of.....		38 20.18	76 21.95	--	-3 12	--	-2 42	0.2	0.5	0.0	--	0.2	335	0.0	--	0.4	185

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES, AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS							
			Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb				
															h. m.	h. m.	h. m.	h. m.
CHESAPEAKE BAY Time meridian, 75°W on BALTIMORE HARBOR APPROACH, p. 70																		
4601	Cove Point, 0.6 mile northeast of.....	38	23.45	76 22.19	-2 55	-3 04	-3 04	-2 51	0.9	1.0	0.0	--	0.7	330	0.0	--	0.8	155
4606	Cove Point, 2.5 miles east of.....	38	23.2	76 19.8	-2 39	-2 48	-2 44	-2 45	0.6	0.8	0.0	--	0.5	310	0.0	--	0.6	155
4611	Cove Point, 3.3 miles east of.....	38	23.65	76 18.95	-3 18	-3 41	-3 48	-3 20	0.5	0.6	0.0	--	0.4	320	0.0	--	0.5	160
4616	Kenwood Beach, 1.5 miles northeast of...	38	31.1	76 28.9	-1 56	-2 41	-2 46	-2 37	0.2	0.4	0.0	--	0.2	340	0.0	--	0.3	160
4621	James Island, 3.4 miles west of.....	38	31.5	76 25.2	-2 16	-2 39	-3 01	-2 02	0.5	0.4	0.0	--	0.4	005	0.0	--	0.3	175
4625	James Island, 2.5 miles WNW of.....	38	32.0	76 23.6	-2 31	-2 42	-2 18	-2 36	0.5	0.6	0.0	--	0.4	000	0.0	--	0.5	175
4631	Plum Point, 1.4 miles ESE of.....	38	36.75	76 28.65	-1 31	-1 37	-2 20	-2 04	0.2	0.7	0.0	--	0.2	000	0.0	--	0.6	155
4636	Sharps Island, 3.3 miles WNW of.....	38	38.13	76 26.00	--	-1 30	--	-1 57	0.5	0.4	0.0	--	0.4	345	0.0	--	0.3	185
4641	Holland Point, 1.6 miles east of.....	38	43.47	76 29.58	-1 05	-0 52	-1 20	-1 20	0.2	0.8	0.0	--	0.2	010	0.0	--	0.6	180
4646	Holland Point, 6.2 miles east of.....	38	43.9	76 23.8	-2 02	-2 07	-1 31	-1 44	0.4	0.3	0.0	--	0.3	355	0.0	--	0.2	135
4651	Holland Point, 4.7 miles ENE of.....	38	44.7	76 26.0	-0 50	-0 38	-1 05	-0 45	0.2	0.8	0.0	--	0.2	340	0.0	--	0.6	180
4656	Kent Point, 4 miles southwest of.....	38	47.50	76 26.00	-1 03	-1 04	-1 11	-1 05	0.6	0.6	0.0	--	0.5	025	0.0	--	0.5	210
4661	Kent Point, 1.3 miles south of.....	38	49.00	76 21.85	-3 27	-3 38	-3 53	-3 47	0.6	0.5	0.0	--	0.4	055	0.0	--	0.4	235
4666	Horseshoe Point, 1.7 miles east of.....	38	50.30	76 27.20	-0 52	-0 39	-0 49	-1 10	0.6	0.6	0.0	--	0.5	005	0.0	--	0.5	200
4671	Bloody Point Bar Light, 0.6 mi. NW of...	19	50.37	76 24.17	-0 08	-0 23	+0 02	-0 05	0.9	0.6	0.0	--	0.7	035	0.0	--	0.5	190
4676	Thomas Pt. Shoal Lt., 1.8 mi. SW of.....	38	52.50	76 27.70	-2 24	-2 27	-1 43	-2 17	0.5	0.4	0.0	--	0.4	340	0.0	--	0.3	190
4681	Thomas Pt. Shoal Lt., 0.4 mi. SE of.....	38	53.85	76 25.77	-0 14	-0 40	-1 06	-0 53	0.9	1.1	0.0	--	0.7	010	0.0	--	0.9	185
4686	Tolly Point, 1.6 miles east of.....	38	56.07	76 25.02	-0 03	-0 19	-0 32	-0 24	0.6	0.9	0.0	--	0.5	355	0.0	--	0.7	190
4691	Chesapeake Bay Bridge, main channel.....	38	59.50	76 23.10	+0 16	+0 08	-0 17	+0 13	0.9	1.1	0.0	--	0.7	025	0.0	--	0.9	230
4696	BALTIMORE HBR. APP. (off Sandy Point)...	39	00.78	76 22.10	Daily predictions				0.0	0.0	0.0	--	0.8	025	0.0	--	0.8	189
4701	Love Point, 1.3 miles ESE of.....	39	02.12	76 16.45	--	-0 39	-1 17	-0 57	0.3	0.4	0.0	--	0.3	170	0.0	--	0.3	345
4706	Love Point, 2.8 miles NNE of.....	39	04.7	76 16.3	Current weak and variable													
4711	Love Point, 2.5 miles north of.....	39	04.78	76 18.73	-0 48	+0 19	+0 27	-0 07	0.8	0.5	0.0	--	0.6	055	0.0	--	0.4	240
4716	Craighill Channel, NE of Mountain Pt....	39	04.88	76 23.67	+0 28	+0 40	+0 25	+0 34	0.8	0.9	0.0	--	0.6	350	0.0	--	0.7	175
4721	Craighill Angle, right outside quarter..	39	07.70	76 23.27	+0 12	+0 27	+0 34	+0 23	0.6	0.6	0.0	--	0.5	345	0.0	--	0.5	170
4726	Sevenfoot Knoll Light, 0.8 mi. NE of....	39	09.83	76 23.67	-0 07	+0 44	+0 44	+0 27	0.5	0.2	0.0	--	0.4	345	0.0	--	0.2	160
4731	Swan Point, 2.1 miles west of.....	39	08.75	76 19.67	+1 16	+1 01	+1 05	+0 55	0.6	0.8	0.0	--	0.5	355	0.0	--	0.6	220
4736	Swan Point, 1.6 miles northwest of.....	39	09.75	76 18.28	+0 53	+0 44	+0 38	+0 57	0.8	0.9	0.0	--	0.6	020	0.0	--	0.7	215
4741	North Point, 2.5 miles northeast of.....	7	12.87	76 23.72	+1 25	+1 00	+0 53	+1 06	0.4	0.5	0.0	--	0.3	035	0.0	--	0.4	225
4746	Pooles Island, 4 miles southwest of.....	39	13.60	76 19.88	+0 59	+0 48	+0 56	+1 12	0.6	0.8	0.0	--	0.5	025	0.0	--	0.6	210
4751	Tolchester Beach, 0.4 mile WNW of.....	39	13.13	76 15.08	+1 52	+1 37	+1 28	+1 35	0.9	1.1	0.0	--	0.7	015	0.0	--	0.9	225
4756	Pooles Island, 0.8 mile south of.....	39	15.7	76 16.4	+1 29	+1 24	+1 12	+1 20	0.9	1.2	0.0	--	0.7	060	0.0	--	1.0	255
4761	Miller Island, 1.5 miles ENE of.....	7	16.5	76 19.9	+0 11	+0 15	+0 37	+0 25	0.6	0.3	0.0	--	0.5	000	0.0	--	0.2	185
4766	Pooles Island, 1.4 miles east of.....	39	17.2	76 13.9	+1 48	+1 31	+1 26	+1 26	1.0	1.5	0.0	--	0.8	030	0.0	--	1.2	215
4771	Robins Point, 0.7 mile ESE of.....	5	17.75	76 16.10	-0 03	-0 14	+0 37	-0 13	1.4	1.0	0.0	--	1.1	025	0.0	--	0.8	210
4776	Worton Point, 1.1 miles northwest of....	39	19.9	76 12.0	+1 43	+1 43	+1 38	+1 32	1.4	1.5	0.0	--	1.1	040	0.0	--	1.2	245
4781	Howell Point, 0.4 mile NNW of.....	39	22.6	76 06.9	+1 28	+1 24	+1 20	+1 18	1.1	1.1	0.0	--	0.9	080	0.0	--	0.9	245
4786	Grove Point, 0.8 mile northwest of.....	39	24.0	76 03.1	+1 54	+1 58	+1 41	+1 39	1.0	1.0	0.0	--	0.8	060	0.0	--	0.8	235
4791	Turkey Point, 1.4 miles WSW of.....	7	26.25	76 02.08	+1 27	+1 19	+1 24	+1 22	0.8	0.9	0.0	--	0.6	030	0.0	--	0.7	220
4796	Spesutie Island, channel north of.....	39	28.83	76 04.90	+1 42	+1 20	+1 49	+1 40	0.8	0.6	0.0	--	0.6	285	0.0	--	0.5	100
4801	Rocky Point, 0.5 mile west of.....	39	29.2	76 00.2	+2 15	+2 15	+2 15	+2 15	0.6	0.8	0.0	--	0.5	030	0.0	--	0.6	190
4806	Red Point, 0.2 mile W of, Northeast R....	7	31.75	75 59.08	+1 42	+1 28	+1 57	+1 47	0.9	0.6	0.0	--	0.7	--	0.0	--	0.5	--
4811	Havre de Grace, Susquehanna River.....	39	33.13	76 05.08	Current weak and variable													

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS							
			Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb				
															h.	m.	h.	m.
MOBJACK BAY and PIANKATANK RIVER Time meridian, 75°W																		
on CHESAPEAKE BAY ENTRANCE, p.64																		
5176	New Point Comfort, 1.5 miles west of....	ft	37 17.7	76 18.4	-2 59	-1 58	-2 03	-2 48	0.6	0.3	0.0	--	0.6	320	0.0	--	0.5	130
5181	Bland Point, Piankatank River.....		37 31.8	76 21.9	-0 30	-0 30	-0 30	-0 30	0.4	0.1	0.0	--	0.4	300	0.0	--	0.2	125
5186	Doctor Point, 0.4 mile west of.....		37 31.1	76 27.0	-0 28	-0 58	-1 17	-0 37	0.4	0.3	0.0	--	0.4	311	0.0	--	0.4	142
RAPPAHANNOCK RIVER																		
5191	Mosquito Point, 0.9 mile SSE of.....		37 35.72	76 21.08	+0 55	+1 31	+1 38	+0 41	0.7	0.6	0.0	--	0.7	265	0.0	--	0.8	090
5196	Mosquito Point.....		37 35.8	76 21.5	+0 45	+0 45	+0 45	+0 45	0.6	0.4	0.0	--	0.6	290	0.0	--	0.6	115
5201	Orchard Point, 1.0 mile south of.....		37 37.97	76 27.45	+0 49	+1 35	+1 50	+0 52	0.5	0.4	0.0	--	0.5	270	0.0	--	0.6	085
5206	Millenbeck Wharf, Corrotoman River.....		37 39.9	76 29.0	--	--	--	--	--	--	0.0	--	0.3	000	0.0	--	0.3	186
5211	Towles Point.....		37 37.8	76 30.4	+1 06	+1 07	+2 10	+1 25	0.6	0.3	0.0	--	0.6	274	0.0	--	0.5	103
5216	Rogue Point, 0.8 mile MNW of.....		37 40.28	76 33.20	--	+1 44	--	+1 27	0.6	0.4	0.0	--	0.6	000	0.0	--	0.6	195
5221	Waterview, 1.3 miles NNE of.....		37 44.95	76 35.92	+1 41	+1 59	+2 46	+2 10	0.7	0.4	0.0	--	0.7	340	0.0	--	0.6	155
5226	Tarpley Point, 1.5 miles south of.....		37 46.15	76 39.12	+2 16	+2 37	+3 20	+2 39	0.7	0.5	0.0	--	0.7	300	0.0	--	0.7	105
5231	Jones Point, 1.4 miles MNW of.....		37 48.03	76 41.58	+2 04	+2 23	+3 19	+2 27	1.1	0.6	0.0	--	1.1	315	0.0	--	0.9	105
5236	Sharps, 1.2 miles south of.....		37 48.18	76 41.92	+2 19	+2 46	+3 52	+3 01	0.9	0.5	0.0	--	0.9	290	0.0	--	0.8	095
5241	Bowlers Rock, 0.2 mile north of.....		37 49.58	76 44.00	+2 27	+2 41	+3 37	+2 50	1.0	0.7	0.0	--	1.0	315	0.0	--	1.1	135
5246	Accaceek Point, 0.3 mile southwest of...		37 52.52	76 46.40	+2 40	+2 48	+3 27	+3 13	1.2	0.7	0.0	--	1.2	335	0.0	--	1.0	150
5251	Tappahannock Bridge, 1.8 miles SE of....		37 55.10	76 49.27	+3 08	+3 07	+3 56	+3 28	1.4	0.9	0.0	--	1.4	315	0.0	--	1.3	105
5256	Tappahannock Bridge.....		37 56.0	76 51.2	+3 40	+3 40	+3 40	+3 40	1.3	0.8	0.0	--	1.3	315	0.0	--	1.2	135
5261	Port Royal.....		38 10.5	77 11.4	+6 10	+6 10	+6 10	+6 10	0.7	0.5	0.0	--	0.7	310	0.0	--	0.7	130
POCOMOKE SOUND																		
5266	Pocomoke Sound Approach.....		37 38.00	75 57.90	--	+1 12	--	+1 31	0.7	0.5	0.0	--	0.7	009	0.0	--	0.7	196
5271	Pungoteague Creek entrance.....	6	37 40.48	75 51.90	--	--	--	--	--	--	0.0	--	0.3	094	0.0	--	0.2	254
5276	Watts Island, 4 miles south of.....	7	37 43.2	75 54.0	+0 17	+0 01	+0 27	-0 04	0.6	0.4	0.0	--	0.6	027	0.0	--	0.6	247
5281	Watts Island, 2.2 miles east of.....		37 47.9	75 50.6	+0 44	+1 10	+1 40	+1 03	1.3	0.9	0.0	--	1.3	027	0.0	--	1.3	209
5286	Pocomoke R., 0.5 mile below Shelltown...		37 58.3	75 38.7	+3 30	+3 00	+3 30	+3 00	1.1	0.6	0.0	--	1.1	045	0.0	--	0.9	170
TANGIER SOUND																		
5291	Tangier Sound Light, 1.5 miles NE of....		37 48.5	75 57.4	+1 30	+2 02	+2 15	+1 39	1.2	0.7	0.0	--	1.2	014	0.0	--	1.1	220
5296	Jane's Island.....		38 00.0	75 54.5	+3 40	+3 25	+3 40	+3 25	0.9	0.6	0.0	--	0.9	000	0.0	--	0.9	210
5301	Kedges Straits, off Solomons Lump.....		38 03.1	76 00.8	+0 20	+0 32	+0 50	+0 09	0.9	0.8	0.0	--	0.9	104	0.0	--	1.2	280
5306	Manokin River entrance.....		38 05.5	75 53.6	--	+2 04	--	+2 32	0.6	0.4	0.0	--	0.6	019	0.0	--	0.6	182
5311	Deal Island, 0.9 mile west of.....		38 08.2	75 58.7	+3 08	+3 26	+3 33	+3 15	0.9	0.7	0.0	--	0.9	354	0.0	--	1.0	179
5316	Frog Point, 1.6 miles south of.....		38 12.6	75 57.3	+3 19	+3 00	+3 41	+3 31	1.0	0.7	0.0	--	1.0	048	0.0	--	1.1	240
Micomico River																		
5321	Victor Point, 0.8 mile southwest of..		38 14.3	75 51.8	+3 10	+2 54	+3 49	+3 34	0.6	0.6	0.0	--	0.6	034	0.0	--	0.9	242
5326	Whitehaven.....		38 15.9	75 47.5	+2 56	+3 45	+4 02	+3 01	1.1	0.7	0.0	--	1.1	089	0.0	--	1.1	284
5331	Whitehaven, 2.5 miles above.....	4	38 17.8	75 45.5	+3 00	+3 13	+3 45	+2 55	1.0	0.7	0.0	--	1.0	006	0.0	--	1.1	188
5336	Salisbury, 2 miles below.....	4	38 20.4	75 38.3	+3 23	+3 31	+4 03	+3 28	0.6	0.5	0.0	--	0.6	085	0.0	--	0.8	258
5341	Sandy Point, Nanticoke River.....		38 14.8	75 55.7	+3 14	+3 36	+4 21	+3 39	1.2	0.7	0.0	--	1.2	000	0.0	--	1.1	182

Endnotes can be found at the end of Table 2.

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS						
			Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood		Maximum before Ebb				
											knots	deg.	knots	deg.			
	LOUISIANA COAST Time meridian, 90°W	ft	° N	° W	h. m.	h. m.	h. m.	h. m.			knots	deg.	knots	deg.			
	on GALVESTON BAY ENTRANCE, p.124																
8961	Cat Island Pass, Terrebonne Bay.....	29 04.8	90 34.4	-2 45	-1 25	-2 40	-3 40	0.6	0.6	0.0	--	1.1	013	0.0	--	1.5	195
8971	Wine Island Pass.....	29 04.2	90 38.0	-4 46	-4 31	-5 13	-4 58	1.0	0.8	0.0	--	1.7	325	0.0	--	1.9	160
8981	Caillou Boca, Caillou Bay.....	29 03.5	90 48.5	-0 46	-0 09	+1 24	-0 46	0.8	0.3	0.0	--	1.3	095	0.0	--	0.7	264
8991	Calcasieu Pass.....	29 46.4	93 20.7	-0 18	-0 43	+2 12	-0 44	1.0	1.0	0.0	--	1.7	020	0.0	--	2.3	205
9001	Calcasieu Pass, 35 miles south of.....	29 10.15	93 19.23	Current weak and variable				--	--	--	--	--	--	--	--	--	--
9011	Calcasieu Pass, 67 miles south of <49>..	28 39.80	93 19.95	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	TEXAS																
	Sabine Pass																
9021	Texas Point, 1.7 miles SSE of.....	29 39.0	93 49.6	-0 14	-0 34	-0 15	-0 21	0.6	0.7	0.0	--	1.1	335	0.0	--	1.6	145
9031	Sabine, channel east of.....	29 43.3	93 51.7	-0 15	-0 02	-0 15	+0 04	0.9	0.7	0.0	--	1.6	335	0.0	--	1.7	140
9041	Port Arthur Canal entrance.....	29 45.6	93 54.1	+0 53	+1 34	+0 55	+1 12	0.5	0.6	0.0	--	0.9	310	0.0	--	1.3	110
9051	Mesquite Pt., La. Causeway bridge....	29 45.95	93 53.70	-0 21	-0 22	-0 20	-0 35	0.9	1.0	0.0	--	1.6	330	0.0	--	2.2	150
	GALVESTON BAY																
	Daily predictions																
9061	GALVESTON BAY ENT. (between jetties)...	29 20.8	94 42.3	+0 25	+0 26	+1 15	+0 14	1.0	0.8	0.0	--	1.7	299	0.0	--	2.3	102
9071	Bolivar Roads, 0.5 mi. N of Ft. Point...	29 20.8	94 46.1	--	-1 21	--	-0 59	0.6	0.4	0.0	--	1.1	196	0.0	--	0.8	009
9081	Quarantine Station, 0.3 mile S of <27>..	29 19.8	94 46.7	--	+0 01	--	-0 17	1.0	0.6	0.0	--	1.7	272	0.0	--	1.5	103
9091	Galveston Channel, west end <27>.....	29 18.6	94 49.2	--	--	--	+0 05	0.4	0.4	0.0	--	0.7	210	0.0	--	0.8	025
9101	Galveston Causeway RR. bridge.....	29 17.80	94 53.13	-0 24	-0 32	--	+0 05	0.8	0.6	0.0	--	1.3	330	0.0	--	1.4	166
9111	Houston Channel, W of Port Bolivar.....	29 21.8	94 47.8	+0 18	+0 35	+1 18	+0 24	0.8	0.6	0.0	--	1.3	330	0.0	--	1.4	166
9121	Houston Ship Channel (Red Fish Bar).....	29 30.2	94 52.5	+3 11	+1 51	+0 12	+1 29	0.8	0.8	0.0	--	1.3	321	0.0	--	1.8	146
	TEXAS COAST																
9131	Matagorda Channel (entrance jetty).....	28 25.3	96 19.4	-0 56	-0 28	-0 18	-1 14	1.2	0.8	0.0	--	2.0	317	0.0	--	1.9	142
9141	Aransas Pass.....	27 50.1	97 02.65	+0 34	+1 03	+0 50	-0 08	0.5	0.5	0.0	--	0.9	312	0.0	--	1.2	116
9151	Sabine Bank <54>.....	29 18.20	94 00.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9161	Heald Bank, 28 miles SSE of <54>.....	28 40.17	93 59.60	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	PUERTO RICO Time meridian, 60°W																
	on VIEQUES PASSAGE, p.130																
9171	Punta Ostiones, 1.5 miles west of.....	18 05.2	67 13.6	-0 26	-0 52	-0 04	-0 35	1.7	1.3	0.0	--	1.0	187	0.0	--	0.9	001
9181	VIEQUES PASSAGE.....	18 11.3	65 37.1	Daily predictions				0.0	0.0	0.0	--	0.6	250	0.0	--	0.7	057
9191	Vieques Sound.....	18 15.87	65 34.20	-0 44	-1 16	-1 28	-1 05	0.7	0.9	0.0	--	0.4	180	0.0	--	0.6	355
9201	Largo Shoals, west of.....	18 19	65 35	-0 52	-1 28	-1 33	-1 08	0.7	1.0	0.0	--	0.4	186	0.0	--	0.7	330
9211	Ramos Cay, 0.3 mile SE of <1>.....	18 18.6	65 36.4	--	-0 42	--	-0 44	0.3	0.1	0.0	--	0.2	120	0.0	--	0.1	284
9221	Palomino Island, 0.9 mile SW of <13>...	18 20.1	65 34.8	--	--	--	-0 48	--	0.7	--	--	--	--	--	--	0.5	307
9231	Fajardo Harbor (channel).....	18 20	65 37	-1 13	-1 52	-2 27	-1 45	0.5	1.6	0.0	--	0.3	162	0.0	--	1.1	339
9241	Isla Marina, 0.2 mile west of <1> <13>..	18 20.50	65 37.38	--	--	--	-2 06	--	1.0	--	--	--	--	--	--	0.7	335
9251	Coronala Laja, 0.4 mile NW of <1> <13>..	18 21.6	65 37.3	--	--	--	-1 33	--	0.4	--	--	--	--	--	--	0.3	000
9261	Pasaje de San Juan <1> <13>.....	18 23.9	65 36.9	--	--	--	-1 15	--	1.7	--	--	--	--	--	--	1.2	310
9271	Bahia de San Juan.....	18 27.23	66 06.6	Current weak and variable				--	--	--	--	--	--	--	--	--	--
9281	Bahia de San Juan entrance <50>.....	18 28.3	66 07.6	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Endnotes can be found at the end of Table 2.

- < 1> The times of minimum before flood and ebb are indefinite.
- < 2> Current speeds up to 9.0 knots have been observed in the vicinity of the Boilers.
- < 3> Current turns westward just before the end of the flood.
- < 4> Current tends to rotate counterclockwise, flood direction swinging from westward to southward.
- < 5> Observations indicate that current floods about 11 hours and ebbs about 1 1/2 hours. Minimum before flood occurs about 4 1/2 hours earlier, maximum flood about 1 hour later, minimum before ebb about 1/2 hour later, and maximum ebb about 1 1/2 hours earlier than corresponding predictions at Portsmouth Harbor Entrance. Average ebb speed is less than 0.5 knot.
- < 6> Current is variable; current speeds are usually less than 1 knot. Currents are strong in the entrance to Menemsha Pond.
- < 7> In the open waters of Buzzards Bay, except in the entrance and off Penikese Island and West Island (see table-2, no. 1080-1190), the current is too weak and variable to be predicted.
- < 8> The currents in Narragansett Bay have a pronounced irregularity which is evidenced at times during the month by a long period of approximate slack water preceding the flood, and at other times by a double flood of two distinct maximums of speed separated by a period of lesser speed. These peculiarities appear to be somewhat unstable, consequently, flood currents differing from those predicted should be expected. The ebb current is fairly regular and the predictions for maximum ebb will usually agree closely with the current encountered.
- < 9> At minimum flood, current sometimes ebbs for a short period.
- < 10> At minimum flood, current frequently ebbs for a short period.
- < 11> Flood is too weak to be predicted. Time difference gives mid-point of 4 hour stand of weak and variable current and time of maximum ebb.
- < 12> Inside breakwaters, in channel, the current is only 0.4 knot.
- < 13> Current seldom floods.
- < 14> Near Tongue Point, Bridgeport Harbor, the current is weak and irregular.
- < 15> The current on the Manhattan side of the channel is about 0.5 knot stronger, and on the Brooklyn side about 0.5 knot weaker, than at this station.
- < 16> The ebb or northerly current is weak and variable. East of the channel the current flows southward practically all the time, but with changing speed, the maximum speed being about the same as in mid-channel and occurring about the same time. On the Manhattan side, just off the piers, the flood or southerly current is weak and variable but the ebb or northerly current has an average maximum speed of about 2 knots which occurs about the time of maximum ebb at Hell Gate.
- < 17> Tidal current is weak, averaging about 0.1 knot at maximum.
- < 18> For maximum southward current only, the gates of the lock being closed to prevent northward flow. Apply difference and ratio to maximum ebb at The Narrows.
- < 19> Current is rotary, turning clockwise. Minimum current of 0.9 knot sets southwest about time of "Minimum before flood" at The Narrows. Minimum current of 0.5 knot sets northeast about 1 hour before "Minimum before ebb" at The Narrows.
- < 20> The values for the Hudson River are for the summer months, when the freshwater discharge is a minimum.
- < 21> In Roundout Creek entrance between lights, eddies on the flood make navigation difficult. Little difficulty will be experienced on the ebb.
- < 22> Current does not flood.
- < 23> Current is rotary, turning clockwise. It flows northwest at times of "Minimum before flood" at The Narrows; northeast 1 hour after maximum flood; southeast 1 1/2 hours after "Minimum before ebb"; and southwest 2 hours after maximum ebb.
- < 24> Current is rotary, turning clockwise. Minimum current of 0.2 knot sets west about the time of "Minimum before flood" at The Narrows. Minimum current of 0.2 knot sets ENE about the time of "Minimum before ebb" at The Narrows.
- < 25> In Sandy Hook Bay (except in southern extremity) the current is weak.
- < 26> Tidal current is weak and rotary, averaging about 0.1 knot at maximum.
- < 27> The times of minimum before flood and ebb are variable.
- < 28> Current usually ebbs during period 3 hours before to 3 hours after maximum ebb. Flood is weak and variable.

- <29> To obtain speeds in midchannel use speed ratio 0.8.
- <30> Flood is usually weak and of short duration. A weak ebb or flood current occurs about 6 hours after maximum flood at Delaware Bay Entrance.
- <31> Tidal current is weak and rotary, averaging less than 0.1 knot.
- <32> Current tends to rotate clockwise. At times for "Minimum before flood" there may be a weak current flowing southward while at times for "Minimum before ebb" there may be a weak current flowing northward.
- <33> Just off southernmost point, current turns about 1 hour earlier than in midchannel.
- <34> Current tends to rotate clockwise. At times for "Minimum before flood" there may be a weak current flowing WSW while at times for "Minimum before ebb" there may be a weak current flowing ENE.
- <35> Do not use difference or ratio for lesser maximum ebb current as it is weak and variable.
- <36> Current tends to rotate clockwise. At times for "Minimum before flood" there may be a weak current flowing southwest, while at times for "Minimum before ebb" there may be a weak current flowing north.
- <37> Flood usually flows northward, however, direction is variable.
- <38> The combination of currents from Stono River and North Edisto River in the vicinity of the Southern S.A.L. Ry. bridge produces eight changes a day in direction of flow instead of the usual four. Approximate times of the minimums are as follows: current turns south about 2h 50m before flood begins and 3h 00m before ebb begins at Charleston Harbor; current north about 1h 10m after flood begins and 20 minutes before ebb begins at Charleston Harbor. Caution is advised when running north with a fair current as a cross current from the old channel of the Stono River is encountered at the south approach to the bridge.
- <39> Flood is variable, current sometimes changing to ebb for a short time during the flood period.
- <40> Due to changes in the waterway average speed values given are probably too large.
- <41> Flood usually occurs in a southerly direction and the ebb in a northeastwardly direction.
- <42> Flood is weak and variable.
- <43> Current tends to rotate clockwise. At times for "Minimum before flood" there may be a weak current flowing northward while at times for "Minimum before ebb" there may be a weak current flowing south-eastward.
- <44> For greater ebb only.
- <45> Tidal current is rotary, turning clockwise, with an average speed of about 0.3 knot.
- <46> The strength of flood is usually about 2 knots. The speed ratio for strength of ebb is 0.8, except for an ebb speed at Tampa Bay entrance less than 1 knot or marked with an asterisk. In this case take the ebb speed at Johns Pass to be about 1 knot.
- <47> For greater ebb. Lesser ebb is almost equal to greater ebb.
- <48> Currents are materially affected by winds.
- <49> Current is weak and variable. Current is somewhat rotary turning clockwise.
- <50> Current is normally weak and variable, but winds may cause heavy swells.
- <51> Minimum ebb is extremely weak, possibly flooding for a short period.
- <52> Every other ebb phase exhibits a double ebb pattern. For single ebb phases use time differences and speed ratios of the first ebb.
- <53> Ebb is weak and variable.
- <54> Current is somewhat rotary, speed seldom exceeds 0.3 knot.
- <55> Flood is weak and variable with speeds less than or equal to 0.2 knot. Minimums are indefinite.
- <56> Turbulence with hazardous current speeds of 6 to 7 knots have been reported near the bridges in the canal. Extreme caution should be exercised.
- CAUTION--During the first 2 hours of flood in channel north of Governors Island the current in Hudson River is still ebbing while during the first 1 1/2 hours of ebb in this channel the current in Hudson River is still flooding. (See Tidal Current Charts, New York Harbor.) At such times special care must be taken by large ships in navigating this channel.

ROTARY TIDAL CURRENTS

Station No.	Depth (ft.)	(Time: Hours after Minimum before Flood at Boston Harbor)																										
		0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5		10.0	10.5	11.0	11.5	12.0	
393	10	0.03 265	0.22 266	0.23 265	0.24 268	0.23 270	0.26 268	0.25 282	0.27 303	0.32 319	0.33 327	0.33 333	0.32 340	0.31 357	0.28 025	0.29 067	0.28 068	0.27 070	0.27 074	0.28 073	0.27 080	0.26 076	0.27 079	0.23 073	0.21 073	0.21 051	knots degrees	
395	10	0.30 210	0.40 261	0.45 258	0.43 247	0.46 248	0.48 247	0.50 262	0.53 280	0.51 280	0.52 304	0.50 340	0.51 345	0.51 009	0.52 044	0.49 049	0.50 061	0.48 068	0.52 070	0.49 074	0.46 079	0.46 082	0.43 081	0.40 090	0.40 081	0.36 123	knots degrees	
397	10	0.29 200	0.30 209	0.30 212	0.31 222	0.32 229	0.34 243	0.34 247	0.35 259	0.37 265	0.36 268	0.35 284	0.35 331	0.34 002	0.34 018	0.34 042	0.35 056	0.34 058	0.36 064	0.35 065	0.34 075	0.36 080	0.35 085	0.34 086	0.32 095	0.18 132	knots degrees	
399	10	0.50 138	0.49 140	0.52 220	0.55 243	0.56 284	0.57 260	0.54 252	0.53 241	0.55 250	0.54 244	0.55 240	0.55 228	0.52 211	0.50 160	0.52 078	0.50 062	0.49 081	0.51 093	0.51 085	0.51 093	0.50 091	0.51 087	0.49 095	0.50 116	0.49 130	knots degrees	
401	10	0.20 306	0.20 342	0.21 340	0.22 244	0.24 228	0.23 232	0.25 223	0.25 232	0.26 200	0.24 210	0.26 216	0.25 271	0.24 290	0.24 351	0.23 357	0.24 051	0.23 059	0.23 048	0.22 045	0.21 028	0.21 037	0.21 052	0.20 052	0.20 028	0.20 035	0.20 011	knots degrees
403	10	0.42 221	0.44 223	0.43 214	0.45 221	0.46 211	0.46 211	0.46 215	0.47 219	0.48 219	0.48 227	0.49 235	0.46 230	0.48 221	0.50 254	0.50 019	0.50 015	0.49 009	0.48 357	0.47 052	0.47 053	0.47 055	0.47 070	0.45 135	0.42 193	0.41 206	knots degrees	
405	10	0.42 213	0.44 197	0.45 193	0.45 182	0.47 175	0.50 135	0.46 178	0.47 183	0.45 222	0.44 247	0.44 267	0.40 306	0.45 330	0.47 346	0.44 328	0.44 344	0.47 335	0.44 327	0.42 334	0.42 341	0.43 337	0.47 338	0.40 306	0.43 274	0.45 240	knots degrees	
417	15	0.11 191	0.26 292	0.51 295	0.53 304	0.55 303	0.52 312	0.50 308	0.54 319	0.47 313	0.50 331	0.46 354	0.45 358	0.46 010	0.45 030	0.48 046	0.51 059	0.57 089	0.62 108	0.66 109	0.67 122	0.64 121	0.62 119	0.51 132	0.40 129	0.25 134	knots degrees	
419	10	0.30 251	0.30 307	0.38 331	0.39 342	0.38 332	0.36 336	0.37 343	0.37 341	0.36 343	0.36 350	0.35 347	0.34 006	0.30 029	0.20 081	0.19 114	0.25 138	0.30 146	0.33 160	0.35 165	0.36 172	0.38 173	0.38 173	0.36 190	0.36 203	0.32 233	knots degrees	
461	10	0.34 267	0.39 264	0.41 261	0.42 261	0.35 259	0.35 251	0.34 235	0.37 230	0.39 220	0.38 209	0.35 199	0.35 197	0.32 146	0.32 087	0.36 069	0.40 070	0.41 071	0.35 046	0.31 030	0.32 018	0.31 024	0.27 046	0.07 024	0.20 269	0.25 272	knots degrees	
489	10	0.33 007	0.35 010	0.36 024	0.35 034	0.36 060	0.34 343	0.40 348	0.39 007	0.40 063	0.42 025	0.45 095	0.37 064	0.35 081	0.32 103	0.35 102	0.37 103	0.34 104	0.33 117	0.35 135	0.35 139	0.34 158	0.09 215	0.29 339	0.31 353	0.24 355	knots degrees	
*513	10	0.17 086	0.16 095	0.18 090	0.16 088	0.13 090	0.17 095	0.19 090	0.21 093	0.22 083	0.18 083	0.19 081	0.21 077	0.18 082	0.22 072	0.25 072	0.24 070	0.26 069	0.27 067	0.28 070	0.28 070	0.29 073	0.28 077	0.25 085	0.23 082	0.18 085	knots degrees	
565	10	0.22 217	0.27 199	0.29 209	0.09 199	0.37 052	0.40 061	0.44 074	0.45 077	0.44 066	0.44 047	0.44 032	0.48 025	0.50 029	0.51 041	0.47 061	0.42 077	0.39 082	0.37 076	0.37 071	0.37 070	0.36 070	0.32 064	0.30 069	0.23 070	0.10 085	knots degrees	
565	20	0.15 271	0.22 238	0.24 231	0.05 251	0.28 030	0.30 031	0.31 076	0.36 073	0.34 064	0.33 040	0.35 029	0.36 021	0.40 021	0.43 030	0.39 049	0.30 067	0.28 058	0.34 056	0.35 056	0.34 050	0.32 050	0.29 044	0.23 032	0.16 032	0.09 005	knots degrees	
617	10	0.20 246	0.23 232	0.27 282	0.45 351	0.41 019	0.40 025	0.35 024	0.30 009	0.28 355	0.32 343	0.34 338	0.35 339	0.33 345	0.29 007	0.29 013	0.32 008	0.33 002	0.33 356	0.32 345	0.32 336	0.32 333	0.30 331	0.26 331	0.24 320	0.24 305	knots degrees	
617	20	0.15 220	0.19 214	0.20 232	0.33 001	0.34 020	0.30 027	0.24 024	0.21 003	0.22 345	0.28 340	0.31 333	0.33 332	0.32 331	0.29 351	0.26 009	0.27 008	0.28 003	0.29 350	0.31 339	0.29 334	0.26 329	0.21 322	0.17 322	0.14 315	0.10 254	knots degrees	

* In Reserved Channel, the tidal current is weak, averaging less than 0.1 knot. During a 7-day observation period, the total current set was consistently eastward.

TABLE 3.—VELOCITY OF CURRENT AT ANY TIME

EXPLANATION

Though the predictions in this publication give only the slacks and maximum currents, the velocity of the current at any intermediate time can be obtained approximately by the use of this table. Directions for its use are given below the table.

Before using the table for a place listed in table 2, the predictions for the day in question should first be obtained by means of the differences and ratios given in table 2.

The examples below follow the numbered steps in the directions.

Example 1.—Find the velocity of the current in The Race at 6:00 on a day when the predictions which immediately precede and follow 6:00 are as follows:

(1)	Slack Water		Maximum (Flood)
	<i>Time</i>		<i>Time</i> <i>Velocity</i>
	4:18		7:36 3.2 knots

Directions under the table indicate table A is to be used for this station.

(2) Interval between slack and maximum flood is $7:36 - 4:18 = 3^h18^m$. Column heading nearest to 3^h18^m is 3^h20^m .

(3) Interval between slack and time desired is $6:00 - 4:18 = 1^h42^m$. Line labeled 1^h40^m is nearest to 1^h42^m .

(4) Factor in column 3^h20^m and on line 1^h40^m is 0.7. The above flood velocity of 3.2 knots multiplied by 0.7 gives a flood velocity of 2.24 knots (or 2.2 knots, since one decimal is sufficient) for the time desired.

Example 2.—Find the velocity of the current in the Harlem River at Broadway Bridge at 16:30 on a day when the predictions (obtained using the difference and ratio in table 2) which immediately precede and follow 16:30 are as follows:

(1)	Maximum (Ebb)		Slack Water
	<i>Time</i> <i>Velocity</i>		<i>Time</i>
	13:49 2.5 knots		17:25

Directions under the table indicate table B is to be used, since this station in table 2 is referred to Hell Gate.

(2) Interval between slack and maximum ebb is $17:25 - 13:49 = 3^h36^m$. Hence, use column headed 3^h40^m .

(3) Interval between slack and time desired is $17:25 - 16:30 = 0^h55^m$. Hence, use line labeled 1^h00^m .

(4) Factor in column 3^h40^m and on line 1^h00^m is 0.5. The above ebb velocity of 2.5 knots multiplied by 0.5 gives an ebb velocity of 1.2 knots for the desired time.

When the interval between slack and maximum current is greater than 5^h40^m , enter the table with one-half the interval between slack and maximum current and one-half the interval between slack and the desired time and use the factor thus found.

TABLE 3.—VELOCITY OF CURRENT AT ANY TIME

TABLE A														
Interval between slack and maximum current														
	<i>h. m.</i> 1 20	<i>h. m.</i> 1 40	<i>h. m.</i> 2 00	<i>h. m.</i> 2 20	<i>h. m.</i> 2 40	<i>h. m.</i> 3 00	<i>h. m.</i> 3 20	<i>h. m.</i> 3 40	<i>h. m.</i> 4 00	<i>h. m.</i> 4 20	<i>h. m.</i> 4 40	<i>h. m.</i> 5 00	<i>h. m.</i> 5 20	<i>h. m.</i> 5 40
<i>h. m.</i> 0 20	<i>f.</i> 0.4	<i>f.</i> 0.3	<i>f.</i> 0.3	<i>f.</i> 0.2	<i>f.</i> 0.2	<i>f.</i> 0.2	<i>f.</i> 0.2	<i>f.</i> 0.1	<i>f.</i> 0.1	<i>f.</i> 0.1	<i>f.</i> 0.1	<i>f.</i> 0.1	<i>f.</i> 0.1	<i>f.</i> 0.1
0 40	0.7	0.6	0.5	0.4	0.4	0.3	0.3	0.3	0.3	0.2	0.2	0.2	0.2	0.2
1 00	0.9	0.8	0.7	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3
1 20	1.0	1.0	0.9	0.8	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4
1 40	-----	1.0	1.0	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.4
2 00	-----	-----	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.6	0.5
2 20	-----	-----	-----	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.7	0.6	0.6
2 40	-----	-----	-----	-----	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.7
3 00	-----	-----	-----	-----	-----	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.8	0.7
3 20	-----	-----	-----	-----	-----	-----	1.0	1.0	1.0	0.9	0.9	0.9	0.8	0.8
3 40	-----	-----	-----	-----	-----	-----	-----	1.0	1.0	1.0	0.9	0.9	0.9	0.9
4 00	-----	-----	-----	-----	-----	-----	-----	-----	1.0	1.0	1.0	1.0	0.9	0.9
4 20	-----	-----	-----	-----	-----	-----	-----	-----	-----	1.0	1.0	1.0	1.0	0.8
4 40	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1.0	1.0	1.0	1.0
5 00	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1.0	1.0	1.0
5 20	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1.0	1.0
5 40	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1.0

TABLE B														
Interval between slack and maximum current														
	<i>h. m.</i> 1 20	<i>h. m.</i> 1 40	<i>h. m.</i> 2 00	<i>h. m.</i> 2 20	<i>h. m.</i> 2 40	<i>h. m.</i> 3 00	<i>h. m.</i> 3 20	<i>h. m.</i> 3 40	<i>h. m.</i> 4 00	<i>h. m.</i> 4 20	<i>h. m.</i> 4 40	<i>h. m.</i> 5 00	<i>h. m.</i> 5 20	<i>h. m.</i> 5 40
<i>h. m.</i> 0 20	<i>f.</i> 0.5	<i>f.</i> 0.4	<i>f.</i> 0.4	<i>f.</i> 0.3	<i>f.</i> 0.3	<i>f.</i> 0.3	<i>f.</i> 0.3	<i>f.</i> 0.3	<i>f.</i> 0.2	<i>f.</i> 0.2	<i>f.</i> 0.2	<i>f.</i> 0.2	<i>f.</i> 0.2	<i>f.</i> 0.2
0 40	0.8	0.7	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3
1 00	0.9	0.8	0.8	0.7	0.7	0.6	0.6	0.5	0.5	0.5	0.4	0.4	0.4	0.4
1 20	1.0	1.0	0.9	0.8	0.8	0.7	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.5
1 40	-----	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.7	0.6	0.6	0.6	0.6
2 00	-----	-----	1.0	1.0	0.9	0.9	0.9	0.8	0.8	0.7	0.7	0.7	0.7	0.6
2 20	-----	-----	-----	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.7	0.7	0.7	0.7
2 40	-----	-----	-----	-----	1.0	1.0	1.0	0.9	0.9	0.9	0.8	0.8	0.8	0.7
3 00	-----	-----	-----	-----	-----	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.8	0.8
3 20	-----	-----	-----	-----	-----	-----	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.8
3 40	-----	-----	-----	-----	-----	-----	-----	1.0	1.0	1.0	1.0	0.9	0.9	0.9
4 00	-----	-----	-----	-----	-----	-----	-----	-----	1.0	1.0	1.0	1.0	0.9	0.9
4 20	-----	-----	-----	-----	-----	-----	-----	-----	-----	1.0	1.0	1.0	1.0	0.9
4 40	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1.0	1.0	1.0	1.0
5 00	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1.0	1.0	1.0
5 20	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1.0	1.0
5 40	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	1.0

Use table A for all places except those listed below for table B.
 Use table B for Cape Cod Canal, Hell Gate, Chesapeake and Delaware Canal and all stations in table 2 which are referred to them.

1. From predictions find the time of slack water and the time and velocity of maximum current (flood or ebb), one of which is immediately before and the other after the time for which the velocity is desired.
2. Find the interval of time between the above slack and maximum current, and enter the top of table A or B with the interval which most nearly agrees with this value.
3. Find the interval of time between the above slack and the time desired, and enter the side of table A or B with the interval which most nearly agrees with this value.
4. Find, in the table, the factor corresponding to the above two intervals, and multiply the maximum velocity by this factor. The result will be the approximate velocity at the time desired.

TABLE 4.—DURATION OF SLACK

The predicted times of slack water given in this publication indicate the instant of zero velocity, which is only momentary. There is a period each side of slack water, however, during which the current is so weak that for practical purposes it may be considered as negligible.

The following tables give, for various maximum currents, the approximate period of time during which weak currents not exceeding 0.1 to 0.5 knot will be encountered. This duration includes the last of the flood or ebb and the beginning of the following ebb or flood, that is, half of the duration will be before and half after the time of slack water.

Table A should be used for all places *except* those listed below for table B.

Table B should be used for Cape Cod Canal, Hell Gate, Chesapeake and Delaware Canal, and all stations in table 2 which are referred to them.

Duration of weak current near time of slack water

TABLE A

Maximum current	Period with a velocity not more than—				
	0.1 knot	0.2 knot	0.3 knot	0.4 knot	0.5 knot
<i>Knots</i>	<i>Minutes</i>	<i>Minutes</i>	<i>Minutes</i>	<i>Minutes</i>	<i>Minutes</i>
1.0	23	46	70	94	120
1.5	15	31	46	62	78
2.0	11	23	35	46	58
3.0	8	15	23	31	38
4.0	6	11	17	23	29
5.0	5	9	14	18	23
6.0	4	8	11	15	19
7.0	3	7	10	13	16
8.0	3	6	9	11	14
9.0	3	5	8	10	13
10.0	2	5	7	9	11

TABLE B

Maximum current	Period with a velocity not more than—				
	0.1 knot	0.2 knot	0.3 knot	0.4 knot	0.5 knot
<i>Knots</i>	<i>Minutes</i>	<i>Minutes</i>	<i>Minutes</i>	<i>Minutes</i>	<i>Minutes</i>
1.0	13	23	46	65	89
1.5	8	18	28	39	52
2.0	6	13	20	22	36
3.0	4	8	13	18	22
4.0	3	6	9	13	17
5.0	3	5	8	10	13

When there is a difference between the velocities of the maximum flood and ebb preceding and following the slack for which the duration is desired, it will be sufficiently accurate for practical purposes to find a separate duration for each maximum velocity and take the average of the two as the duration of the weak current.

TABLE 5.—ROTARY TIDAL CURRENTS

EXPLANATION

Offshore and in some of the wider indentations of the coast, the tidal current is quite different from that found in the more protected bays and rivers. In these inside waters the tidal current is of the reversing type. It sets in one direction for a period of about 6 hours after which it ceases to flow momentarily and then sets in the opposite direction during the following 6 hours. Offshore the current, not being confined to a definite channel, changes its direction continually and never comes to a slack, so that in a tidal cycle of about 12½ hours it will have set in all directions of the compass. This type of current is therefore called a *rotary current*.

A characteristic feature of the rotary current is the absence of slack water. Although the current generally varies from hour to hour, this variation from greatest current to least current and back again to greatest current does not give rise to a period of slack water. When the velocity of the rotary tidal current is least, it is known as the minimum current, and when it is greatest it is known as the maximum current. The minimum and maximum velocities of the rotary current are thus related to each other in the same way as slack and strength of current, a minimum velocity of the current following a maximum velocity by an interval of about 3 hours and being followed in turn by another maximum after a further interval of 3 hours.

In the following table there are given for a number of offshore stations the direction and average velocity of the rotary tidal current for each hour of the tidal cycle referred to predictions for a station in table 1. All times are eastern standard for the 75th meridian.

The velocities given in the table are average. The Moon at new, full, or perigee tends to increase the velocities 15 to 20 percent above average. When perigee occurs at or near the time of new or full Moon the velocities will be 30 to 40 percent above average. Quadrature and apogee tend to decrease the velocities below average by 15 to 20 percent. When apogee occurs at or near quadrature they will be 30 to 40 percent below average. The velocities will be about average when apogee occurs at or near the time of new or full Moon and also when perigee occurs at or near quadrature. (See table of astronomical data.)

The direction of the current is given in degrees, *true*, reading clockwise from 0° at north, and is the direction *toward* which the water is flowing.

The velocities and directions are for the tidal current only and do not include the effect of winds. When a wind is blowing, a wind-driven current will be set up which will be in addition to the tidal current, and the actual current encountered will be a combination of the wind-driven current and tidal current. See the chapters on "Wind-Driven Currents" and "The Combination of Currents."

As an example, in the following table the current at Nantucket Shoals is given for each hour after maximum flood at Pollock Rip Channel. Suppose it is desired to find the direction and velocity of the current at Nantucket Shoals at 3:15 p.m. (15:15) eastern standard time on a day when maximum flood at Pollock Rip Channel is predicted in table 1 to occur at 13:20 eastern standard time. The desired time is therefore about 2 hours after maximum flood at Pollock Rip Channel, and from the following table the tidal current at Nantucket Shoals at this time is setting 15° *true* with an average velocity of 0.8 knot. If this day is near the time of new Moon and about halfway between apogee and perigee, then the distance effect of the Moon will be nil and the phase effect alone will operate to increase the velocity by about 15 percent, to 0.9 knot. If a wind has been blowing, determine the direction and velocity of the wind-driven current from the chapter on "Wind-Driven Currents" and combine it with the above tidal current as explained in the chapter on "The Combination of Currents."

Caution.—Velocities from $1\frac{1}{2}$ to 3 knots have been observed at most of the stations in this table. Near Diamond Shoal Light a velocity of 4 knots has been recorded.

At some offshore stations, such as near the entrance to Chesapeake Bay, the tidal current is directed alternately toward and away from the bay entrance with intervening periods of slack water, so that it is essentially a reversing current. For such places, differences for predicting are given in table 2.

TABLE 5.—ROTARY TIDAL CURRENTS

Georges Bank Lat. 41°50' N., long. 66°37' W.			Georges Bank Lat. 41°54' N., long. 67°08' W.			Georges Bank Lat. 41°48' N., long. 67°34' W.		
Time	Direction (true)	Velocity	Time	Direction (true)	Velocity	Time	Direction (true)	Velocity
	<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>
Hours after maximum flood at Pollock Rip Channel, see page 28			Hours after maximum flood at Pollock Rip Channel, see page 28			Hours after maximum flood at Pollock Rip Channel, see page 28		
0	285	0.9	0	298	1.1	0	325	1.5
1	304	1.1	1	325	1.4	1	332	2.1
2	324	1.2	2	344	1.5	2	342	2.0
3	341	1.1	3	0	1.2	3	358	1.3
4	10	1.0	4	33	0.7	4	35	0.7
5	43	0.9	5	82	0.8	5	99	0.8
6	89	1.0	6	118	1.1	6	126	1.3
7	127	1.2	7	138	1.5	7	150	2.0
8	147	1.8	8	153	1.2	8	159	1.9
9	172	1.4	9	178	1.1	9	169	1.7
10	197	0.9	10	208	0.8	10	197	1.2
11	232	0.8	11	236	0.8	11	275	0.9
Georges Bank Lat. 41°42' N., long. 67°37' W.			Georges Bank Lat. 41°41' N., long. 67°49' W.			Georges Bank Lat. 41°30' N., long. 68°07' W.		
Time	Direction (true)	Velocity	Time	Direction (true)	Velocity	Time	Direction (true)	Velocity
	<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>
Hours after maximum flood at Pollock Rip Channel, see page 28			Hours after maximum flood at Pollock Rip Channel, see page 28			Hours after maximum flood at Pollock Rip Channel, see page 28		
0	316	1.1	0	318	1.8	0	312	1.8
1	341	1.3	1	320	1.8	1	338	1.7
2	356	1.0	2	325	1.4	2	346	1.5
3	16	0.8	3	330	0.8	3	14	1.1
4	43	0.8	4	67	0.3	4	58	0.9
5	92	0.8	5	111	0.8	5	99	0.9
6	122	1.0	6	117	1.5	6	123	1.3
7	146	1.1	7	126	1.7	7	144	1.7
8	170	1.1	8	144	1.7	8	160	1.6
9	195	1.0	9	160	1.1	9	187	1.3
10	215	1.0	10	242	0.6	10	244	1.0
11	272	0.9	11	292	1.2	11	274	1.1
Georges Bank Lat. 41°29' N., long. 67°04' W.			Georges Bank Lat. 41°14' N., long. 67°33' W.			Georges Bank Lat. 41°13' N., long. 68°20' W.		
Time	Direction (true)	Velocity	Time	Direction (true)	Velocity	Time	Direction (true)	Velocity
	<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>
Hours after maximum flood at Pollock Rip Channel, see page 28			Hours after maximum flood at Pollock Rip Channel, see page 28			Hours after maximum flood at Pollock Rip Channel, see page 28		
0	277	1.0	0	305	1.4	0	319	1.5
1	302	1.2	1	332	1.6	1	332	2.0
2	329	1.4	2	355	1.6	2	345	1.4
3	348	1.3	3	15	1.4	3	9	0.8
4	15	1.2	4	38	1.1	4	42	0.6
5	48	1.1	5	77	0.9	5	80	0.7
6	85	1.2	6	112	1.2	6	118	1.0
7	122	1.4	7	141	1.6	7	138	1.3
8	145	1.5	8	162	1.6	8	154	1.4
9	166	1.3	9	187	1.5	9	169	1.5
10	194	1.2	10	214	1.4	10	188	1.3
11	223	1.1	11	252	1.2	11	236	0.9
Georges Bank Lat. 40°48' N., long. 67°40' W.			Georges Bank Lat. 40°49' N., long. 68°34' W.			Great South Channel, Georges Bank Lat. 40°31' N., long. 68°47' W.		
Time	Direction (true)	Velocity	Time	Direction (true)	Velocity	Time	Direction (true)	Velocity
	<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>
Hours after maximum flood at Pollock Rip Channel, see page 28			Hours after maximum flood at Pollock Rip Channel, see page 28			Hours after maximum flood at Pollock Rip Channel, see page 28		
0	304	0.9	0	301	1.3	0	320	0.7
1	340	0.9	1	326	1.5	1	331	0.9
2	353	0.8	2	345	1.4	2	342	1.1
3	29	0.6	3	8	1.1	3	3	1.0
4	56	0.6	4	36	0.8	4	23	0.8
5	83	0.6	5	69	0.8	5	63	0.4
6	107	0.9	6	103	1.0	6	129	0.7
7	140	1.0	7	139	1.4	7	140	0.9
8	156	1.0	8	153	1.5	8	164	1.0
9	175	0.9	9	175	1.4	9	179	1.0
10	202	0.8	10	201	1.1	10	190	0.8
11	245	0.8	11	237	0.9	11	221	0.6

TABLE 5.—ROTARY TIDAL CURRENTS

Nantucket Shoals Lat. 40°37' N., long. 69°37' W.			Great South Channel, Georges Bank Lat. 41°10' N., long. 68°58' W.			Davis Bank, Nantucket Shoals, 15 miles SE. of Nantucket I. Lat. 41°07' N., long. 69°41' W.		
Time	Direction (true)	Velocity	Time	Direction (true)	Velocity	Time	Direction (true)	Velocity
	<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>
Hours after maximum flood at Pollock Rip Channel, see page 28			Hours after maximum flood at Pollock Rip Channel, see page 28			Hours after maximum flood at Pollock Rip Channel, see page 28		
0	323	0.6	0	318	0.5	0	15	1.5
1	355	0.7	1	349	0.7	1	28	2.1
2	15	0.8	2	352	1.1	2	32	2.4
3	38	0.8	3	356	1.0	3	35	2.1
4	55	0.8	4	359	0.7	4	37	1.1
5	85	0.7	5	18	0.4	5	128	0.4
6	125	0.6	6	106	0.4	6	197	1.2
7	162	0.7	7	157	0.7	7	204	1.9
8	192	0.8	8	165	1.0	8	205	2.2
9	212	0.8	9	173	1.0	9	206	2.2
10	232	0.8	10	180	0.8	10	213	1.6
11	257	0.7	11	204	0.6	11	307	0.7
Davis Bank, Nantucket Shoals (west), 15 miles SE. of Nantucket I. Lat. 41°03' N., long. 69°47' W.			Davis Bank, Nantucket Shoals (middle), 17.5 miles SE. of Nantucket I. Lat. 41°02' N., long. 69°43' W.			Davis Bank, Nantucket Shoals (east), 18.5 miles SE. of Nantucket I. Lat. 41°02' N., long. 69°41' W.		
Time	Direction (true)	Velocity	Time	Direction (true)	Velocity	Time	Direction (true)	Velocity
	<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>
Hours after maximum flood at Pollock Rip Channel, see page 28			Hours after maximum flood at Pollock Rip Channel, see page 28			Hours after maximum flood at Pollock Rip Channel, see page 28		
0	346	0.9	0	23	0.8	0	30	0.6
1	28	1.2	1	27	1.5	1	36	1.3
2	47	1.3	2	28	1.9	2	38	1.5
3	73	1.1	3	29	1.8	3	50	1.4
4	103	0.8	4	46	1.1	4	80	1.1
5	132	0.9	5	115	0.4	5	105	0.8
6	182	0.8	6	191	1.2	6	178	0.6
7	215	1.2	7	202	1.9	7	230	1.3
8	240	1.1	8	215	1.7	8	235	1.7
9	251	0.9	9	225	1.5	9	238	1.4
10	267	0.7	10	233	0.9	10	241	1.0
11	302	0.7	11	270	0.2	11	265	0.3
Nantucket Island, 28 miles east of Lat. 41°20' N., long. 69°21' W.			Monomoy Point, 23 miles east of Lat. 41°35' N., long. 69°30' W.			Nauset Beach Light, 5 miles NE. of Lat. 41°56' N., long. 69°54' W.		
Time	Direction (true)	Velocity	Time	Direction (true)	Velocity	Time	Direction (true)	Velocity
	<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>
Hours after maximum flood at Pollock Rip Channel, see page 28			Hours after maximum flood at Pollock Rip Channel, see page 28			Hours after maximum flood at Pollock Rip Channel, see page 28		
0	19	0.9	0	320	0.7	0	315	0.5
1	7	1.3	1	324	1.0	1	327	0.6
2	349	1.4	2	326	0.9	2	340	0.5
3	351	1.1	3	330	0.7	3	357	0.2
4	334	0.5	4	334	0.3	4	16	0.1
5	221	0.3	5	144	0.1	5	124	0.2
6	198	0.3	6	145	0.5	6	132	0.4
7	185	1.1	7	146	0.8	7	135	0.6
8	184	1.1	8	147	0.9	8	139	0.6
9	184	0.9	9	148	0.8	9	145	0.4
10	183	0.7	10	150	0.4	10	269	0.2
11	60	0.1	11	230	0.1	11	297	0.2
Great Round Shoal Channel entrance Nantucket Sound entrance. Lat. 41°26' N., long. 69°44' W.			Great Round Shoal Channel Buoy 9, 0.3 mile NE. of Lat. 41°24' N., long. 69°53' W.			Great Round Shoal Channel, 4 miles NE. of Great Pt., Nantucket Sound. Lat. 41°26' N., long. 69°59' W.		
Time	Direction (true)	Velocity	Time	Direction (true)	Velocity	Time	Direction (true)	Velocity
	<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>
Hours after maximum flood at Pollock Rip Channel, see page 28			Hours after maximum flood at Pollock Rip Channel, see page 28			Hours after maximum flood at Pollock Rip Channel, see page 28		
0	32	1.6	0	47	1.0	0	80	0.8
1	45	1.4	1	60	1.3	1	88	1.1
2	68	1.3	2	70	1.3	2	96	1.3
3	95	1.1	3	91	0.8	3	104	1.0
4	140	0.9	4	183	0.5	4	129	0.5
5	192	1.2	5	211	0.7	5	213	0.5
6	210	1.5	6	234	0.9	6	267	1.1
7	220	1.5	7	247	1.3	7	275	1.4
8	235	1.2	8	252	1.1	8	280	1.2
9	284	0.9	9	269	0.9	9	284	0.7
10	303	0.8	10	303	0.3	10	328	0.2
11	350	1.2	11	35	0.4	11	42	0.4

TABLE 5.—ROTARY TIDAL CURRENTS

Cuttyhunk I., 3¼ miles SW. of Lat. 41°23' N., long. 71°00' W.			Gooseberry Neck, 2 miles SSE. of Buzzards Bay entrance, Lat. 41°27' N., long. 71°01' W.			Browns Ledge, Massachusetts. Lat. 41°20' N., long. 71°05' W.		
Time	Direction (true)	Velocity	Time	Direction (true)	Velocity	Time	Direction (true)	Velocity
	<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>
Hours after maximum flood at Follock Rip Channel, see page 28			Hours after maximum flood at Follock Rip Channel, see page 28			Hours after maximum flood at Follock Rip Channel, see page 28		
0	356	0.4	0	52	0.6	0	330	0.3
1	15	0.3	1	65	0.4	1	12	0.3
2	80	0.2	2	108	0.2	2	28	0.3
3	123	0.3	3	168	0.3	3	104	0.4
4	146	0.5	4	210	0.4	4	118	0.4
5	158	0.5	5	223	0.5	5	123	0.4
6	173	0.4	6	232	0.5	6	168	0.3
7	208	0.3	7	249	0.3	7	205	0.2
8	267	0.2	8	274	0.2	8	201	0.3
9	306	0.3	9	321	0.2	9	270	0.3
10	322	0.3	10	16	0.3	10	232	0.4
11	335	0.4	11	38	0.5	11	318	0.5
Point Judith, Harbor of Refuge, Block Island Sound (west entrance). Lat. 41°22' N., long. 71°31' W.			Point Judith, 4.5 miles SW. of, Block Island Sound. Lat. 41°18' N., long. 71°33' W.			Grace Point, 2 miles NW. of, Block Island Sound. Lat. 41°12' N., long. 71°35' W.		
Time	Direction (true)	Velocity	Time	Direction (true)	Velocity	Time	Direction (true)	Velocity
	<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>
Hours after maximum flood at The Race, see page 34			Hours after maximum flood at The Race, see page 34			Hours after maximum flood at The Race, see page 34		
0	197	0.2	0	264	0.6	0	304	0.2
1	160	0.2	1	270	0.6	1	2	0.2
2	151	0.4	2	270	0.5	2	28	0.4
3	159	0.5	3	280	0.2	3	28	0.6
4	146	0.5	4	62	0.2	4	37	0.7
5	124	0.5	5	70	0.6	5	71	0.6
6	109	0.4	6	78	0.7	6	86	0.6
7	104	0.2	7	95	0.5	7	126	0.4
8	90	0.1	8	105	0.3	8	137	0.2
9	30	0.1	9	120	0.1	9	213	0.1
10	336	0.1	10	286	0.1	10	256	0.1
11	209	0.1	11	277	0.3	11	267	0.1
Little Gull I., 3.7 miles ESE. of, Block Island Sound. Lat. 41°11' N., long. 72°02' W.			Sandy Hook Approach Lighted Horn Buoy 2A, 0.2 mile W. of Lat. 40°27' N., long. 73°55' W.			Fenwick Shoal Lighted Whistle Buoy 2 off Delaware coast, Lat. 38°25' N., long. 74°45' W.		
Time	Direction (true)	Velocity	Time	Direction (true)	Velocity	Time	Direction (true)	Velocity
	<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>
Hours after maximum flood at The Race, see page 34			Hours after maximum flood at The Narrows, N. Y. Harb., see page 46			Hours after maximum flood at Delaware Bay Entrance, see page 32		
0	271	0.8	0	313	0.4	0	342	0.2
1	284	0.5	1	325	0.3	1	349	0.2
2	320	0.2	2	356	0.2	2	357	0.1
3	68	0.2	3	55	0.2	3	43	0.1
4	77	0.7	4	94	0.3	4	110	0.1
5	95	1.1	5	118	0.4	5	135	0.2
6	118	1.6	6	136	0.6	6	150	0.3
7	128	1.3	7	147	0.5	7	165	0.3
8	150	0.6	8	177	0.2	8	185	0.2
9	171	0.2	9	256	0.2	9	226	0.1
10	221	0.4	10	290	0.3	10	282	0.1
11	228	0.7	11	298	0.4	11	318	0.2
*Frying Pan Shoals, off Cape Fear, Lat. 33°34' N., long. 77°49' W.			Cape Romain, 5 miles SE. of Lat. 32°57' N., long. 79°17' W.			Cape Romain, 6.9 miles SW. of Lat. 32°54' N., long. 79°28' W.		
Time	Direction (true)	Velocity	Time	Direction (true)	Velocity	Time	Direction (true)	Velocity
	<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>		<i>Degrees</i>	<i>Knots</i>
Hours after maximum flood at Charleston Harbor, see page 76			Hours after maximum flood at Charleston Harbor, see page 76			Hours after maximum flood at Charleston Harbor, see page 76		
0	335	0.3	0	6	0.2	0	317	0.3
1	10	0.2	1	38	0.2	1	350	0.2
2	50	0.2	2	55	0.3	2	19	0.2
3	90	0.3	3	67	0.3	3	71	0.3
4	110	0.3	4	93	0.3	4	115	0.3
5	128	0.3	5	114	0.3	5	111	0.3
6	150	0.3	6	167	0.3	6	132	0.2
7	188	0.3	7	212	0.2	7	160	0.2
8	235	0.3	8	242	0.3	8	216	0.2
9	268	0.3	9	244	0.4	9	251	0.2
10	290	0.3	10	262	0.3	10	266	0.3
11	305	0.3	11	292	0.3	11	303	0.3

* Current during June-August usually sets eastward, average velocity ½ knot.

TABLE 5.—ROTARY TIDAL CURRENTS

Capers Inlet, 1.9 miles east of Lat. 32°50' N., long. 79°40' W.			Capers Inlet, 3.6 miles SE. of Lat. 32°49' N., long. 79°38' W.			Charleston Entrance, 37 miles east of Lat. 32°42' N., long. 79°06' W.		
Time	Direction (true)	Velocity	Time	Direction (true)	Velocity	Time	Direction (true)	Velocity
	Degrees	Knots		Degrees	Knots		Degrees	Knots
Hours after maximum flood at Charleston Harbor, see page 76			Hours after maximum flood at Charleston Harbor, see page 76			Hours after maximum flood at Charleston Harbor, see page 76		
0	12	0.1	0	302	0.2	0	328	0.3
1	58	0.1	1	357	0.1	1	350	0.3
2	32	0.2	2	34	0.1	2	20	0.3
3	53	0.2	3	17	0.1	3	63	0.3
4	67	0.1	4	89	0.1	4	95	0.3
5	98	0.1	5	94	0.1	5	118	0.3
6	129	0.1	6	112	0.2	6	140	0.3
7	214	0.1	7	116	0.2	7	163	0.3
8	222	0.2	8	189	0.1	8	195	0.3
9	254	0.2	9	249	0.2	9	235	0.3
10	248	0.1	10	268	0.2	10	268	0.3
11	247	0.1	11	282	0.2	11	295	0.3
Charleston Lighted Whistle Buoy 2C, off Charleston Harbor entrance. Lat. 32°41' N., long. 79°43' W.			Folly Island, 2 miles east of Lat. 32°39' N., long. 79°52' W.			Folly Island, 3.5 miles east of Lat. 32°38' N., long. 79°50' W.		
Time	Direction (true)	Velocity	Time	Direction (true)	Velocity	Time	Direction (true)	Velocity
	Degrees	Knots		Degrees	Knots		Degrees	Knots
Hours after maximum flood at Charleston Harbor, see page 76			Hours after maximum flood at Charleston Harbor, see page 76			Hours after maximum flood at Charleston Harbor, see page 76		
0	300	0.2	0	346	0.1	0	322	0.1
1	352	0.3	1	24	0.2	1	47	0.2
2	17	0.1	2	58	0.3	2	69	0.3
3	55	0.2	3	76	0.3	3	86	0.3
4	71	0.3	4	102	0.3	4	96	0.3
5	92	0.3	5	121	0.2	5	115	0.3
6	117	0.3	6	154	0.1	6	148	0.1
7	153	0.3	7	222	0.3	7	215	0.1
8	207	0.3	8	256	0.3	8	250	0.3
9	242	0.2	9	256	0.3	9	260	0.3
10	260	0.3	10	271	0.3	10	265	0.2
11	275	0.3	11	290	0.2	11	285	0.1
Martins Industry, 5 miles east of, off Port Royal Sound. Lat. 32°08' N., long. 80°23' W.			Savannah Light, 1.2 miles SE. of Lat. 31°57' N., long. 80°40' W.			Brunswick Lighted Whistle Buoy 2B, off St. Simons Sound. Lat. 31°00' N., long. 81°10' W.		
Time	Direction (true)	Velocity	Time	Direction (true)	Velocity	Time	Direction (true)	Velocity
	Degrees	Knots		Degrees	Knots		Degrees	Knots
Hours after maximum flood at Charleston Harbor, see page 76			Hours after maximum flood at Savannah River Entrance, see page 82			Hours after maximum flood at Miami Har- bor Entrance, see page 94		
0	282	0.4	0	298	0.3	0	308	0.3
1	293	0.3	1	308	0.2	1	340	0.2
2	330	0.1	2	326	0.1	2	42	0.1
3	30	0.1	3	45	0.1	3	90	0.3
4	75	0.3	4	60	0.2	4	111	0.3
5	92	0.4	5	107	0.3	5	122	0.4
6	102	0.5	6	114	0.3	6	150	0.3
7	110	0.4	7	123	0.3	7	141	0.3
8	140	0.2	8	145	0.3	8	220	0.2
9	300	0.3	9	213	0.1	9	266	0.1
10	250	0.3	10	267	0.3	10	289	0.4
11	271	0.4	11	283	0.3	11	297	0.4
Miami Outer Bay Cut Entrance Lat. 25°48' N., long. 80°06' W.								
Time	Direction (true)	Velocity						
	Degrees	Knots						
Hours after maximum flood at Miami Har- bor Entrance, see page 94								
0	338	0.1						
1	319	0.1						
2	352	0.1						
3	18	0.1						
4	36	0.1						
5	30	0.2						
6	25	0.1						
7	32	0.1						
8	25	0.1						
9	26	0.1						
10	6	0.2						
11	355	0.1						

- Fire Island Inlet, N. Y., 22 miles south of:*
Tidal current is weak, averaging about 0.1 knot at strength.
- Fire Island Lighted Whistle Buoy 2 FI:*
Tidal current is weak, averaging about 0.2 knot at strength.
- Ambrose Light, New York Harbor entrance:*
Tidal current is weak, averaging about 0.2 knot at strength.
- Cape May, N. J., 72 miles east of:*
Tidal current is weak, averaging about 0.1 knot at strength.
- Five-Fathom Bank Northeast Lighted Whistle Buoy 2 FB:*
Tidal current is weak, averaging about 0.2 knot at strength.
- Winter-Quarter Shoal Lighted Whistle Buoy 6WQS, 9.2 miles SE. of, off Assateague I.:*
Tidal current is weak, averaging less than 0.1 knot.
- Cape Charles, 70 miles east of:*
Tidal current is weak, averaging about 0.2 knot at strength.
- Chesapeake Light, 4.4 miles NE. of, off Chesapeake Bay entrance, Va.:*
Tidal current is weak and variable.
- Cape Lookout Shoals Lighted Whistle Buoy 14:*
Tidal current is weak, averaging about 0.2 knot at strength. Current during June-August usually sets eastward, average velocity $\frac{1}{2}$ knot.
- Ocracoke Inlet, 3 $\frac{1}{2}$ miles SSE. of:*
Tidal current is weak, averaging about 0.1 knot at strength.
- Diamond Shoal Light, 3.9 miles SSW. of:*
Tidal current is weak, averaging less than 0.1 knot at strength. Current during June-August usually sets northeastward, average velocity $\frac{1}{4}$ knot.
- Frying Pan Shoals Light, 14.3 miles NW. of:*
Tidal current is weak, averaging about 0.2 knot at strength. Current during June-August usually sets eastward, average velocity $\frac{1}{2}$ knot.
- St. Johns Point, 5 miles east of, Fla.:*
Tidal current is weak, averaging about 0.2 knot at strength.
- Fowey Rocks Light, 1.5 miles SW. of:*
Tidal current is weak and variable.

THE GULF STREAM

The region where the Gulf of Mexico narrows to form the channel between Florida Keys and Cuba may be regarded as the head of the Gulf Stream. From this region the stream sets eastward and northward through the Straits of Florida, and after passing Little Bahama Bank it continues northward and then northeastward, following the general direction of the 100-fathom curve as far as Cape Hatteras. The flow in the Straits is frequently referred to as the Florida Current.

Shortly after emerging from the Straits of Florida, the stream is joined by the Antilles Current, which flows northwesterly along the open ocean side of the West Indies before uniting with the water which has passed through the straits. Beyond Cape Hatteras the combined current turns more and more eastward under the combined effects of the deflecting force of the Earth's rotation and the eastwardly trending coastline, until the region of the Grand Banks of Newfoundland is reached.

Eastward of the Grand Banks the whole surface is slowly driven eastward and northeastward by the prevailing westerly winds to the coastal waters of northwestern Europe. For distinction, this broad and variable wind-driven surface movement is sometimes referred to as the North Atlantic Drift or Gulf Stream Drift.

In general, the Gulf Stream as it issues into the sea through the Straits of Florida may be characterized as a swift, highly saline current of blue water whose upper stratum is composed of warm water.

On its western or inner side, the Gulf Stream is separated from the coastal waters by a zone of rapidly falling temperature, to which the term "cold wall" has been applied. It is most clearly marked north of Cape Hatteras but extends, more or less well defined, from the Straits to the Grand Banks.

Throughout the whole stretch of 400 miles in the Straits of Florida, the stream flows with considerable velocity. Abreast of Havana, the average surface velocity in the axis of the stream is about $2\frac{1}{2}$ knots. As the cross-sectional area of the stream decreases, the velocity increases gradually, until abreast of Cape Florida it becomes about $3\frac{1}{2}$ knots. From this point within the narrows of the straits, the velocity along the axis gradually decreases to about $2\frac{1}{2}$ knots off Cape Hatteras, N.C. These values are for the axis of the stream where the current is a maximum, the velocity of the stream decreasing gradually from the axis as the edges of the stream are approached. The velocity of the stream, furthermore, is subject to fluctuations brought about by variations in winds and barometric pressure.

The following tables give the mean surface velocity of the Gulf Stream in two cross sections in the Straits of Florida:

*Between Rebecca Shoal
and Cuba*

Distance south of Rebecca Shoal	Mean surface velocity observed
<i>Nautical miles</i>	<i>Knots</i>
20	0.3
35	0.7
50	2.2
68	2.2
86	0.8

*Between Fowey Rocks and Gun
Cay*

Distance east of Fowey Rocks	Mean surface velocity observed
<i>Nautical miles</i>	<i>Knots</i>
8	2.7
$11\frac{1}{2}$	3.5
15	3.2
22	2.7
29	2.1
36	1.7

Crossing the Gulf Stream at Jupiter or Fowey Rocks, an average allowance of $2\frac{1}{2}$ knots in a northerly direction should be made for the current.

Crossing the stream from Havana, a fair allowance for the average current between 100-fathom curves is 1.1 knots in an east-north-easterly direction.

From within the straits, the axis of the Gulf Stream runs approximately parallel with the 100-fathom curve as far as Cape Hatteras. Since this stretch of coast line sweeps northward in a sharper curve than does the 100-fathom line, the stream lies at varying distances from the shore. The lateral boundaries of the current within the straits are fairly well fixed, but when the stream flows into the sea the eastern boundary becomes somewhat vague. On the western side, the limits can be defined approximately since the waters of the stream differ in color, temperature, salinity, and flow from the inshore coastal waters. On the east, however, the Antilles Current combines with the Gulf Stream, so that its waters here merge gradually with the waters of the open Atlantic. Observations of the National Ocean Survey indicate that, in general, the average position of the inner edge of the Gulf Stream as far as Cape Hatteras lies inside the 50-fathom curve. The Gulf Stream, however, shifts somewhat with the seasons, and is considerably influenced by the winds which cause fluctuations in its position, direction, and velocity; consequently, any limits which are assigned refer to mean or average positions.

The approximate mean positions of the inner edge and axis (point where greatest velocity may be found) are indicated in the following table:

Approximate mean position of the Gulf Stream

Locality	Inner edge	Axis
	Nautical miles	Nautical miles
North of Havana, Cuba.....		25
Southeast of Key West, Fla.....		45
East of Fowey Rocks, Fla.....		10
East of Miami Beach, Fla.....		15
East of Palm Beach, Fla.....		15
East of Jupiter Inlet, Fla.....		20
East of Cape Canaveral, Fla.....	10	45
East of Daytona Beach, Fla.....	25	75
East of Ormond Beach, Fla.....	25	75
East of St. Augustine, Fla. (coast line).....	40	85
East of Jacksonville, Fla. (coast line).....	55	90
Southeast of Savannah, Ga. (coast line).....	65	95
Southeast of Charleston, S. C. (coast line).....	55	90
Southeast of Myrtle Beach, S. C.....	60	100
Southeast of Cape Fear, N. C. (light).....	35	75
Southeast of Cape Lookout, N. C. (light).....	20	50
Southeast of Cape Hatteras, N. C.....	10	35
Southeast of Virginia Beach, Va.....	85	115
Southeast of Atlantic City, N. J.....	120	
Southeast of Sandy Hook, N. J.....	150	

At the western end of the Straits of Florida the limits of the Gulf Stream are not well defined, and for this reason the location of the inner edge has been omitted for Havana, Cuba, and Key West, Fla., in the above table. Between Fowey Rocks and Jupiter Inlet the inner edge is deflected westward and lies very close to the shore line.

Along the Florida Reefs between Alligator Reef and Dry Tortugas the distance of the northerly edge of the Gulf Stream from the edge of the reefs gradually increases toward the west. Off Alligator Reef it is quite close inshore, while off Rebecca Shoal and Dry Tortugas it is possibly 15 to 20 miles south of the 100-fathom curve. Between the reefs and the northern edge of the Gulf Stream the currents are ordinarily tidal and are subject at all times to considerable modification by local winds and barometric conditions. This neutral zone varies in both length and breadth; it may extend along the reefs a greater or less distance than stated, and its width varies as the northern edge of the Gulf Stream approaches or recedes from the reefs.

The approximate position of the axis of the Gulf Stream for various regions is shown on the following National Ocean Survey Charts: No. 1002, Straits of Florida; No. 1007, South Carolina to Cuba; No. 1112, Cape Canaveral to Key West; No. 1113, Alligator Reef to Havana. Chart No. 1001 shows the axis and the position of the inner edge of the Gulf Stream from Cape Hatteras to Straits of Florida.

WIND-DRIVEN CURRENTS

A wind continuing for some time will produce a current the velocity of which depends on the velocity of the wind, and unless the current is deflected by some other cause, the deflective force of the earth's rotation will cause it to set to the right of the direction of the wind in the northern hemisphere and to the left in the southern hemisphere.

The current produced at off-shore locations by local winds of various strengths and directions has been investigated from observations made at 20 lightships (some of which have since been moved) from Portland, Maine, to St. Johns River, Fla. The observations were made hourly and varied in length from 1 to 2 years at most of the locations to 5½ years at Nantucket Shoals and 9 years at Diamond Shoal. The averages obtained are given below and may prove helpful in estimating the probable current that may result from various winds at the several locations.

Caution.—There were of course many departures from these averages of velocity and direction, for the wind-driven current often depends not only on the length of time the wind blows but also on factors other than the local wind at the time and place of the current. The mariner must not, therefore, assume that the given wind will always produce the indicated current.

It should be remembered, too, that the current which a vessel experiences at any time is the resultant of the combined actions of the tidal current, the wind-driven current, and any other currents such as the Gulf Stream or currents due to river discharge.

Velocity.—The table below shows the average velocity of the current due to winds of various strengths.

<i>Wind velocity (miles per hour).....</i>	10	20	30	40	50
<i>Average current velocity (knots) due to wind at following lightship stations:</i>					
Boston and Barnegat.....	0.1	0.1	0.2	0.3	0.3
Diamond Shoal and Cape Lookout Shoals.....	0.5	0.6	0.7	0.8	1.0
All other locations.....	0.2	0.3	0.4	0.5	0.6

Direction.—The position of the shore line with respect to the station influences considerably the direction of the currents due to certain winds. The following table shows for each station the average number of degrees by which the wind-driven current is deflected to the right or left (—) of the wind. Thus at Cape Lookout Shoals the table indicates that with a north wind the wind-driven current flows on the average 030° west of south, and with an east wind it flows 029° south of west.

Average deviation of current to right of wind direction

[A minus sign (-) indicates that the current sets to the left of the wind]

Wind from.....			N.	NNE.	NE.	ENE.	E.	ESE.	SE.	SSE.	S.	SSW.	SW.	WSW.	W.	WNW.	NW.	NNW.
<i>Old Lightship Stations</i>																		
	Lat.	Long.																
	° ' "	° ' "	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
Portland.....	43 32	70 06	24	14	9	8	-2	-14	0	26	15	18	18	24	15	34	13	18
Boston.....	42 20	70 45		-1		21		32		29		20		2		19		15
Pollock Rip Shoal.....	41 37	69 54	0	5	48	-38	30	-53	-24	-75	-25	167	70	59	36	53	20	19
Nantucket Shoals.....	40 37	69 37	44	46	28	24	9	16	12	3	25	0	6	18	30	39	41	48
Hen and Chickens.....	41 27	71 01	16	14	-7	-1	-14	3	-39	-36	25	55	35	30	20	16		8
Brenton Reef.....	41 26	71 23	34	25	22	19	25	1	-7	8	27	48	23	41	41	31	21	24
Fire Island.....	40 29	73 11	35	23	15	8	2	-17	31	55	40	41	31	14	-2	0	25	37
Ambrose Channel.....	40 27	73 49	36	40	21	11	18	72	27	112	82	70	63	46	37	22	23	21
Scotland.....	40 27	73 55	16	-12	-26	-36	-61	-36	-92	-150	90	33	77	44	15	30	27	13
Barneget.....	39 46	73 56	6	5	-13	-9	-16	-7	33	54	55	30	14	8	0	-5	21	29
Northeast End.....	38 58	74 30	30	14	-3	-11	-20	-31	-42	-28	37	44	25	18	7	16	25	18
Overfalls.....	38 48	75 01	28	-6	-1	2	-40	-56	-78	-22	68	28	55	54	32	31	32	45
Winter-Quarter Shoal.....	37 55	74 56	18	-1	-5	-21	-27	-35	-19	31	23	20	4	14	9	8	28	27
Chesapeake.....	36 50	75 42	18	-2	-4	5	-6	23	73	71	57	38	27	26	22	18	15	22
Diamond Shoal.....	35 05	75 20	11	3	-3	36	65	88	74	52	40	22	7	-10	-13	-17	-25	-4
Cape Lookout Shoals.....	34 18	76 24	30	24	2	2	-29		21	80	54	31	32	21	2	18	5	-5
Frying Pan Shoals.....	33 34	77 49	34	34	18	6	2	9	48	55	48	38	26	14	-7	-12	-27	-6
Savannah.....	31 57	80 40	12	12	-9	-18	-23	-46	17	50	43	17	7	-8	-10	7	15	33
Brunswick.....	31 00	81 10	17	-2	-16	-28	-18	-21	37	29	23	2	6	-21	-21	-26	16	18
St. Johns.....	30 23	81 18	3	-12	-27	-47	-84	30	35	26	26	27	1	16	-8	-17	6	8

THE COMBINATION OF CURRENTS

In determining from the current tables the velocity and direction of the current at any time, it is frequently necessary to combine the tidal current with the wind-driven current. The following methods indicate how the resultant of two or more currents may be easily determined.

Currents in the same direction.—When two or more currents set in the same direction it is a simple matter to combine them. The resultant current will have a velocity which is equal to the sum of all the currents and it will set in the same direction.

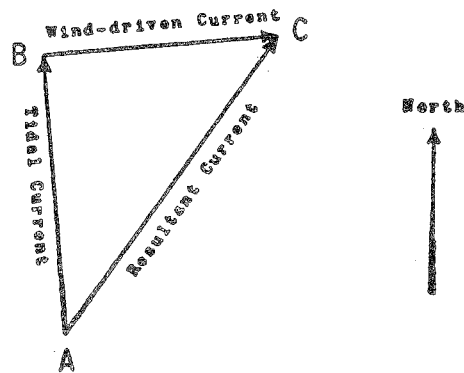
For example, a vessel is near the Nantucket Shoals station at a time when the tidal current is setting 120° with a velocity of 0.6 knot, and at the same time a wind of 40 miles per hour is blowing from west; what current will the vessel be subject to at that time? Since a wind of 40 miles from west will give rise to a current setting 120° with a velocity of 0.5 knot, the combined tidal and wind-driven currents will set in the same direction (120°) with a velocity of $0.6+0.5=1.1$ knots.

Currents in opposite directions.—The combination of currents setting in opposite directions is likewise a simple matter. The velocity of the resultant current is the difference between the opposite setting currents, and the direction of the resultant current is the same as that of the greater current.

As an example, let it be required to determine the velocity of the current at the Nantucket Shoals station when the tidal current is setting 205° with a velocity of 0.8 knot, and when a wind of 40 miles per hour is blowing from south. The current produced by a wind of 40 miles per hour from south would set 025° with a velocity of 0.5 knot. The tidal and wind-driven currents therefore set in opposite directions, the tidal current being the stronger. Hence the resultant current will set in the direction of the tidal current (205°) with a velocity of $0.8-0.5=0.3$ knot.

Currents in different directions.—The combination of two or more currents setting neither in the same nor in opposite direction, while not as simple as in the previous cases, is nevertheless not difficult, the best method being a graphic method. Taking the combination of two currents as the simplest case, we draw from a given point as origin, a line the direction of which is the direction of one of the currents to be combined and whose length represents the velocity of that current to some suitable scale; from the end of this line we draw another line the direction and length of which, to the same scale, represents the other of the currents to be combined; then a line joining the origin with the end of our second line gives the direction and velocity of the resultant current.

As an example, let us take Nantucket Shoals station at a time when the tidal current is 0.7 knot setting 355° and a wind of 50 miles per hour is blowing from west-southwest; the wind-driven current according to the preceding chapter would therefore be about 0.6 knot setting 085° .



Combination of tidal current and wind-driven current

Using a scale of 2 inches to the knot we draw from the point A in the diagram above, the line AB 1.4 inches in length directed 355° to represent the tidal current. From B we then draw the line BC 1.2 inches in length directed 085° to represent the wind current. The line AC represents the resultant current and on being measured is found to be about 1.8 inches in length directed 035° . Hence the resultant current sets 035° with a velocity of 0.9 knot.

The combination of three or more currents is made in the same way as above, the third current to be combined being drawn from the point C, the resultant current being given by joining the origin A with the end of the last line. For drawing the lines, a parallel rule and compass rose will be found convenient, or a protractor or polar coordinate paper may be used.

CURRENT DIAGRAMS

EXPLANATION

“Current diagram” is a graphic table that shows the velocities of the flood and ebb currents and the times of slack and strength over a considerable stretch of the channel of a tidal waterway. At definite intervals along the channel the velocities of the current are shown with reference to the times of turning of the current at some reference station. This makes it a simple matter to determine the approximate velocity of the current along the channel for any desired time.

In using the diagrams, the desired time should be converted to hours before or after the time of the *nearest* predicted slack water at the reference station.

Besides showing in compact form the velocities of the current and their changes through the flood and ebb cycles, the current diagram serves two other useful purposes. By its use the mariner can determine the most advantageous time to pass through the waterway in order to carry the most favorable current and also the velocity and direction of the current that will be encountered in the channel at any time.

Each diagram represents average durations and average velocities of flood and ebb. The durations and velocities of flood and ebb vary from day to day. Therefore predictions for the reference station at times will differ from average conditions and when precise results are desired the diagrams should be modified to represent conditions at such particular times. This can be done by changing the width of the shaded and unshaded portions of the diagram to agree in hours with the durations of flood and ebb, respectively, as given by the predictions for that time. The velocities in the shaded area should then be multiplied by the ratio of the predicted flood velocity to the average flood velocity (maximum flood velocity given opposite the name of the reference station on the diagram) and the velocities in the unshaded area by the ratio of the predicted ebb velocity to the average ebb velocity.

In a number of cases approximate results can be obtained by using the diagram as drawn and modifying the final result by the ratio of velocities as mentioned above. Thus if the diagram in a particular case gives a favorable flood velocity averaging about 1.0 knot and the ratio of the predicted flood velocity to the average flood velocity is 0.5 the approximate favorable current for the particular time would be $1.0 \times 0.5 = 0.5$ knot.

VINEYARD AND NANTUCKET SOUNDS

EXPLANATION OF CURRENT DIAGRAM

The current diagram on the opposite page represents average conditions of the surface currents along the middle of the channel from Gay Head to the east end of Pollock Rip Channel, the scale being too small to show details.

Easterly streams are designated "Flood" and westerly streams "Ebb." The small figures in the diagram denote the velocity of the current in knots and tenths. The times are referred to slack waters at Pollock Rip Channel (Butler Hole), daily predictions for which are given in Table 1 of these current tables.

The speed lines are directly related to the diagram. By transferring to the diagram the direction of the speed line which corresponds to the ship's speed, the diagram will show the general direction and velocity of the current encountered by the vessel in passing through the sounds or the most favorable time, with respect to currents, for leaving any place shown on the left margin.

To determine velocity and direction of current.—With parallel rulers transfer to the diagram the direction of the speed line corresponding to normal speed of vessel, moving edge of ruler to the point where the horizontal line representing place of departure intersects the vertical line representing the time of day in question. If the ruler's edge lies within the shaded portion of the diagram, a flood current will be encountered; if within the unshaded, an ebb current; and if along the boundary of both, slack water. The figures on the diagram along the edge of the rule will show the velocity of the current encountered at any place indicated on the left margin of the diagram.

Example.—A 12-knot vessel bound westward enters Pollock Rip Channel at 0700 of a given day, and it is desired to ascertain the velocity and direction of the current which will be encountered on its passage through the sounds. Assuming that on the given day ebb begins at Pollock Rip Channel at 0508 and flood begins at 1120, the time 0700 will be about 2 hours after ebb begins. With parallel rulers transfer to the diagram the 12-knot speed line "Westbound", placing edge of rule on the point where the vertical line "2 hours after ebb begins at Pollock Rip Channel" intersects the horizontal 47-mile line which is the starting point. It will be found that the edge of the ruler passes through the unshaded portion of the diagram, the velocities along the edge averaging about 1.4 knots. The vessel will therefore have a favorable ebb current averaging about 1.4 knots all the way to Gay Head. It will also be seen that the edge of the ruler crosses the horizontal 16-mile line (at East Chop) about halfway between the figures 1.6 and 2.2. Therefore, when passing the vicinity of East Chop she will have a favorable current of almost 2 knots.

To determine the time of a favorable current for passing through the sounds.—With parallel rulers transfer to the diagram the direction of the speed line corresponding to normal speed of vessel, moving the rule over the diagram until its edge runs as nearly as possible through the general line of largest velocities of shaded portion if eastbound and unshaded portion if westbound, giving consideration only to that part of the diagram which lies between place of departure and destination. An average of the figures along the edge of the ruler will give the average strength of current. The time (before or after flood begins or ebb begins at Pollock Rip Channel) for leaving any place shown on the left margin will be indicated vertically above the point where the ruler cuts a line drawn horizontally through the name of the place in question.

Example.—A 12-knot vessel will leave Gay Head for Pollock Rip Channel on a day when flood begins at Pollock Rip Channel at 0454 and ebb begins at 1104. At what time should she get under way so as to carry the most favorable current all the way through the sounds?

Place parallel rulers along the 12-knot speed line "Eastbound." Transfer the direction to the shaded portion of the diagram and as near as possible to the axis so as to include the greatest possible number of larger current velocities. It will be found that the edge of the rule cuts the horizontal line at Gay Head at the point representing "3 hours after flood begins at Pollock Rip Channel", and that the average of the currents along the edge of rulers is about 0.8 knot in a favorable direction. For the given day flood begins at Pollock Rip Channel at 0454; hence, if the vessel leaves Gay Head 3 hours later, or about 0754, she will average a favorable current of almost 1 knot all the way.

ASTRONOMICAL DATA, 1983

January				February				March				April			
	d.	h	m		d.	h	m		d.	h	m		d.	h	m
E	5	22	..	E	2	06	..	E	1	16	..	S	5	01	..
☾	6	04	00	☾	4	19	17	☾	6	13	16	☾	5	08	38
S	13	06	..	S	9	12	..	S	8	18	..	A	6	18	..
A	14	05	..	A	10	08	..	A	9	23	..	E	12	11	..
☾	14	05	08	☾	13	00	32	☾	14	17	43	☾	13	07	58
E	20	17	..	E	16	22	..	E	16	04	..	N	19	02	..
☾	22	05	33	☾	20	17	32	☾ ₁	21	04	39	☾	20	08	58
N	27	05	..	N	23	14	..	☾	22	02	25	P	21	08	..
P	28	11	..	P	25	22	..	N	22	20	..	E	25	11	..
O	28	22	26	O	27	08	58	P	25	22	..	O	27	06	31
								O	28	19	27				
								E	29	02	..				

May				June				July				August			
	d.	h	m		d.	h	m		d.	h	m		d.	h	m
S	2	10	..	A	1	08	..	☾	3	12	12	☾	2	00	52
A	4	13	..	☾	3	21	07	E	3	14	..	N	6	13	..
☾	5	03	43	E	6	05	..	N	10	03	..	P	8	19	..
E	9	20	..	☾	11	04	37	☾	10	12	18	☾	8	19	18
☾	12	19	25	N	12	17	..	P	11	10	..	E	12	13	..
N	16	08	..	P	13	06	..	E	16	05	..	☾	15	12	47
P	16	16	..	☾	17	19	46	☾	17	02	50	S	19	12	..
☾	19	14	17	E	18	23	..	S	23	07	..	A	22	09	..
E	22	18	..	☾ ₂	21	23	09	O	24	23	27	O	23	14	59
O	26	18	48	O	25	08	32	A	26	07	..	E	27	01	..
S	29	18	..	S	26	01	..	E	30	20	..	☾	31	11	22
				A	28	23	..								

September				October				November				December			
	d.	h	m		d.	h	m		d.	h	m		d.	h	m
N	2	21	..	P	4	11	..	P	1	03	..	☾	4	12	26
P	6	05	..	E	6	08	..	E	2	18	..	S	6	19	..
☾	7	02	35	☾	6	11	16	☾	4	22	21	A	11	01	..
E	8	22	..	S	13	02	..	S	9	10	..	☾	12	13	09
☾	14	02	24	☾	13	19	42	☾	12	15	49	E	14	07	..
S	15	18	..	A	16	08	..	A	13	03	..	O	20	02	00
A	18	17	..	E	20	13	..	E	16	22	..	N	21	00	..
O	22	06	36	O	21	21	53	O	20	12	29	☾ ₄	22	10	30
E	23	06	..	N	27	10	..	N	23	16	..	P	22	18	..
☾ ₃	23	14	42	☾	29	03	37	P	26	02	..	☾	26	18	52
☾	29	20	05					☾	27	10	50	E	27	06	..
N	30	04	..					E	30	01	..				

LUNAR DATA:

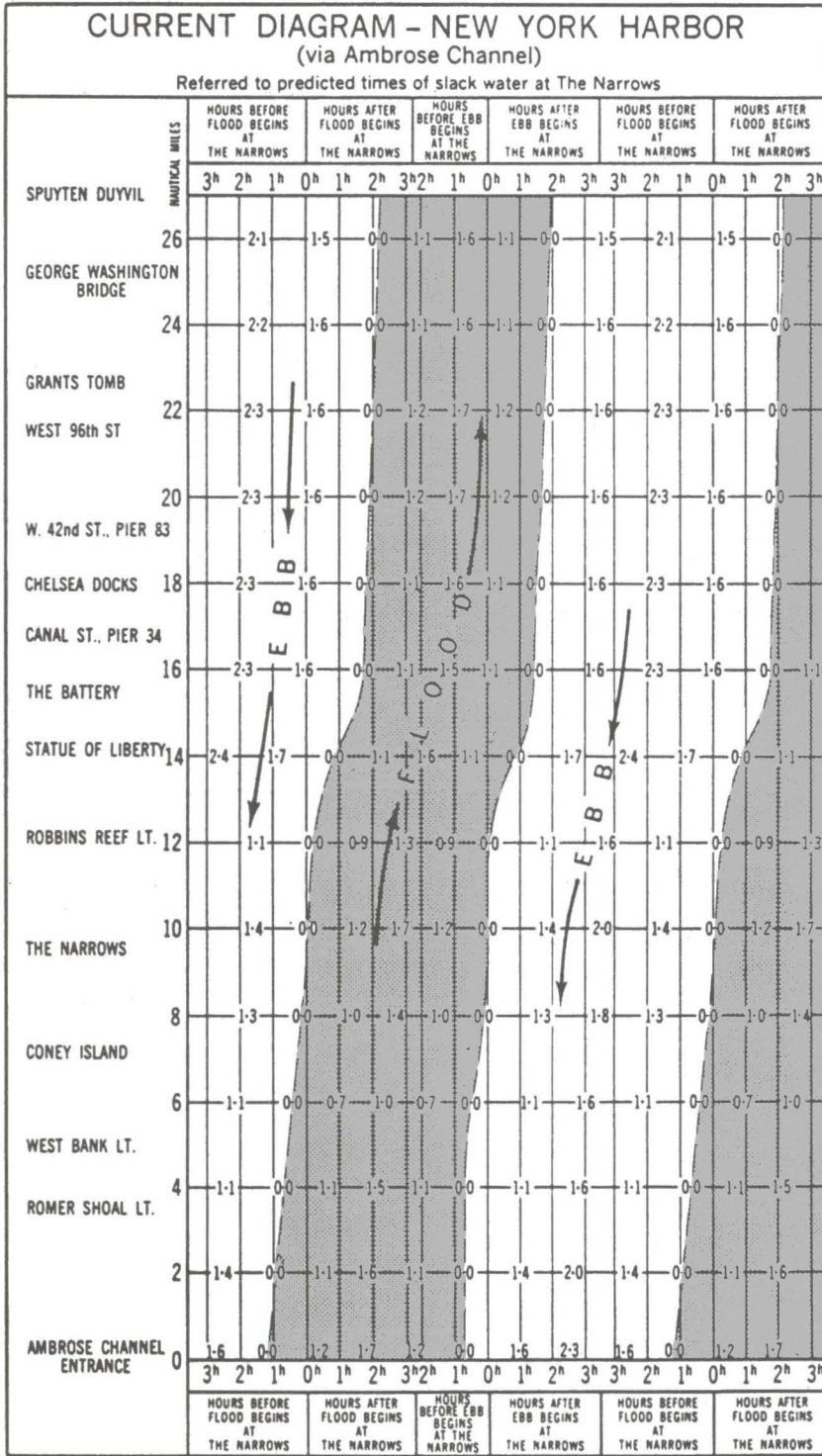
- ☾ - new Moon
- ☾₁ - first quarter
- O - full Moon
- ☾₂ - last quarter
- A - Moon in apogee
- P - Moon in perigee
- N - Moon farthest north of Equator
- E - Moon on Equator
- S - Moon farthest south of Equator

SOLAR DATA:

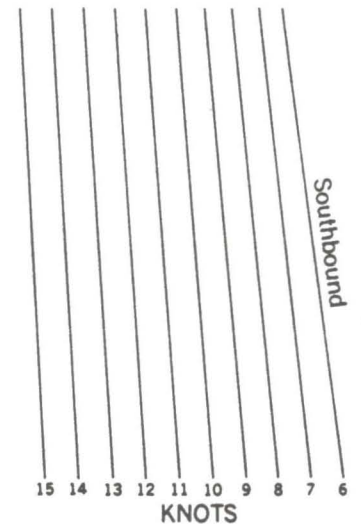
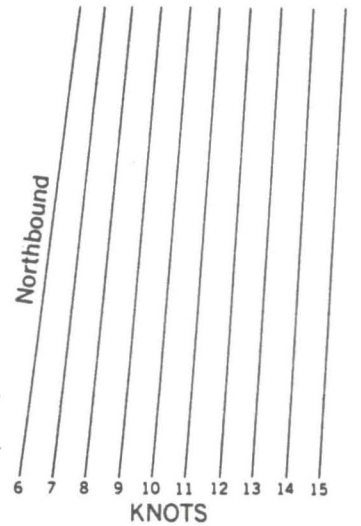
- ☾₁ - March equinox
- ☾₂ - June solstice
- ☾₃ - September equinox
- ☾₄ - December solstice

Greenwich mean time (GMT) or universal time (UT) is the mean solar time on the Greenwich meridian reckoned in days of 24 mean solar hours written as 00^h at midnight and 12^h at noon. To convert the above times to those of other standard time meridians, add 1 hour for each 15° of east longitude of the desired meridian and subtract 1 hour for each 15° of west longitude.

This table was compiled from data taken from the American Ephemeris and Nautical Almanac.



SPEED LINES



DELAWARE BAY AND RIVER
EXPLANATION OF CURRENT DIAGRAM

This current diagram represents only average conditions of the surface currents along the middle of the channel between Bristol and Delaware Bay Entrance, the scale being too small to show details.

Northerly streams are designated "Flood" and southerly streams "Ebb." The small figures in the diagram denote the velocity of the current in knots and tenths. The times are referred to slack waters at Delaware Bay Entrance, daily predictions for which are given in Table 1 of these current tables.

The speed lines are directly related to the diagram. By transferring to the diagram the direction of the speed line which corresponds to the ship's speed, the diagram will show the general direction and velocity of the current encountered by the vessel in passing up or down the bay and river or the most favorable time, with respect to currents, for leaving any place shown in the left margin.

To determine velocity and direction of current.—With parallel rulers transfer to the diagram the direction of the speed line corresponding to the normal speed of vessel, moving edge of ruler to the point where the horizontal line representing place of departure intersects the vertical line representing the time in question. If the ruler's edge lies within the shaded portion of the diagram, a flood current will be encountered; if within the unshaded, an ebb current, and if along the boundary of both, slack water. The figures in the diagram along the edge of the ruler will show the velocity of the current encountered at any place indicated in the left margin of the diagram.

Example.—A 15-knot vessel bound southward leaves Philadelphia (Chestnut Street) at 0330 of a given day and it is desired to ascertain the velocity and direction of the current which will be encountered between Philadelphia and Delaware Bay Entrance. Assuming that on the given day flood begins at Delaware Bay Entrance at 0436 and ebb begins at 1038, the time 0330 will be about 1 hour before flood begins. With parallel rulers transfer to the diagram the 15-knot speed line "Southbound" placing the edge of ruler on the intersection of the vertical line "1 hour before flood begins at Delaware Bay Entrance" and a horizontal line through Philadelphia (Chestnut Street) which is the starting point. It will be found that the edge of the ruler passes through an unshaded (ebb) portion with an average velocity of about 1.3 knots from Philadelphia to the vicinity of Arnold Point, and the rest of the way through a shaded (flood) portion with an average velocity of about 0.8 knot. The vessel will therefore have a favorable current averaging about 1.3 knots to the vicinity of Arnold Point and an unfavorable current averaging about 0.8 knot the rest of the way to Delaware Bay Entrance.

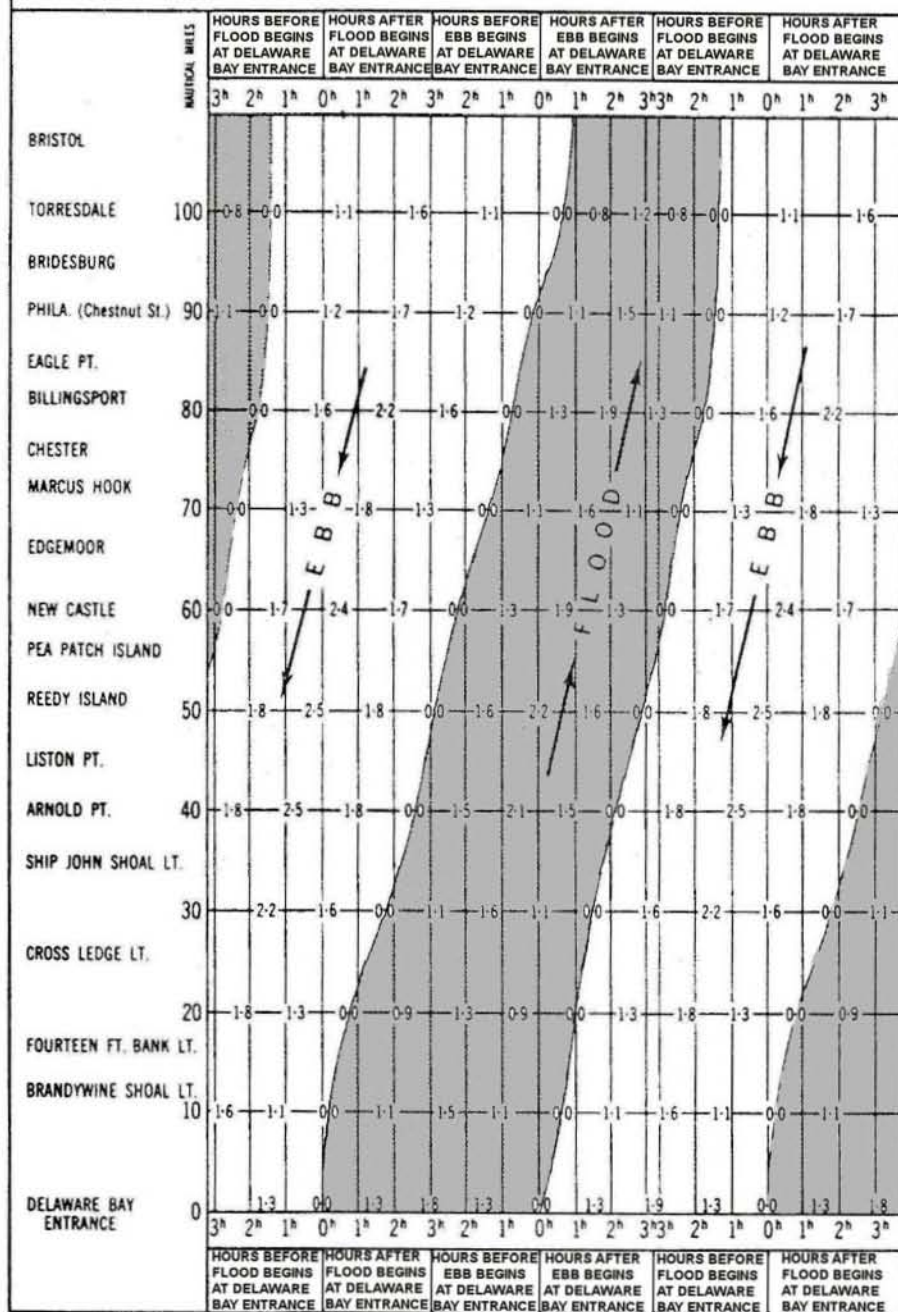
To determine the time of a favorable current for passing up or down the bay and river.—With parallel rulers transfer to the diagram the direction of the speed line corresponding to normal speed of vessel, moving the ruler over the diagram until its edge runs as nearly as possible through the general line of largest velocities of shaded portion if northbound or unshaded portion if southbound giving consideration only to that part of diagram which lies between places of departure and destination. An average of the figures along edge of ruler will give the average velocity of current. The time (before or after flood begins or ebb begins at Delaware Bay Entrance) for leaving any place shown in the left margin will be indicated vertically above or below the point where the ruler cuts a line drawn horizontally through the place in question.

Example.—A 12-knot vessel will leave Delaware Bay Entrance on a day when flood begins at 0505 and ebb begins at 1112. At what time should she get under way so as to carry the most favorable current all the way to Philadelphia? With parallel rulers transfer the direction of 12-knot speed line "Northbound" to the shaded portion of diagram and as near as possible to the axis so as to include the greatest number of larger velocities. The edge of the ruler will cut the horizontal line at Delaware Bay Entrance near the vertical line "2 hours after flood begins at Delaware Bay Entrance" and the velocities along the ruler's edge will average about 1.7 knots. On the given day flood begins at Delaware Bay Entrance at 0505, hence, if the vessel leaves about 2 hours later, i. e., about 0700, she will have a favorable current averaging about 1.7 knots all the way.

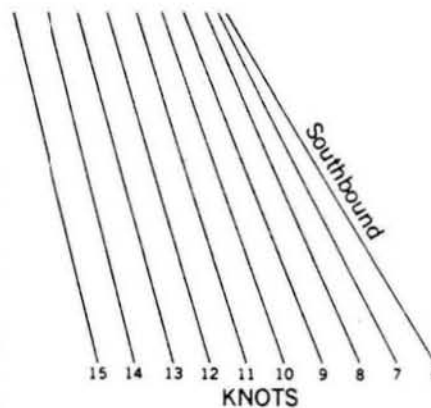
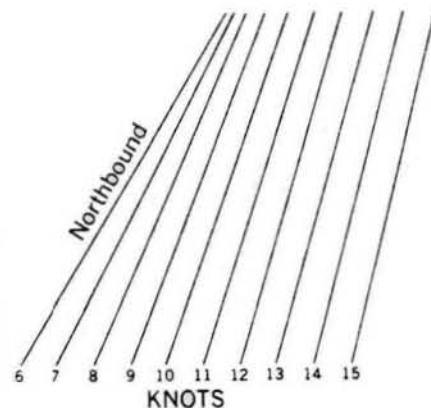
Note.—It is readily seen by transferring southbound speed lines to this diagram that southbound vessels can carry a favorable current for about 50 miles only.

CURRENT DIAGRAM - DELAWARE BAY AND RIVER

Referred to predicted times of slack water at Delaware Bay Entrance



SPEED LINES



CHESAPEAKE BAY

EXPLANATION OF CURRENT DIAGRAM

This current diagram represents only average conditions of the surface currents along the middle of the channel from Cape Henry Light to Baltimore, the scale being too small to show details.

Northerly streams are designated "Flood" and southerly streams "Ebb." The small figures in the diagram denote the velocity of the current in knots and tenths. The times are referred to slack waters at Chesapeake Bay entrance, daily predictions for which are given in Table 1 of these current tables.

The speed lines are directly related to the diagram. By transferring to the diagram the direction of the speed line which corresponds to the ship's speed, the diagram will show the general direction and velocity of the current encountered by the vessel in passing up or down the bay or the most favorable time, with respect to currents, for leaving any place shown in the left margin.

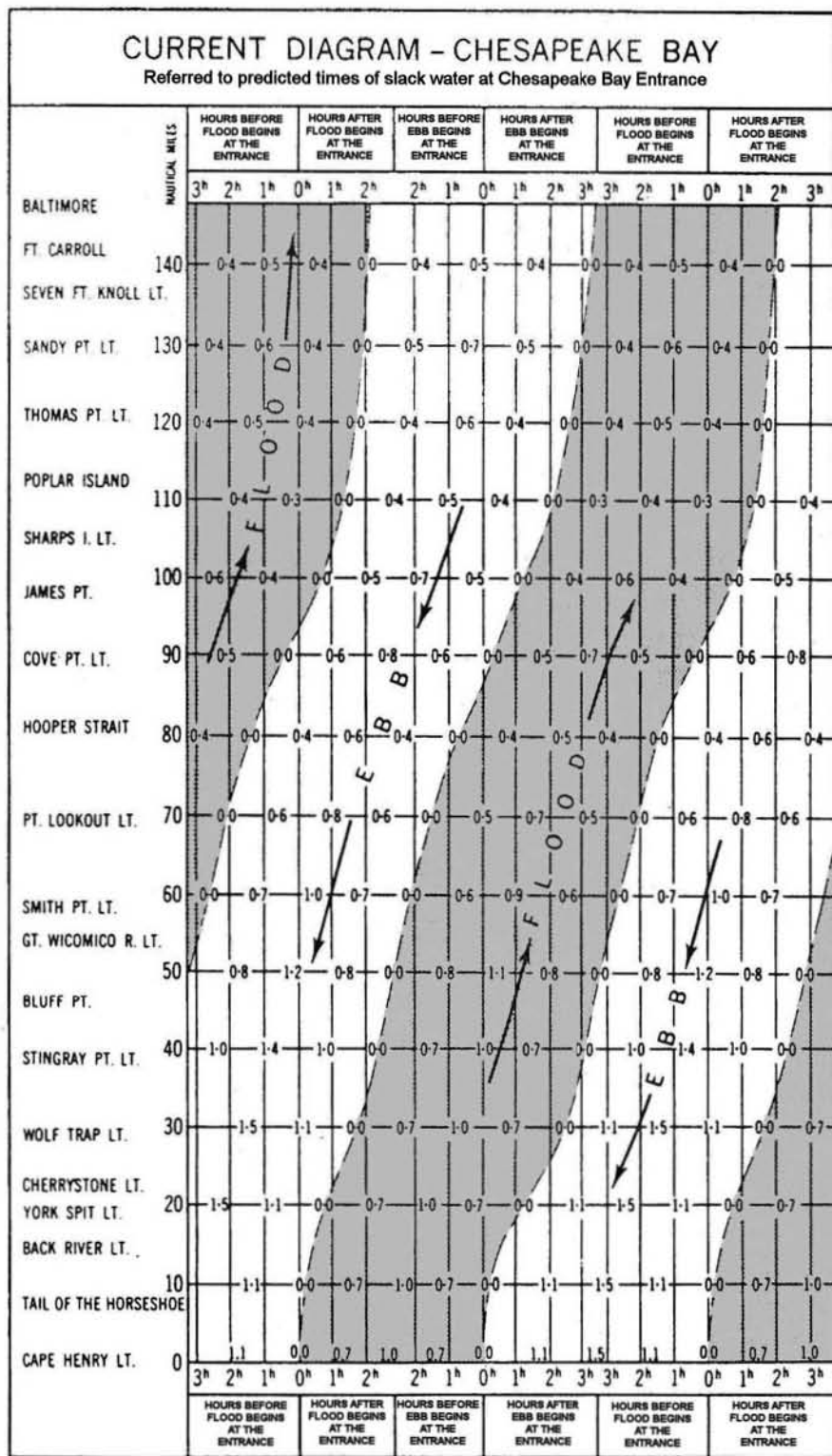
To determine velocity and direction of current.—With parallel rulers transfer to the diagram the direction of the speed line corresponding to the normal speed of vessel, moving edge of ruler to the point where the horizontal line representing place of departure intersects the vertical line representing the time in question. If the ruler's edge lies within the shaded portion of the diagram, a flood current will be encountered; if within the unshaded, an ebb current, and if along the boundary of both, slack water. The figures in the diagram along the edge of the ruler will show the velocity of the current encountered at any place indicated in the left margin of the diagram.

Example.—A 12-knot vessel bound for Baltimore passes Cape Henry Light at 1430 of a given day, and it is desired to ascertain the velocity and direction of the current which will be encountered. Assuming that on the given day flood begins at Chesapeake Bay entrance at 1256 and ebb begins at 1803, the time 1430 will be about 1½ hours after flood begins. With parallel rulers transfer to diagram the 12-knot speed line "Northbound," placing edge of ruler so that it will cross the horizontal line opposite Cape Henry at a point "1½ hours after flood begins at the entrance." It will be found that the edge of the ruler passes through strength of current in the shaded portion of diagram averaging about 0.7 knot. The vessel will, therefore, have a favorable current averaging about 0.7 knot all the way to Baltimore.

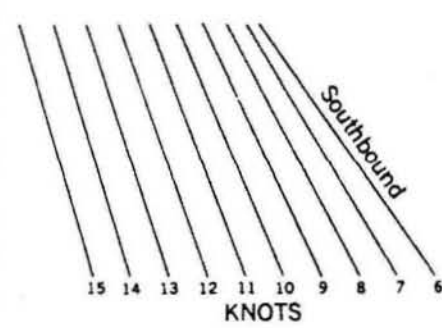
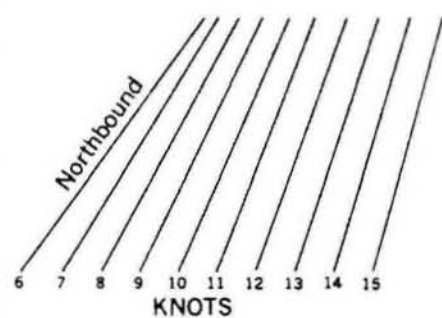
To determine the time of a favorable current for passing through the bay.—With parallel rulers transfer to the diagram the direction of the speed line corresponding to normal speed of vessel, moving the ruler over the diagram until its edge runs approximately through the general line of greatest current of unshaded portion if southbound and shaded portion if northbound. An average of the figures along edge of ruler will give average strength of current. The time (before or after ebb or flood begins at the entrance) for leaving any place in the left margin of diagram will be found vertically above the point where the parallel ruler cuts the horizontal line opposite the place in question.

Example.—A 12-knot vessel in Baltimore Harbor desires to leave for Cape Henry Light on the afternoon of a day when flood begins at Chesapeake Bay entrance at 1148 and ebb begins at 1718. At what time should she get under way so as to carry the most favorable current?

Place parallel rulers along the 12-knot speed line "Southbound." Transfer this direction to the diagram and move it along so as to include the greatest possible number of larger current velocities in the unshaded portion of the diagram. The most favorable time for leaving Baltimore thus found is about 1 hour after flood begins at the entrance, or about 1248. There will be an unfavorable current of about 0.2 knot as far as Seven Foot Knoll Light; after passing this light there will be an average favorable current of about 0.3 knot as far as Cove Point Light; from Cove Point Light to Bluff Point a contrary current averaging about 0.3 knot will be encountered; from Bluff Point to Tail of the Horseshoe there will be an average favorable current of about 0.9 knot; and from Tail of the Horseshoe to Cape Henry an average contrary current of about 0.2 knot will again be encountered.



SPEED LINES



TIDE TABLES

Advance information relative to the rise and fall of the tide is given in annual tide tables. These tables include the predicted times and heights of high and low waters for every day in the year for a number of reference stations and differences for obtaining similar predictions for numerous other places.

Tide Tables, Central and Western Pacific Ocean and Indian Ocean.

Tide Tables, East Coast of North and South America (Including Greenland).

Tide Tables, Europe and West Coast of Africa (Including the Mediterranean Sea).

Tide Tables, West Coast of North and South America (Including the Hawaiian Islands).

TIDAL BENCH MARKS

To provide permanent points for the observed heights of the tide and the tidal datum planes determined therefrom, a system of bench marks is established at each tide station. The descriptions and elevations of these bench marks along our coast are compiled, published, and available for distribution. Requests for such bench mark data should specify the coastal locality for which the information is desired.

TIDAL CURRENT TABLES

Accompanying the rise and fall of the tide is a periodic horizontal flow of the water known as the tidal current. Advance information relative to these currents is made available in annual tidal current tables which include daily predictions of the times of slack water and the times and velocities of strength of flood and ebb currents for a number of waterways together with differences for obtaining predictions for numerous other places.

Tidal Current Tables, Atlantic Coast of North America.

Tidal Current Tables, Pacific Coast of North America and Asia.

TIDAL CURRENT CHARTS

Each publication consists of a set of 12 charts which depict, by means of arrows and figures, the direction and speed of the tidal current for each hour of the tidal cycle. The charts, which may be used for any year, present a comprehensive view of the tidal current movement in the respective waterways as a whole and also supply a means for readily determining for any time the direction and speed of the current at various localities throughout the water areas covered. The Narragansett Bay tidal current chart is to be used with the annual tide tables. The other charts require the annual tidal current tables.

Tidal Current Charts, Boston Harbor.

Tidal Current Charts, Charleston Harbor, S.C.

Tidal Current Charts, Delaware Bay and River.

Tidal Current Charts, Long Island Sound and Block Island Sound.

Tidal Current Charts, Narragansett Bay.

Tidal Current Charts, Narragansett Bay to Nantucket Sound.

Tidal Current Charts, New York Harbor.

Tidal Current Charts, Puget Sound, Northern Part.

Tidal Current Charts, Puget Sound, Southern Part.

Tidal Current Charts, San Francisco Bay.

Tidal Current Charts, Upper Chesapeake Bay.

Tidal Current Charts, Tampa Bay.

TIDAL CURRENT DIAGRAMS

The tidal current diagrams are a series of 12 monthly diagrams to be used with the tidal current charts to give the user a convenient method to determine the current flow on a particular day.

Tidal Current Diagrams for Long Island Sound and Block Island Sound.

Tidal Current Diagrams for Boston Harbor.

Tidal Current Diagrams for New York Harbor.

Tidal Current Diagrams for Upper Chesapeake Bay.

- ANNUAL INEQUALITY**—Seasonal variation in the water level or current, more or less periodic, due chiefly to meteorological causes.
- APOGEAN TIDES OR TIDAL CURRENTS**—Tides of decreased range or currents of decreased speed occurring monthly as the result of the Moon being in apogee (farthest from the Earth).
- AUTOMATIC TIDE GAGE**—An instrument that automatically registers the rise and fall of the tide. In some instruments, the registration is accomplished by recording the heights at regular intervals in digital format, in others by a continuous graph in which the height, versus corresponding time of the tide, is recorded.
- BENCH MARK (BM)**—A fixed physical object or marks used as reference for a vertical datum. A *tidal bench mark* is one near a tide station to which the tide staff and tidal datums are referred. A *geodetic bench mark* identifies a surveyed point in the National Geodetic Vertical Network.
- CHART DATUM**—The tidal datum to which soundings on a chart are referred. It is usually taken to correspond to a low water elevation of the tide, and its depression below mean sea level is represented by the symbol Zo.
- CURRENT**—Generally, a horizontal movement of water. Currents may be classified as *tidal* and *nontidal*. Tidal currents are caused by gravitational interactions between the Sun, Moon, and Earth and are a part of the same general movement of the sea that is manifested in the vertical rise and fall, called *tide*. Nontidal currents include the permanent currents in the general circulatory systems of the sea as well as temporary currents arising from more pronounced meteorological variability.
- CURRENT DIFFERENCE**—Difference between the time of slack water (or minimum current) or strength of current in any locality and the time of the corresponding phase of the tidal current at a reference station, for which predictions are given in the *Tidal Current Tables*.
- CURRENT ELLIPSE**—A graphic representation of a rotary current in which the velocity of the current at different hours of the tidal cycle is represented by radius vectors and vectorial angles. A line joining the extremities of the radius vectors will form a curve roughly approximating an ellipse. The cycle is completed in one-half tidal day or in a whole tidal day according to whether the tidal current is of the semidiurnal or the diurnal type. A current of the mixed type will give a curve of two unequal loops each tidal day.
- CURRENT METER**—An instrument for measuring the speed and direction or just the speed of a current. The measurements are usually Eulerian since the meter is most often fixed or moored at a specific location.
- DATUM (vertical)**—For marine applications, a base elevation used as a reference from which to reckon heights or depths. It is called a *tidal datum* when defined by a certain phase of the tide. Tidal datums are local datums and should not be extended into areas which have differing topographic features without substantiating measurements. In order that they may be recovered when needed, such datums are referenced to fixed points known as *bench marks*.
- DAYLIGHT SAVING TIME**—A time used during the summer in some localities in which clocks are advanced 1 hour from the usual standard time.
- DIURNAL**—Having a period or cycle of approximately 1 tidal day. Thus, the tide is said to be diurnal when only one high water and one low water occur during a tidal day, and the tidal current is said to be diurnal when there is a single flood and single ebb period in the tidal day. A rotary current is diurnal if it changes its direction through all points of the compass once each tidal day.
- DIURNAL INEQUALITY**—The difference in height of the two high waters or of the two low waters of each day; also the difference in speed between the two flood tidal currents or the two ebb tidal currents of each day. The difference changes with the declination of the Moon and to a lesser extent with the declination of the Sun. In general, the inequality tends to increase with an increasing declination, either north or south, and to diminish as the Moon approaches the Equator. *Mean diurnal high water inequality* (DHQ) is one-half the average difference between the two high waters of each day observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). It is obtained by subtracting the mean of all high waters from the mean of the higher high waters. *Mean diurnal low water inequality* (DLQ) is one-half the average difference between the two low waters of each day observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). It is obtained by subtracting the mean of the lower low waters from the mean of all low waters. *Tropic high water inequality* (HWQ) is the average difference between the two high waters of the day at the times of the tropic tides. *Tropic low water inequality* (LWQ) is the average difference between the two low waters of the day at the times of the tropic tides. Mean and tropic inequalities as defined above are applicable only when the type of tide is either semidiurnal or mixed. Diurnal inequality is sometimes called *declinational inequality*.

DOUBLE EBB—An ebb tidal current where, after ebb begins, the speed increases to a maximum called *first ebb*; it then decreases, reaching a *minimum ebb* near the middle of the ebb period (and at some places it may actually run in a flood direction for a short period); it then again ebbs to a maximum speed called *second ebb* after which it decreases to slack water.

DOUBLE FLOOD—A flood tidal current where, after flood begins, the speed increases to a maximum called *first flood*; it then decreases, reaching a *minimum flood* near the middle of the flood period (and at some places it may actually run in an ebb direction for a short period); it then again floods to a maximum speed called *second flood* after which it decreases to slack water.

DOUBLE TIDE—A double-headed tide, that is, a high water consisting of two maxima of nearly the same height separated by a relatively small depression, or a low water consisting of two minima separated by a relatively small elevation. Sometimes, it is called an *agger*.

DURATION OF FLOOD AND DURATION OF EBB—*Duration of flood* is the interval of time in which a tidal current is flooding, and the *duration of ebb* is the interval in which it is ebbing. Together they cover, on an average, a period of 12.42 hours for a semidiurnal tidal current or a period of 24.84 hours for a diurnal current. In a normal semidiurnal tidal current, the duration of flood and duration of ebb will each be approximately equal to 6.21 hours, but the times may be modified greatly by the presence of a nontidal flow. In a river the duration of ebb is usually longer than the duration of flood because of the freshwater discharge, especially during the spring when snow and ice melt are the predominant influences.

DURATION OF RISE AND DURATION OF FALL—*Duration of rise* is the interval from low water to high water, and *duration of fall* is the interval from high water to low water. Together they cover, on an average, a period of 12.42 hours for a semidiurnal tide or a period of 24.84 hours for a diurnal tide. In a normal semidiurnal tide, the duration of rise and duration of fall will each be approximately equal to 6.21 hours, but in shallow waters and in rivers there is a tendency for a decrease in the duration of rise and a corresponding increase in the duration of fall.

EBB CURRENT—The movement of a tidal current away from shore or down a tidal river or estuary. In the mixed type of reversing tidal current, the terms *greater ebb* and *lesser ebb* are applied respectively to the ebb tidal currents of greater and lesser speed of each day. The terms *maximum ebb* and *minimum ebb* are applied to the maximum and minimum speeds of a current running continuously ebb, the speed alternately increasing and decreasing without

coming to a slack or reversing. The expression *maximum ebb* is also applicable to any ebb current at the time of greatest speed.

EQUATORIAL TIDAL CURRENTS—Tidal currents occurring semimonthly as a result of the Moon being over the Equator. At these times the tendency of the Moon to produce a diurnal inequality in the tidal current is at a minimum.

EQUATORIAL TIDES—Tides occurring semimonthly as the result of the Moon being over the Equator. At these times the tendency of the Moon to produce a diurnal inequality in the tide is at a minimum.

FLOOD CURRENT—The movement of a tidal current toward the shore or up a tidal river or estuary. In the mixed type of reversing current, the terms *greater flood* and *lesser flood* are applied respectively to the flood currents of greater and lesser speed of each day. The terms *maximum flood* and *minimum flood* are applied to the maximum and minimum speeds of a flood current, the speed of which alternately increases and decreases without coming to a slack or reversing. The expression *maximum flood* is also applicable to any flood current at the time of greatest speed.

GREAT DIURNAL RANGE (Gt)—The difference in height between mean higher high water and mean lower low water. The expression may also be used in its contracted form, *diurnal range*.

GULF COAST LOW WATER DATUM—A chart datum. Specifically, the tidal datum designated for the coastal waters of the Gulf Coast of the United States. It is defined as *mean lower low water* when the type of tide is mixed and *mean low water* when the type of tide is diurnal.

HALF-TIDE LEVEL—*See mean tide level.*

HIGH WATER (HW)—The maximum height reached by a rising tide. The height may be due solely to the periodic tidal forces or it may have superimposed upon it the effects of prevailing meteorological conditions. Use of the synonymous term, *high tide*, is discouraged.

HIGHER HIGH WATER (HHW)—The higher of the two high waters of any tidal day.

HIGHER LOW WATER (HLW)—The higher of the two low waters of any tidal day.

HYDRAULIC CURRENT—A current in a channel caused by a difference in the surface level at the two ends. Such a current may be expected in a strait connecting two bodies of water in which the tides differ in time or range. The current in the East River, N.Y., connecting Long Island Sound and New York Harbor, is an example.

KNOT—A speed unit of 1 international nautical mile (1,852.0 meters or 6,076.11549 international feet) per hour.

- LOW WATER (LW)**—The minimum height reached by a falling tide. The height may be due solely to the periodic tidal forces or it may have superimposed upon it the effects of meteorological conditions. Use of the synonymous term, *low tide*, is discouraged.
- LOWER HIGH WATER (LHW)**—The lower of the two high waters of any tidal day.
- LOWER LOW WATER (LLW)**—The lower of the two low waters of any tidal day.
- LUNAR DAY**—The time of the rotation of the Earth with respect to the Moon, or the interval between two successive upper transits of the Moon over the meridian of a place. The mean lunar day is approximately 24.84 solar hours long, or 1.035 times as long as the mean solar day.
- LUNAR INTERVAL**—The difference in time between the transit of the Moon over the meridian of Greenwich and over a local meridian. The average value of this interval expressed in hours is 0.069 *L*, in which *L* is the local longitude in degrees, positive for west longitude and negative for east longitude. The lunar interval equals the difference between the local and Greenwich interval of a tide or current phase.
- LUNICURRENT INTERVAL**—The interval between the Moon's transit (upper or lower) over the local or Greenwich meridian and a specified phase of the tidal current following the transit. Examples: *strength of flood interval* and *strength of ebb interval*, which may be abbreviated to *flood interval* and *ebb interval*, respectively. The interval is described as local or Greenwich according to whether the reference is to the Moon's transit over the local or Greenwich meridian. When not otherwise specified, the reference is assumed to be local.
- LUNITIDAL INTERVAL**—The interval between the Moon's transit (upper or lower) over the local or Greenwich meridian and the following high or low water. The average of all high water intervals for all phases of the Moon is known as *mean high water lunitidal interval* and is abbreviated to *high water interval* (HWI). Similarly the *mean low water lunitidal interval* is abbreviated to *low water interval* (LWI). The interval is described as local or Greenwich according to whether the reference is to the transit over the local or Greenwich meridian. When not otherwise specified, the reference is assumed to be local.
- MEAN HIGH WATER (MHW)**—A tidal datum. The average of all the high water heights observed over the National Tidal Datum Epoch. (See High Water.) For stations with shorter series, simultaneous observational comparisons are made with a control tide station in order to derive the equivalent of a 19-year datum.
- MEAN HIGHER HIGH WATER (MHHW)**—A tidal datum. The average of the highest high water height of each tidal day observed over the National Tidal Datum Epoch. For stations with shorter series, simultaneous observational comparisons are made with a control tide station in order to derive the equivalent of a 19-year datum.
- MEAN HIGHER HIGH WATER LINE (MHHWL)**—The intersection of the land with the water surface at the elevation of mean higher high water.
- MEAN LOW WATER (MLW)**—A tidal datum. The average of all the low water heights observed over the National Tidal Datum Epoch. (See Low Water.) For stations with shorter series, simultaneous observational comparisons are made with a control tide station in order to derive the equivalent of a 19-year datum.
- MEAN LOW WATER SPRINGS (MLWS)**—A tidal datum. Frequently abbreviated *spring low water*. The arithmetic mean of the low water heights occurring at the time of the spring tides observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch).
- MEAN LOWER LOW WATER (MLLW)**—A tidal datum. The average of the lowest low water height of each tidal day observed over the National Tidal Datum Epoch. For stations with shorter series, simultaneous observational comparisons are made with a control tide station in order to derive the equivalent of a 19-year datum.
- MEAN RANGE OF TIDE (Mn)**—The difference in height between mean high water and mean low water.
- MEAN RIVER LEVEL**—A tidal datum. The average height of the surface of a tidal river at any point for all stages of the tide observed over a 19-year Metonic cycle (the National Tidal Datum Epoch), usually determined from hourly height readings. In rivers subject to occasional freshets the river level may undergo wide variations, and for practical purposes certain months of the year may be excluded in the determination of tidal datums. For charting purposes, tidal datums for rivers are usually based on observations during selected periods when the river is at or near low water stage.
- MEAN SEA LEVEL (MSL)**—A tidal datum. The arithmetic mean of hourly water elevations observed over a specific 19-year Metonic cycle (the National Tidal Datum Epoch). Shorter series are specified in the name; e.g., monthly mean sea level and yearly mean sea level.
- MEAN TIDE LEVEL (MTL)**—Also called half-tide level. A tidal datum midway between mean high water and mean low water.
- MIXED TIDE**—Type of tide with a large inequality in the high and/or low water heights, with two high waters and two low waters usually occurring each tidal day. In strictness, all tides are mixed but the name is usually applied to the tides intermediate to those predominantly semidiurnal and those predominantly diurnal.

NEAP TIDES OR TIDAL CURRENTS—Tides of decreased range or tidal currents of decreased speed occurring semimonthly as the result of the Moon being in quadrature. The *neap range* (N_p) of the tide is the average semidiurnal range occurring at the time of neap tides and is most conveniently computed from the harmonic constants. It is smaller than the mean range where the type of tide is either semidiurnal or mixed and is of no practical significance where the type of tide is diurnal. The average height of the high waters of the neap tides is called *neap high water* or *high water neaps* (MHWN) and the average height of the corresponding low waters is called *neap low water* or *low water neaps* (MLWN).

PERIGEAN TIDES OR TIDAL CURRENTS—Tides of increased range or tidal currents of increased speed occurring monthly as the result of the Moon being in perigee or nearest the Earth. The *perigean range* (P_n) of tide is the average semidiurnal range occurring at the time of perigean tides and is most conveniently computed from the harmonic constants. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal.

RANGE OF TIDE—The difference in height between consecutive high and low waters. The *mean range* is the difference in height between mean high water and mean low water. Where the type of tide is diurnal the mean range is the same as the diurnal range. For other ranges, see great diurnal, spring, neap, perigean, apogean, and tropic tides.

REFERENCE STATION—A tide or current station for which independent daily predictions are given in the *Tide Tables* and *Tidal Current Tables*, and from which corresponding predictions are obtained for subordinate stations by means of differences and ratios.

REVERSING CURRENT—A tidal current which flows alternately in approximately opposite directions with a slack water at each reversal of direction. Currents of this type usually occur in rivers and straits where the direction of flow is more or less restricted to certain channels. When the movement is towards the shore or up a stream, the current is said to be flooding, and when in the opposite direction it is said to be ebbing. The combined flood and ebb movement including the slack water covers, on an average, 12.42 hours for the semidiurnal current. If unaffected by a nontidal flow, the flood and ebb movements will each last about 6 hours, but when combined with such a flow, the durations of flood and ebb may be quite unequal. During the flow in each direction the speed of the current will vary from zero at the time of slack water to a maximum about midway between the slacks.

ROTARY CURRENT—A tidal current that flows continually with the direction of flow changing

through all points of the compass during the tidal period. Rotary currents are usually found offshore where the direction of flow is not restricted by any barriers. The tendency for the rotation in direction has its origin in the Coriolis force and, unless modified by local conditions, the change is clockwise in the Northern Hemisphere and counterclockwise in the Southern. The speed of the current usually varies throughout the tidal cycle, passing through the two maxima in approximately opposite directions and the two minima with the direction of the current at approximately 90° from the direction at time of maximum speed.

SEMIDIURNAL—Having a period or cycle of approximately one-half of a tidal day. The predominating type of tide throughout the world is semidiurnal, with two high waters and two low waters each tidal day. The tidal current is said to be semidiurnal when there are two flood and two ebb periods each day.

SET (OF CURRENT)—The direction *towards* which the current flows.

SLACK WATER—The state of a tidal current when its speed is near zero, especially the moment when a reversing current changes direction and its speed is zero. The term is also applied to the entire period of low speed near the time of turning of the current when it is too weak to be of any practical importance in navigation. The relation of the time of slack water to the tidal phases varies in different localities. For standing tidal waves, slack water occurs near the times of high and low water, while for progressive tidal waves, slack water occurs midway between high and low water.

SPRING TIDES OR TIDAL CURRENTS—Tides of increased range or tidal currents of increased speed occurring semimonthly as the result of the Moon being new or full. The *spring range* (S_g) of tide is the average semidiurnal range occurring at the time of spring tides and is most conveniently computed from the harmonic constants. It is larger than the mean range where the type of tide is either semidiurnal or mixed, and is of no practical significance where the type of tide is diurnal. The mean of the high waters of the spring tide is called *spring high water* or *mean high water springs* (MHWS), and the average height of the corresponding low waters is called *spring low water* or *mean low water springs* (MLWS).

STAND OF TIDE—Sometimes called a platform tide. An interval at high or low water when there is no sensible change in the height of the tide. The water level is stationary at high and low water for only an instant, but the change in level near these times is so slow that it is not usually perceptible. In general, the duration of the apparent stand will depend upon the range of tide, being longer for a small range than for a large range, but where there is a tendency for a double tide the stand may last for several hours even with a large range of tide.

STANDARD TIME—A kind of time based upon the transit of the Sun over a certain specified meridian, called the *time meridian*, and adopted for use over a considerable area. With a few exceptions, standard time is based upon some meridian which differs by a multiple of 15° from the meridian of Greenwich.

STRENGTH OF CURRENT—Phase of tidal current in which the speed is a maximum; also the speed at this time. Beginning with slack before flood in the period of a reversing tidal current (or minimum before flood in a rotary current), the speed gradually increases to flood strength and then diminishes to slack before ebb (or minimum before ebb in a rotary current), after which the current turns in direction, the speed increases to ebb strength and then diminishes to slack before flood completing the cycle. If it is assumed that the speed throughout the cycle varies as the ordinates of a cosine curve, it can be shown that the average speed for an entire flood or ebb period is equal to $2/\pi$ or 0.6366 of the speed of the corresponding strength of current.

SUBORDINATE CURRENT STATION—(1) A current station from which a relatively short series of observations is reduced by comparison with simultaneous observations from a control current station.

(2) A station listed in the *Tidal Current Tables* for which predictions are to be obtained by means of differences and ratios applied to the full predictions at a reference station.

SUBORDINATE TIDE STATION—(1) A tide station from which a relatively short series of observations is reduced by comparison with simultaneous observations from a tide station with a relatively long series of observations. (2) A station listed in the *Tide Tables* for which predictions are to be obtained by means of differences and ratios applied to the full predictions at a reference station.

TIDAL CURRENT TABLES—Tables which give daily predictions of the times and speeds of the tidal currents. These predictions are usually supplemented by current differences and constants through which additional predictions can be obtained for numerous other places.

TIDAL DIFFERENCE—Difference in time or height of a high or low water at a subordinate station and at a reference station for which predictions are given in the *Tide Tables*. The difference, when applied according to sign to the prediction at the reference station, gives the corresponding time or height for the subordinate station.

TIDE—The periodic rise and fall of the water resulting from gravitational interactions be-

tween the Sun, Moon, and Earth. The vertical component of the particulate motion of a tidal wave. Although the accompanying horizontal movement of the water is part of the same phenomenon, it is preferable to designate the motion as tidal current.

TIDE TABLES—Tables which give daily predictions of the times and heights of high and low waters. These predictions are usually supplemented by tidal differences and constants through which additional predictions can be obtained for numerous other places.

TIME MERIDIAN—A meridian used as a reference for time.

TROPIC CURRENTS—Tidal currents occurring semimonthly when the effect of the Moon's maximum declination is greatest. At these times the tendency of the Moon to produce a diurnal inequality in the current is at a maximum.

TROPIC RANGES—The *great tropic range* (Gc), or *tropic range*, is the difference in height between tropic higher high water and tropic lower low water. The *small tropic range* (Sc) is the difference in height between tropic lower high water and tropic higher low water. The *mean tropic range* (Mc) is the mean between the great tropic range and the small tropic range. The small tropic range and the mean tropic range are applicable only when the type of tide is semidiurnal or mixed. Tropic ranges are most conveniently computed from the harmonic constants.

TROPIC TIDES—Tides occurring semimonthly when the effect of the Moon's maximum declination is greatest. At these times there is a tendency for an increase in the diurnal range. The tidal datums pertaining to the tropic tides are designated as *tropic higher high water* (TcHHW), *tropic lower high water* (TcLHW), *tropic higher low water* (TcHLW), and *tropic lower low water* (TcLLW).

TYPE OF TIDE—A classification based on characteristic forms of a tide curve. Qualitatively, when the two high waters and two low waters of each tidal day are approximately equal in height, the tide is said to be *semidiurnal*; when there is a relatively large diurnal inequality in the high or low waters or both, it is said to be *mixed*; and when there is only one high water and one low water in each tidal day, it is said to be *diurnal*.

VANISHING TIDE—In a mixed tide with very large diurnal inequality, the lower high water (or higher low water) frequently becomes indistinct (or vanishes) at time of extreme declinations. During these periods the diurnal tide has such overriding dominance that the semidiurnal tide, although still present, cannot be readily seen on the tide curve.

INDEX TO STATIONS, 1983
(Numbers refer to table 2)

[Stations marked with an asterisk (*) are reference stations for which daily predictions are given in table 1. Page numbers of reference stations are given in parentheses.]

	NO.		NO.
		A	
Abiels Ledge.....	1711	Beaufort Airport.....	6736
Acabonack Harbor entrance.....	2316	Beaufort.....	6731
Accaceek Point.....	5246	Beaufort Inlet.....	5906-5991
Alafia River entrance.....	8651	Beaufort River.....	6706,6711,6721-6736
Albany.....	3756	Beaufort River Entrance.....	6706
Aldridge Ledge.....	776	Beaver Head.....	1991
Alligator Creek.....	6081	Beavertail Point.....	1981
Allmondsville.....	5126	Bees Ferry Bridge.....	6471
Alloway Creek.....	4246,4251	Ben Davis Point.....	4201,4206
Altamaha Sound.....	7321	Benedict.....	5551
Ambrose Channel.....	3326,3336,3356	Berkley.....	4941
Ambrose Light.....	3286	Berkley Bridge.....	4931
Anacostia River.....	5506,5511	Bermuda Hundred.....	5056
Anclote Anchorage.....	8771	Big Sarasota Pass.....	8211
Annapolis.....	5681	Big Stone Beach.....	4146
Annisquam Harbor Light.....	596	Bird Shoal.....	5971
Apalachee Bay.....	8781-8801	Biscayne Bay.....	7901
Appomattox River entrance.....	5051	Black Point.....	2521,2526
Apponaganset Bay.....	1721	Black Rock Channel.....	786
Appoquinimink River.....	4236	Blackburn Bay.....	8181
Aransas Pass.....	9141	Blair Channel.....	5871
Arnold Point, Delaware Bay.....	4221	Bland Point.....	5181
Arnold Point, Elk River.....	5786	Blind Pass.....	8691
Arthur Kill.....	3961-3986	Block Island.....	2131-2176
Ashepoo Cossaw Cutoff.....	6596	Block Island Sound.....	2106-2306
Ashepoo River.....	6591,6606	Blonde Rock.....	16
Ashe Island Cut.....	6621,6626	Bloody Point Bar Light.....	4671
Ashley River.....	6441-6471	Bloody Point, New River.....	6816,6821
Astoria, East River.....	3111	Bluff Head.....	221
Avondale.....	2406	Bluff Point.....	2826
		Blundering Point.....	5116
		Blynman Canal entrance.....	606
		Boars Head.....	66
		Boca Ciega Bay.....	8661-8731
		Boca Grande Channel.....	8031
		Boca Grande Pass.....	8101
		Bolivar Roads.....	9071
		Bonneau Ferry.....	6406
		Boston Harbor and approaches.....	726-1226
		Boston Harbor (Deer I. Lt.) * (16). Page	141
		Boston Light.....	751
		Bourne Highway Bridge.....	1786
		Bournedale.....	1791
		Bowlers Rock.....	5241
		Braddock Point.....	6786
		Bradley Point.....	7176
		Branford Reef.....	2536,2541
		Brandon Point.....	5031
		Brant Point.....	1411
		Brazil Rock.....	1
		Breakwater Harbor.....	4131
		Brenton Point.....	1841
		Breton Bay entrance.....	5416
		Brewer Point.....	5686
		Brewerton Angle.....	5726
		Brewerton Channel.....	5721
		Brickyard Creek.....	6741
		Bridgeport Harbor entrance.....	2796
		Bridgeton.....	4216
		Brier Island.....	51,56
		Bristol Harbor.....	1941
		Bristol, N.J.....	4381
		Broad Creek.....	5611
		Broad River.....	6751,6756,6771
		Broad River Bridge.....	6771
		Broad River Entrance.....	6696
		B	
Back Creek entrance.....	5796	Back River, Md.....	5756
Back River entrance.....	5821	Badgers Island.....	531,541
Bahia de San Juan.....	9271,9281	Bahia Honda Harbor.....	7941
Bakers Haulover Cut.....	7851	Bald Eagle Point.....	5616
Bald Head, Cape Fear River.....	5996	Bald Head, Kennebec River.....	216
Bald Head, Kennebec River.....	216	Baltimore Harbor Approach * (70).....	4696
Baltimore Harbor Approach * (70).....	4696	Bar Harbor.....	116
Bar Harbor.....	116	Barataria Bay.....	8901-8941
Barataria Bay.....	8901-8941	Barataria Pass.....	8921
Barataria Pass.....	8921	Barnegat Inlet.....	4066
Barnegat Inlet.....	4066	Barnstable Harbor.....	1251
Barnstable Harbor.....	1251	Barren Island.....	3301
Barren Island.....	3301	Barrytown.....	3676
Barrytown.....	3676	Bartlett Reef.....	2506
Bartlett Reef.....	2506	Bass Point.....	671-681
Bass Point.....	671-681	Bath, Kennebec River.....	241
Bath, Kennebec River.....	241	Bay of Fundy.....	1-81
Bay of Fundy.....	1-81	Bay of Fundy entrance * (4).....	81
Bay of Fundy entrance * (4).....	81	Bay Point Island.....	6691
Bay Point Island.....	6691	Bay Ridge Channel.....	3406
Bay Ridge Channel.....	3406	Bay Shore Channel.....	4156
Bay Shore Channel.....	4156	Bayonne Bridge.....	3996
Bayonne Bridge.....	3996	Beach Channel.....	3311
Beach Channel.....	3311	Bear Creek entrance.....	5736
Bear Creek entrance.....	5736	Bear Mountain Bridge.....	3596
Bear Mountain Bridge.....	3596	Bear River.....	7241
Bear River.....	7241		

Broad Sound.....	NO. 251	Castle Island.....	NO. 966
Broadway Bridge, Harlem River.....	3231	Castle Pinckney.....	6226, 6231
Broken Ground-Horseshoe Shoal, between.....	1466	Castleton-on-Hudson.....	3746
Bronx River.....	3091	Catfish Point.....	8641
Brooklyn Bridge.....	3181	Cat Island Pass.....	8961
Broomes Island.....	5541	Cats Point.....	8381
Browns Ledge.....	1606	Catskill.....	3706
Bruffs Island.....	5651	Cedar Point, Gardiners Bay.....	2366
Brunswick.....	7371	Cedar Point, Md.....	4586, 4591
Brunswick Ltd. Whistle Buoy 2B.....	7331	Cerberus Shoal.....	2256, 2261, 2276
Brunswick River, Ga.....	7361	Chapel Hill South Channel.....	3826
Brunswick River, N.C.....	6076, 6081	Chapel Point.....	5466
Bulkhead Shoal Channel.....	4271	Chapter Point.....	5346
Bull Point.....	1861	Charles Island.....	2731
Bull River.....	7026, 7036	Charles River.....	921
Bumkin Island.....	1151, 1161	Charleston entrance.....	6181
Bunces Pass.....	8361	Charleston Harbor.....	6191-6471
Burlington Island.....	4386	Charleston Harbor * (82).....	6206
Burntpot Island.....	7116	Charleston Harbor entrance.....	6191-6201
Burnside Island.....	7146	Charleston Ltd. Whistle Buoy 2C.....	6186
Bush River.....	5766	Charlestown.....	520
Butler Island.....	6156	Charlotte Harbor.....	8101, 8131
Buttermilk Channel.....	3191	Chaseville.....	7671
Buzzards Bay.....	1666-1776	Chatham Roads.....	1361
Byrd Creek Entrance.....	6776	Chechessee River.....	6761, 6766
C			
Cabin Bluff.....	7421	Chelsea Docks.....	3476
Caesar Creek.....	7901	Chelsea River.....	931, 936
Caillou Boca.....	8981	Cherry Island Flats.....	4311
Calcasieu Pass.....	8991-9011	Chesapeake.....	4946
Calf Island.....	771	Chesapeake and Delaware Canal * (76).....	5801
Calibogue Sound.....	6786-6811	Chesapeake Bay.....	4431-4811
Cambahee River.....	6631, 6636	Chesapeake Bay Bridge.....	4691
Cambridge.....	5581	Chesapeake Bay Bridge Tunnel.....	4471-4521
Camden Marine Terminals.....	4361	Chesapeake Bay entrance * (64).....	4441
Caminada Pass.....	8941	Chesapeake Beach.....	4471
Campbell Island.....	6066	Chesapeake Channel.....	4491
Camp Key.....	8511	Chesapeake Light.....	4421
Canapitsit Channel.....	1656	Chester River.....	5696-5716
Canarsie.....	3306	Chestertown.....	5716
Cape Charles, Va.....	4411	Cheston Point.....	5666
Cape Charles, off Wise Point.....	4521	Chickahominy River Bridge.....	5021
Cape Charles Light.....	4451	Childsbury.....	6396
Cape Cod Bay.....	1231-1286	Chlora Point.....	5576
Cape Cod Canal.....	1781-1801	Choptank River.....	5571-5616
Cape Cod Canal, RR. bridge * (22).....	1781	Chowan Creek.....	6716
Cape Elizabeth.....	341	Christina River.....	4306
Cape Fear River.....	5996-6086	City Island.....	3026, 3031, 3046
Cape Fourchu.....	26, 31	City Point, Conn.....	2706
Cape Haze.....	8131	City Point, Mass.....	951
Cape Henlopen.....	4116-4126	City Point, Va.....	5046
Cape Henry Light.....	5811	Claremont Landing.....	5026
Cape Henry Light.....	4426-4436, 4446, 4456	Clarks Cove.....	1726
Cape Lookout Shoals.....	5991	Clarks Island.....	431, 471, 481
Cape May.....	4076	Clason Point.....	3076
Cape May Canal.....	4096, 4101	Clay Bank Pier.....	5121
Cape May Channel.....	4106	Clay Head.....	2146
Cape May Harbor.....	4091	Clay Point.....	2426
Cape Neddick.....	361	Clearwater Harbor.....	8751
Cape Poge Light.....	1451, 1461, 1501	Clearwater Pass.....	8741
Cape Porpoise.....	351	Coggins Point.....	5041
Cape Romain.....	6171	Cohansey River.....	4211
Cape Sable.....	6, 11	Cold Spring Harbor.....	2906
Cape Spencer.....	76	Cold Spring Point.....	2101
Capers Inlet.....	6176	Combahee River.....	6631, 6636
Captain Harbor.....	2931	Commodore Point.....	7691
Captiva Pass.....	8091	Coney Island.....	3366
Carrot Island.....	5981	Coney Island Channel.....	3906
Carteret.....	3976	Coney Island Light.....	3346, 3876
Casco Bay.....	251-331	Connecticut River.....	2551-2591
Casco Passage.....	121	Cook Point.....	5571
Castle Hill.....	1851	Cooper River.....	6316-6406
		Coosaw Island.....	6656
		Coosaw River.....	6616, 6636, 6646, 6661
		Corlears Hook.....	3176

	NO.		NO.
Cornfield Pt., Long Island Sound..	2616,2621		
Cornfield Point, Md.....	5366-5376	E	
Coronala Laja.....	9251		
Corrotoman River.....	5206	East Boston.....	926
Cortez.....	8261	East Branch, Cooper River.....	6401
Cos Cob Harbor.....	2936	East Chop.....	1516,1521
Cotuit Bay.....	1486	East Fort Point.....	2861
Courtney Campbell Parkway.....	8611	East River.....	3066-3191
Cove Point.....	4601-4611	East Rockaway Inlet.....	3281
Coxsackie.....	3726	Eastchester Bay.....	3036
Crab Point.....	4336	Eastern Bay.....	5621-5661
Craighill Angle.....	4721	Eastern Plain Point.....	2291,2296
Craighill Channel.....	4716	Eastern Point, Long Island Sound.....	2466
Crane Neck Point.....	2791,2801,2806	Easton Point.....	5606
Craney Island.....	4911	Eastport.....	86
Cross Rip Channel.....	1456	Eatons Neck Point.....	2846-2856
Crow Point.....	1146	Echo Bay.....	2986
Cryders Point.....	3066	Eddy Rock Shoal.....	2571
Cumberland Island.....	7471	Eddystone.....	4326
Cumberland River.....	7411,7421	Edgartown.....	1506
Cumberland Sound.....	7431-7531	Edwards Point.....	2391
Curtis Creek entrance.....	5741	Eel Point.....	1421
Customhouse Reach.....	6241	Egg Bank.....	6611
Cut A & Cut B, Tampa Bay.....	8401	Egg Island Flats.....	4161
Cuttyhunk Island.....	1601	Egg Island Shoal.....	7206
		Egg Islands.....	7206
D		Egg Rock.....	641,646
Dahlgren Harbor Channel.....	5446	Egmont Channel.....	8281,8291
Damariscotta River.....	166	Egmont Key Light.....	8271,8281
Daniel Island Bend.....	6331,6336	Elba Island.....	6906,6911
Daniel Island Reach.....	6326	Elba Island Cut.....	6901
Daufuskie Landing Light.....	6841	Elbow of Cross Ledge.....	4191
Dauids Island.....	2991	Eldridge Shoal.....	1491
Davis Bank.....	1301	Elizabeth River.....	4911-4951
Dawho River.....	6546,6551	Elizabethport.....	3986
Daws Island, Broad River.....	6751	Elk River.....	5786-5796
Daws Island, Chechessee River.....	6761	Elliot Cut.....	6496
Deal Island.....	5311	Ellisville Harbor.....	1266
Deep Point.....	5711	Elm Point.....	3051
Deepwater Point.....	4301	EItham Bridge.....	5161
Deepwater Point, Miles River.....	5656	Essington Harbor.....	4331
Deepwater Shoals.....	5006	Eustasia Island.....	2566
Deer Island.....	801,836	Execution Rocks.....	3006
Deer Island Flats.....	846		
Deer Island Light.....	791,806-861,851	F	
Delancey Point.....	2976	Fajardo Harbor.....	9231
Delaware Bay and River.....	4106-4391	False Egg Island Point.....	4196
Delaware Bay entrance * (58).....	4111	False Hook Channel.....	3776
Dennis Port.....	1371	Farnham Rock.....	1286
Derby-Shelton bridge.....	2756	Fenwick Island Cut.....	6566
Desbrosses St., Hudson River.....	3466	Fenwick Shoal.....	4401
Deveaux Banks.....	6521	Fernandina Beach.....	7521
Diamond Island Ledge.....	301	Fiddler Ledge.....	226
Diamond Shoal Light.....	5841	Fields Cut.....	6831
Dobbs Ferry.....	3546	Fig Island.....	6921
Doboy Sound.....	7291-7311	Filbin Creek Reach.....	6346,6351
Doctor Point, Cape Fear River.....	6061	Finn's Ledge Bell.....	711
Doctor Point, Chesapeake Bay.....	5186	Fire I. Lighted Whistle Buoy 2FI.....	3241
Dorchester Bay.....	991	Fire Island Inlet.....	3246,3266
Doubling Point.....	231	Fisherman Island.....	4496-4516
Dover Bridge.....	5596	Fisher Point.....	4366
Dram Tree Point.....	6071	Fishers Island.....	2251,2276
Drum I., Charleston Hbr. 6296,6301,6311,6316	6316	Fishers Island Sound.....	2391-2431
Drum Point.....	4596,5526	Fishing Bay.....	5351
Drum Point Island.....	7481	Five Fathom Bank.....	4081
Drummond Point.....	7651	Florida Passage.....	7211,7221
Duck Island Bluff.....	2871	Florida Reefs to Midnight Pass....	7901-8201
Dumpling Island.....	4966	Flushing Creek.....	3081
Dumpling Rocks.....	1716	Folly Island.....	6511,6516
Dutch Gap Canal.....	5061	Folly Island Channel.....	6271
Dutch Island, Narragansett Bay....	1991,2001	Folly Reach.....	6276
Dutch Island, Skidaway River.....	7101	Fort Clinch.....	7431-7461
Dyer Island.....	1921,1931	Fort George River.....	7571

	NO.		NO.
Fort Independence.....	901,906	Great Wicomico River.....	5361
Fort Johnson.....	6211,6216	Green Hill Point.....	2181
Fort Lafayette.....	3376	Greenbury Point.....	5676
Fort Lauderdale.....	7781	Greenwich Bay.....	2031
Fort McHenry.....	5746	Greenwich Point, Delaware Bay.....	4356
Fort McHenry Angle.....	5731	Greenwich Point, L. I. Sound.....	2916,2921
Fort Macon.....	5916,5921	Gregory Point.....	2841
Fort Pierce Inlet.....	7761	Grove Point.....	4786,5771
Fort Point Channel.....	891	Gulfport.....	8681
Fort Point, Portsmouth Harbor.....	411	Gull Island.....	1686
Fort Point, St. Marys River.....	5381	Gull Point.....	1201
Fort Pulaski.....	6871-6891	Gunboat Shoal.....	571
Fort Sumter.....	6206	Gunpowder River entrance.....	5761
Fort Wool.....	4821-4836	Gurnet Point.....	1276
Fourteen Foot Bank Light.....	4151		
Fowey Rocks Light.....	7891	H	
Fowler Island.....	2746	Hackensack River.....	4041
Frankfort Island.....	556	Haig Point Light.....	6791
Frazier Point.....	6121,6126	Hail Point.....	5706
Freestone Point.....	5486	Hains Point.....	5501
Fripps Inlet.....	6671	Halfmoon Shoal.....	1386,1391
Frog Point.....	5316	Hallowing Point.....	5491
Frying Pan Shoals.....	6101	Hammonasset Point.....	2651,2656
Frying Pan Shoals Light.....	6106	Hampton Roads.....	4816-4906
Furber Strait.....	566	Handkerchief Lighted Whistle Buoy "H".....	1381
		Harbor Key.....	8421
G		Harbor of Refuge.....	2106,2111,2126
Gadsden Point.....	8621,8631	Harlem River.....	3196,3236
Gallops Island.....	986-996,1066	Harris Creek.....	5616
Galloupes Point.....	631	Hart Island, N.Y.....	3016,3021,3026
Galveston Bay.....	9061-9121	Hartford Jetty.....	2591
Galveston Bay entrance * (124).....	9061	Hatchett Point.....	2546
Galveston Causeway RR. Bridge.....	9101	Hat Island.....	126
Galveston Channel.....	9091	Hatteras Inlet.....	5831
Gandy Bridge.....	8581,8591	Haverstraw.....	3576
Gangway Rock.....	521	Havre de Grace.....	4811
Gannet Rock.....	61	Hay Beach Point.....	2356
Gardiners Bay.....	2311-2386	Heald Bank.....	9161
Gardiners Island.....	2286	Hedge Fence.....	1536
Gardiners Point.....	2341	Hedge Fence Lighted Gong Buoy.....	1496
Gardiners Point Ruins.....	2336	Hell Gate * (46).....	3126
Gasparilla Pass.....	8161	Hempstead Harbor.....	2956,2961,2971
Gay Head.....	1581,1591,1596	Henderson Point.....	511
George Washington Bridge.....	3516	Hendersons Point.....	5791
Georges Bank and vicinity.....	1296	Herod Point.....	2691,2696
Georges Island.....	976,1011,1031	Hick Rocks.....	431
Georgetown, Md.....	5781	Higganum Creek.....	2576
Georgetown, S.C.....	6141	Highland Falls.....	3606
Germantown Point.....	1211	Hills Point.....	5561
Gilmerton Highway Bridge.....	4951	Hilton Head.....	6701
Gloucester.....	4351	Hobcaw Creek.....	6416
Gloucester Harbor entrance.....	601	Hoffman Island.....	3886
Gloucester Point.....	5101,5106	Hog Creek Point.....	2321
Goat Island.....	501	Hog Island, Narragansett Bay.....	2081
Goff Point, Gardiners Bay.....	2311	Hog Island, Delaware River.....	4341
Goff Point, York River.....	5136	Hog Island Channel.....	6266
Golden Gate Point.....	8241	Hog Island Reach.....	6291,6306
Gooseberry Neck.....	1666	Hog Point.....	5011
Goshen Point.....	6536,6541	Hole Point Reach.....	1226
Gould Island.....	1911	Holland Point.....	4641,4651
Governors Island.....	3186	Hooper Strait.....	5356
Grace Point, 2.0 miles NW of.....	2191	Horibeck Creek entrance.....	6426,6436
Grand Trunk Wharves.....	321	Horse Reach.....	6286
Grants Tomb.....	3506	Horseshoe Point.....	4666
Grape Island.....	1176,1181	Horseshoe Shoal.....	6021
Grass Hassock Channel.....	3316	Horton Point.....	2641
Great Beds Light.....	3941	Housatonic River.....	2736-2756
Great Gull Island.....	2456	Houston Channel.....	9111,9121
Great Pig Rocks.....	626	Howell Point.....	4781
Great Point.....	1396,1401	Huckleberry Island.....	2996,3001
Great Point Clear.....	8851	Hudson.....	3716
Great Round Shoal Channel.....	1351	Hudson River.....	3456-3766
Great Salt Pond entrance.....	2166,2171	Hull Gut.....	1046

	NO.
Hunniwell Point.....	211
Huntington Bay.....	2861
Hunts Point.....	3096
Hussey Sound.....	261-281
Hutchinson Island.....	6591
Hutchinson River.....	3041
Hyannis Harbor.....	1476
Hyde Park.....	3656
Hypocrite Channel.....	741

I

Indian River Inlet.....	4396
Indian Rocks Beach.....	8731
Intracoastal Waterway, Southport, N.C..	6001
Isaac Shoal.....	8051
Isla Marina.....	9241
Isle au Haut.....	136
Isle of Hope City.....	7106,7111
Isles of Shoals Light.....	576

J

Jacksonville.....	7701,7711
Jamaica Bay.....	3296-3316
Jamaica Island, Portsmouth Harbor.....	451
Jamaica Point, off.....	5586
James Island, Chesapeake Bay.....	4621,4626
James River.....	4971-5066
Jamestown Island.....	5016
Jane's Island.....	5296
Jehossee Island.....	6581
Jekyll Creek.....	7401
Jennings Point.....	2361
Joe Island.....	8411
Joe's Cut.....	7061
Johns Island.....	6501
Johns Island Airport.....	6486
Johns Island Bridge.....	6491
Johns Pass.....	8711
Johnson Creek.....	7271
Jones Inlet.....	3271
Jones Point, Alexandria, Va.....	5496
Jones Point, Rappahannock River.....	5231

K

Katama Point, Katama Bay.....	1511
Kedges Straits.....	5301
Kelly Island.....	4186
Kelly Point.....	4296
Kelsey Point.....	2626,2646
Kennebec River.....	211-241
Kent Island Narrows.....	5701
Kent Point.....	4656,4661
Kenwood Beach.....	4616
Key West.....	7961-8021
Key West * (106).....	7981
Keyport Channel.....	3926
Kickamuit River.....	1971
Kill Van Kull.....	3991-4016
King Island.....	6981
Kings Bay.....	7491
Kings Cove.....	1206
Kings Island Channel.....	6961
Kingsley Creek.....	7531
Kingston Point.....	3666
Kittery Point Bridge.....	441
Kitts Rocks.....	381

L

Lafayette Swing Bridge.....	6151
Lake George.....	7751

	NO.
Lake Worth Inlet.....	7771
Lambert Point.....	4916
Largo Shoals.....	9201
Lazaretto Creek Entrance.....	7026
Lemon Island.....	6766
Lester Manor.....	5166
Lewis Bay.....	1481
Lewis Island.....	8501
Lewis Point.....	2156,2161,2206
L'Hommedieu Shoal.....	1536,1546
Lincoln Ledge.....	236
Little Barnwell Island.....	6781
Little Bay entrance.....	561
Little Brewster Island.....	736
Little Calf Island.....	746,781
Little Choptank River.....	5561,5566
Little Creek.....	4526,4531
Little Don Island.....	7151
Little Gull Island.....	2281,2301,2446,2451,2501
Little Harbor entrance.....	391
Little Nahant.....	636
Little Nahant Cupola.....	686
Little Narragansett Bay entrance.....	2401
Little Ogeechee River Entrance....	7156,7201
Little Peconic Bay entrance.....	2381
Little Pine Island Bridge.....	8121
Little Sarasota Bay.....	8191
Little Wassaw Island.....	7186
Lloyd Point.....	2881
Long Beach, Long Island.....	3276
Long Beach Point.....	2351
Long Branch, Fla.....	7681
Long Island, Ga.....	7131,7136
Long Island Head, Mass.....	841
Long Island Sound, N.Y.....	2436-3061
Long Island, south coast, N.Y.....	3241-3291
Long Key.....	7911
Long Key Viaduct.....	7921
Long Neck Point.....	2876
Long Point, Eastern Bay.....	5626,5661
Long Shoal.....	1446
Longboat Pass.....	8251
Lord Delaware Bridge.....	5146
Love Point, Chesapeake Bay.....	4701-4711
Love Point, Chester River.....	5696
Lovell Island.....	721,796,971,1001,1006
Low Point.....	186
Lower Coal Dock.....	2491
Lower Hell Gate, Knubble Bay.....	196
Lower Machodoc Creek entrance.....	5406
Lurcher Shoal.....	36-46
Lynch Point.....	5756
Lynde Point.....	2551
Lynn Harbor.....	696
Lynnhaven Inlet.....	4466
Lynnhaven Roads.....	4461
Lyons Creek Wharf.....	5556

M

McCrie Shoal.....	4086
McQueen Island Cut.....	6896
MacKay Creek.....	6811
Mackay River.....	7351
Mackerel Cove.....	1871
Magothy River entrance.....	5691
Maine Coast.....	86-206,341-371
Mamaroneck Harbor.....	2981
Manahawkin Drawbridge.....	4071
Manasquan Inlet.....	4051
Manasquan River.....	4056
Mandarin Point.....	7731
Mangrove Point.....	8531
Manhasset Bay.....	3011

	NO.		NO.
Manhattan, East River, N.Y.	3156		
Manilla	8931		
Manokin River entrance	5306		
Manomet Point	1271		
Marblehead Channel	611		
Marcus Hook	4321		
Martha's Vineyard	1336		
Martins Industry	6676		
Marvin Island	501		
Maryland Point	5471		
Matagorda Channel	9131		
Matinecock Point	2946, 2951		
Matlacha Pass	8121		
Mattapoissett Harbor	1751		
Mattaponi River	5151, 5156		
Mattituck Point	2661		
Maurice River	4166-4176		
Mauricetown	4171		
Maximo Pt., bridge 0.8 mile south of	8671		
Mayport	7601		
Megansett Harbor	1706		
Menemsha Bight	1586		
Merrimack River entrance	581		
Mesquite Point	9051		
Miacomet Pond	1326		
Miami Harbor	7851-7891		
Miami Harbor entrance * (100)	7881		
Miami Outer Bay Cut entrance	7871		
Middle Branch ent., Patapsco River	5751		
Middle Ground, Chesapeake Bay	4486		
Middle Marshes	5986		
Midland Beach	3866		
Midnight Pass entrance	8201		
Mile Point	7611		
Miles River	5656, 5661		
Milford Point	2736		
Mill Rock, Hell Gate	3116, 3121		
Miller Island	4761		
Millville	4176		
Mispyllion River	4141		
Mississippi Sound	8891		
Mobile Bay	8821-8881		
Mobile Bay entrance * (118)	8831		
Mobile Point	8831, 8841		
Mobile River entrance	8861		
Mobjack Bay	5176-5186		
Monomoy Point	1306, 1356, 1376		
Montauk Harbor entrance	2266		
Montauk Point	2231-2241		
Montgomery	7161		
Moon Head	1101, 1126		
Moosabec Reach	106, 111		
Morehead City	5941, 5946		
Moreland	6386		
Morgan Island	6616, 6646		
Moser Channel	7931		
Mosquito Point	5191, 5196		
Mount Hope Bay	1961, 1971		
Mount Hope Bridge	1951		
Mount Prospect	2271		
Mountain Point	5691		
Mud River	7281		
Mulberry Point	5611		
Mulford Point	2601		
Mullet Key Channel entrance	8311		
Mullet Key Shoal Light	8351		
Muscongus Sound	156		
Muskeget Channel	1436		
Muskeget Island	1426		
Muskeget Rock	1431		
Myakka River Bridge	8151		
Myrtle Sound	6051		
Mystic, Mystic River, Conn.	2421		
Mystic River Bridge, Mass.	941, 946		
		N	
Nahant	651-661		
Nansemond River	4956-4966		
Nanticoke River	5341, 5346		
Nantucket Harbor entrance	1416		
Nantucket Island	1316		
Nantucket Shoals	1311		
Nantucket Sound	1356-1551		
Napatree Point	2396		
Narragansett Bay	1811-2101		
Nasketucket Bay	1746		
Nassau River	7561		
Nassau Sound	7541-7571		
Nauset Beach Light	1291		
Neponset River	966		
Newport	5951, 5956		
New Baltimore	3736		
New Bedford Harbor	1731		
New Brighton	4006		
New Castle	4291		
New Ground	8041		
New Hamburg	3636		
New Haven Harbor entrance	2701		
New Jersey Coast	4051-4101		
New London Harbor entrance	2471		
New Pass, Sarasota Bay	8231		
New Point Comfort	5176		
New River	6816, 6821		
New York Harbor	3326-3446, 3776-3906		
Newark Bay	4021-4036		
Newburgh	3626		
Newburyport	586		
Newport Harbor	1881		
Newport News	4891-4906, 4971-4981		
Newtown Creek	3161		
Niantic	2516		
No Name Key	7951		
Noank	2416		
Nobles Island	546, 551		
Nobska Point	1551, 1561		
Nomini Creek entrance	5411		
North Brother Island	3101		
North Charleston	6341		
North Edisto River entrance	6526		
North Haven Peninsula	2371		
North Hill Point	2431		
North Newport River	7251		
North Point, Chesapeake Bay	4741		
North Santee River entrance	6161		
Northbury	5171		
Northport Bay	2871		
Northport Bay entrance	2866		
Norton Point	1566		
Norton Shoal	1446		
Norwalk River	2841		
Nowell Creek entrance	6431		
Nubble Channel	1036		
Nut Island	1111, 1116		
		O	
Oak Neck Point	2926		
Oatland Island	7081		
Ocracoke Inlet	5851-5881, 5901		
Odingsell River Entrance	7166		
Ogeechee River	7201, 7211		
Old Fernandina	7511		
Old Ferry Point	3071		
Old Field Point	2766, 2771		
Old Harbor Point	2151		
Old Man Shoal, Nantucket Shoals	1321		
Old Orchard Shoal Light	3846		
Old Plantation Flats Light	4536		

INDEX TO STATIONS, 1983

	NO.		NO.
Old Point Comfort.....	4841-4856	Pocomoke Sound.....	5266-5286
Old Town Wharf.....	2966	Pocomoke Sound Approach.....	5266
Oldsmans Point.....	4316	Point Allerton.....	756-766
Onset Bay.....	1771,1776	Point Comfort.....	3921
Orchard Point.....	5201	Point Gammon.....	1471
Ordinary Point.....	5776	Point Judith.....	2106-2126
Ordinance Reach.....	6356	Point Lookin.....	4576
Orient Point.....	2331,2606	Point No Point, Conn.....	2761
Ossabaw Sound.....	7196-7221	Point No Point, Md.....	4581
Ossining.....	3566	Point of Pines.....	701,706
Oxford, Tred Avon River.....	5601	Point of Shoals.....	5001
Oyster Bay.....	2891-2906	Point Patience.....	5536
Oyster River Point.....	2711	Point Peter.....	6091
P			
Pablo Creek.....	7621	Point Pleasant Canal.....	4061
Pages Rock.....	5111	Point Shirley.....	866
Palominos Island.....	9221	Point Ybel.....	8081
Pamlico Sound.....	5831-5891	Pollock Rip Channel.....	1341
Pamunkey River.....	5161-5171	Pollock Rip Channel * (28).....	1346
Paradise Point.....	2376	Pond entrance.....	2116
Parris Island.....	6711,6721	Pond Point, Conn.....	2716
Parris Island Lookout Tower.....	6756	Pond Point, Maine.....	101
Parrot Creek.....	6641	Pooles Island.....	4746,4756,4766
Parson Island.....	5636,5641	Poplar Island.....	5621
Pasaje de San Juan.....	9261	Poplar Point.....	5591
Pascagoula River Highway Bridge.....	8891	Port Arthur Canal entrance.....	9041
Pass Abel.....	8911	Port Elizabeth Channel.....	4031
Pass aux Herons.....	8881	Port Everglades.....	7791-7841
Passage Key Inlet.....	8321	Port Jefferson Harbor entrance.....	2786
Passaic River.....	4046	Port Morris.....	3106
Pass-a-Grille Channel.....	8661	Port Royal.....	5261
Patapsco River.....	5721-5751	Port Royal Plantation Tower.....	6686
Patience Island.....	2041,2051	Port Royal Sound.....	6681-6781
Patuxent River.....	5526-5556	Port Tampa.....	8571
Pawcatuck River.....	2406	Port Wentworth.....	6991
Pea Island.....	666	Portland Breakwater Light.....	311
Pea Patch Island.....	4276	Portland Bridge.....	331
Peddocks Island.....	1051,1056,1086,1121,1166	Portland Harbor entrance.....	291
Pee Dee River.....	6146	Portsmouth Harbor.....	381-541
Peekskill.....	3586	Portsmouth Harbor entrance * (10).....	401
Pelican Bank.....	6601	Potomac River.....	5366-5521
Penikese Island.....	1676,1681	Potomac River Bridge.....	5461
Peningo Neck.....	2941	Poughkeepsie.....	3646
Penns Neck.....	4281,4286	Prim Point.....	71
Pensacola Bay.....	8811	Providence.....	2081
Persimmon Point.....	5456	Provincetown Harbor.....	1241
Perth Amboy.....	3946,3961	Prudence Island.....	2021
Petit Chou Island.....	7016	Puerto Rico.....	9171-9281
Philip Head.....	1221	Pungoteague Creek entrance.....	5271
Phoenix Park.....	7661	Punta Gorda.....	8141
Piankatank River.....	5181	Punta Ostiones.....	9171
Pier 67, East River.....	3166	Purtan Island.....	5131
Pigeon Island.....	7141	Q	
Pig Point.....	4956	Quamquisset Harbor.....	1696
Pig Rock.....	1186,1191	Quantico.....	5476
Pine Creek Point.....	2816	Quantico Creek entrance.....	5481
Pine Island.....	6561	Quarte Bayoux Pass.....	8901
Pine Key.....	8371	Quicks Hole.....	1641-1651
Pine Island Sound.....	8111	Quonochontaug Beach.....	2196,2201
Pine Point.....	1216	R	
Pinellas Point.....	8431-8471	Rabbit Island.....	6131
Piney Point, Fla.....	8481,8491	Raccoon Key.....	7181
Piney Point, Md.....	5391-5401	Race Point, Cape Cod Bay.....	1231,1236
Pinner Point.....	4926	Race Point, Long Island Sound.....	2436
Piscataqua River.....	546-566	Radio Island.....	5961
Pleasant Point.....	6506	Ragged Point.....	5566
Plum Gut.....	2461	Rainsford Island.....	1061,1071-1081
Plum Point.....	4631	Ram Island, Mass.....	616,621
Plum Island.....	2341,2526,2531	Ram Island, N.Y.....	2326,2346
Plum Island Sound entrance, Mass.....	591	Ram Island Reef.....	2411
Plymouth Harbor.....	1281	Ramos Cay.....	9211
Pocomoke River.....	5286		

	NO.		NO.
Ramshorn Creek Light.....	6796	Sandy Hook.....	3786-3816
Rancocas Creek.....	4376	Sandy Hook Approach.....	3291
Rappahannock River.....	5191-5261	Sandy Hook Bay.....	3911, 3916
Raritan Bay.....	3921-3941	Sandy Point, Block I....	2136, 2141, 2176, 2186
Raritan River.....	3946-3956	Sandy Point, Nanticoke River.....	5341
Rathall Creek entrance.....	6421	Sandy Point, Patuxent River.....	5531
Reaves Point.....	6026-6041	Sandy Point, Solomons Island.....	5531
Rebellion Reach.....	6256, 6276	Sapelo Sound.....	7261-7281
Red Bank.....	3931	Sarasota Bay.....	8211-8261
Red Bay Point.....	7741	Sasanoa River.....	186, 206
Red Hook.....	3436	Sassafras River.....	5771, 5781
Red Hook Channel.....	3416	Saugatuck River.....	2821, 2826
Red Point.....	4806	Saugerties.....	3686
Reedy Island.....	4241	Savannah.....	6946, 6956
Reedy Point.....	4256, 4261	Savannah Light.....	6851
Reedy Point Bridge, C & D Canal.....	5806	Savannah River.....	6851-7006
Remley Point.....	6411	Savannah River entrance * (88).....	6861
Ribbon Reef.....	1671	Sawpit Creek entrance.....	7541
Rikers Island Channel.....	3086	Saybrook Breakwater.....	2596
Riverdale.....	3536	Saybrook Point.....	2556
Roanoke Point.....	2676, 2681	Schuylkill River.....	4346
Roasting Ear Point, Fishing Bay.....	5351	Seabrook Bridge, New Orleans.....	8951
Robbins Reef.....	3426, 4016	Seal Island.....	21
Robinsons Hole.....	1576, 1626-1636	Seavey Island.....	461, 471, 491
Robins Island.....	2386	Seekonk River.....	2091, 2101
Robins Point.....	4771	Seguine Point.....	3936
Rockaway Inlet.....	3296, 3896	Sevenfoot Knoll Light.....	4726
Rocketts.....	5066	Severn River.....	5676-5686
Rocklanding Shoal Channel.....	4986-4996	Sewells Point.....	4876-4886
Rock Point.....	5436	Shackleford Banks.....	5906
Rocky Hill.....	2586	Shackleford Point.....	5976
Rocky Point, Block Island Sound.....	2306	Shagwong Reef.....	2261
Rocky Point, Chesapeake Bay.....	4801	Sharps.....	5236
Rocky Point, Long Island Sound.....	2611, 2891	Sharps Island.....	4636
Rogue Point.....	5216	Sheep Island.....	1171
Roosevelt Inlet.....	4136	Sheep Island Slue.....	5891
Roosevelt Island.....	3131, 3151	Sheepscot River.....	176
Rose Island.....	1891, 1901	Sheffield Island Harbor.....	2836
Ross Island.....	8561	Sheffield Island Tower.....	2831
	5	Shell Point.....	8521
Sabine.....	9031	Sheridan Point.....	5546
Sabine Bank.....	9151	Shinnecock Bay.....	3256
Sabine Pass.....	9021-9051	Shinnecock Canal.....	3251
Sachem Head.....	2666, 2671, 2686	Shinnecock Inlet.....	3261
Sagamore Beach.....	1261	Shippan Point.....	2886
Sagamore Bridge.....	1796	Shipyard Creek.....	6321
St. Andrews Sound.....	7391-7421	Shoal Point.....	2811
St. Catherines Sound.....	7231-7251	Shooters Island.....	3991, 4021
St. Clements Bay entrance.....	5421	Shrewsbury River.....	3911, 3916
St. Clements Island.....	5426-5431	Shutes Folly Island.....	6236
St. Helena Sound.....	6601, 6611, 6626	Shutes Reach.....	6281
St. Johns Bluff.....	7641	Silver Point.....	3696
St. Johns Point.....	7581	Sippican Harbor.....	1756
St. Johns River.....	7581-7751	Sisters Creek entrance.....	7631
St. Johns River entrance * (94).....	7591	Six Mile Reef.....	2631, 2636
St. Jones River.....	4181	Skidaway Narrows.....	7126
St. Joseph Sound.....	8741-8771	Skidaway River.....	7091
St. Marks.....	8801	Skull Creek.....	6746, 6806
St. Marks River.....	8781-8801	Smith Cove.....	2481
St. Marys River, Md.....	5381	Smith Island Shoal.....	4416
St. Marys River-Cumberland Sound..	7431-7531	Smith Point.....	4566, 4571
St. Petersburg.....	8541	Smoking Point.....	3971
St. Simons Sound.....	7341-7381	Smuggedy Swamp.....	6586
Sakonnet River.....	1811-1831	Smyrna River.....	4226
Salamander Point.....	421	Snake Island.....	6481
Salem River.....	4266	Snell Isle.....	8551
Salisbury.....	5336	Snake Island.....	856
Sampit River entrance.....	6136	Snow Point.....	6376
Sampson Island.....	6571, 6576	Snows Cut.....	6046
Sams Point.....	6661	Sound Beach.....	2726
Sand Point.....	691	South Amelia River.....	7551
Sandwich Harbor.....	1256	South Boston.....	911, 916
		South Brother Island.....	3101
		South Capitol Street Bridge, D.C.....	5511

	NO.
South Carolina Coast.....	6161-6186
South Edisto River.....	6556-6586
South River, Md.....	5671
South River, N.J.....	3956
South Santee River entrance.....	6166
Southport.....	6006,6011
Southwest Ledge.....	2211,2216
Sow and Pigs Reef.....	1671
Spanish Wells.....	6801
Spectacle Island.....	866-891
Spesutie Island.....	4796
Spuyten Duyvil.....	3526
Spuyten Duyvil Creek entrance.....	3236
Squantum.....	1131
Squantum Point.....	956,961
Squash Meadow.....	1516
Stafford Island.....	7501
Stage Harbor.....	1366
Stamford Harbor entrance.....	2911
Statue of Liberty.....	3446
Stingray Point.....	4556,4561
Stoddard Hill.....	2486
Stodders Neck.....	1196
Stono Inlet.....	6476
Stono River.....	6476-6506
Stony Point.....	4231
Stratford Point.....	2776,2781
Stratford Shoal.....	2721
Strawberry Hill.....	1141
Sugarloaf Island.....	5936
Sullivans Island.....	6221
Sunken Ledge.....	1091
Sunshine Skyway Bridge.....	8391
Sunny Point.....	4552
Susquehanna River.....	4811
Swan Point, Chesapeake Bay.....	4731,4736
Swan Point, Potomac River.....	5441

T

Tail of the Horseshoe.....	4481
Tampa Bay.....	8271-8651
Tampa Bay entrance * (112).....	8291
Tangier Sound.....	5291-5356
Tangier Sound Light.....	5291
Tappahannock Bridge.....	5251,5256
Tarpaulin Cove.....	1571
Tarpley Point.....	5226
Tarrytown.....	3556
Teaches Hole Channel.....	5861
Tensaw River entrance.....	8871
Terrebonne Bay.....	8961
Texas Point.....	9021
Thames River.....	2476-2491
The Battery.....	3456
The Cove.....	6261
The Graves.....	726
The Narrows, Fla.....	8731
The Narrows, New York Harbor * (52).....	3386
The Race.....	2436-2451
The Race * (34).....	2441
The Tee.....	6391
Thieves Ledge.....	731
Thimble Shoal Channel.....	4476
Thimble Shoal Light.....	4816
Thomas Pt. Shoal Light.....	4676,4681
Thompson Island.....	891,896
Throgs Neck * (40).....	3056,3061
Thunderbolt.....	7076
Tilghman Point.....	5646
Tiverton.....	1821,1831
Tocoi.....	7751
Tolchester Beach.....	4751
Tolly Point.....	4686

	NO.
Tombstone Point.....	5926
Tompkinsville.....	3396
Torresdale.....	4371
Tottenville.....	3966
Towles Point.....	5211
Town Creek.....	6246,6251
Town Point Bridge.....	4961
Treasure Island.....	8701,8721
Tred Avon River.....	5601,5606
Tremley Point.....	3981
Troy.....	3766
Tuckernuck Island.....	1331
Tuckernuck Shoal.....	1406
Tue Marshes Light.....	5081-5091
Tufts Point.....	3971
Turkey Point, Eastern Bay.....	5631
Turkey Point, Elk River.....	4791
Turtle River.....	7381
Turning Basin, Beaufort Inlet.....	5931
Turning Basin, Northeast River.....	6096
Twotree Island Channel.....	2511

U

Upper Hell Gate.....	206
Upper Machodoc Creek entrance.....	5451
Upper Midnight Channel.....	6056

V

Valiant Rock.....	2441
Venice Inlet.....	8171
Vernon River.....	7151,7161
Victor Point.....	5321
Vieques Passage * (130).....	9181
Vieques Sound.....	9191
Vineyard Haven.....	1526
Vineyard Sound.....	1556-1656
Virginia Beach.....	5816,5821

W

W Howard Frankland Bridge.....	8601
Waccamaw River.....	6151,6156
Wadmalaw River.....	6531-6541
Wakema.....	5151
Walkerton.....	5156
Wallace Channel.....	5881
Walls Cut.....	6836
Wando River.....	6411-6436
Wappoo Creek.....	6446
Waquoit Bay.....	1541
Wareham River.....	1761,1766
Warren.....	2071
Warren River.....	2061,2071
Washington, D.C.....	5516,5521
Washington Canal, N.J.....	3951
Wasque Point.....	1441
Wassaw Island.....	7046
Wassaw Island, Ossabaw Sound.....	7171
Wassaw Island, Wassaw Sound.....	7006
Wassaw Sound.....	7016-7126
Watch Hill Point.....	2221,2226
Waterview.....	5221
Watts Island.....	5276,5281
Weepecket Island.....	1691
Weir River.....	1136
Wellfleet Harbor.....	1246
West Chop.....	1531,1556
West Falmouth Harbor.....	1701
West Head.....	1086,1091,1106
West Island.....	1736,1741
West Marsh Island.....	6466
West New Brighton.....	4001

	NO.		NO.
West Norfolk Bridge.....	4921	Windmill Point, Va.....	5036
West Penobscot Bay.....	146	Wine Island Pass.....	8971
West Point, N.Y.....	3616	Winter Point.....	7721
West Point, Va.....	5141	Winter-Quarter Shoal.....	4406
West River.....	5666	Winthrop Head.....	716
Western Passage, Maine.....	91,96	Winthrop Point.....	2476
Westport River.....	1661	Winyah Bay.....	6111-6156
Weymouth Back River.....	1186	Wolf Trap Light.....	4546,4551
Whale Branch River.....	6666	Woods Hole.....	1611-1621
Whitehaven.....	5326,5331	Woods Point.....	6371
Whitehill.....	4391	Wooster Island.....	2751
White Point.....	6546	Worton Point.....	4776
Whooping Island.....	6551	Wreck Shoal.....	1491
Wickford Harbor.....	2011	Wright River.....	6826
Wicomico River, Tangier Sound.....	5321-5336	Wye River.....	5651
Wicopasset Island.....	2246		
Wilcox Island Park.....	2581	Y	
Willetts Point.....	3061	Yellow House Creek.....	6361
Williamsburg Bridge.....	3171	Yellow House Landing.....	6366
Williman Creek.....	6651	Yeocomico River entrance.....	5386
Willoughby Bay.....	4871	York Harbor entrance.....	371
Willoughby Spit.....	4861,4866	York River.....	5071-5171
Wilmington, N.C.....	6086	York Spit Channel.....	4541
Wilmington Island.....	7021	York Spit Light.....	5076
Wilmington River.....	7056,7076,7096	Yorktown.....	5096
Windmill Point, Mass.....	1061,1156		

