

PUBLICATIONS RELATING TO TIDES AND TIDAL CURRENTS

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.

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

JANUARY

FEBRUARY

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	0139	0424	2.2E	16	0203	0435	1.5E	1	0309	0552	2.2E	16	0243	0534	1.8E
Sa	0800	1017	1.8F	Su	0822	1023	1.2F	Tu	0933	1143	1.6F	W	0921	1127	1.2F
	1352	1654	2.6E		1400	1658	1.9E		1520	1815	2.4E		1434	1756	2.0E
	2046	2253	1.6F		2103	2253	1.0F		2206				2146	2352	1.3F
2	0234	0517	2.1E	17	0240	0518	1.5E	2		0014	1.6F	17	0314	0619	1.8E
Su	0855	1110	1.7F	M	0904	1106	1.2F	W	0401	0643	2.1E	Th	1005	1210	1.2F
	1444	1745	2.5E		1430	1741	1.9E		1028	1232	1.4F		1501	1839	1.9E
	2138	2346	1.6F		2142	2338	1.1F		1612	1905	2.2E		2225		
									2257						
3	0329	0611	2.1E	18	0316	0602	1.6E	3		0103	1.4F	18		0036	1.3F
M	0951	1201	1.6F	Tu	0948	1149	1.1F	Th	0454	0737	1.9E	F	0347	0705	1.8E
	1538	1838	2.4E		1456	1822	1.9E		1125	1323	1.2F		1052	1257	1.2F
	2231				2222				1706	1957	2.0E		1535	1924	1.8E
									2350				2307		
4		0039	1.5F	19		0021	1.1F	4		0153	1.3F	19		0123	1.3F
Tu	0426	0706	2.0E	W	0352	0648	1.6E	F	0548	0830	1.8E	Sa	0427	0754	1.8E
	1050	1254	1.4F		1034	1235	1.1F		1225	1414	1.0F		1144	1348	1.1F
	1634	1932	2.2E		1523	1908	1.8E		1802	2049	1.8E		1620	2015	1.8E
	2326				2303								2356		
5		0132	1.4F	20		0106	1.2F	5	0044	0242	1.1F	20		0214	1.3F
W	0523	0803	1.8E	Th	0429	0733	1.6E	Sa	0643	0926	1.7E	Su	0518	0847	1.8E
	1151	1348	1.2F		1123	1324	1.1F		1325	1506	0.8F		1242	1440	1.0F
	1732	2027	2.1E		1558	1955	1.8E		1901	2144	1.5E		1718	2106	1.7E
					2346										
6	0022	0227	1.3F	21		0153	1.2F	6	0140	0335	1.0F	21	0051	0305	1.3F
Th	0621	0902	1.7E	F	0513	0824	1.6E	Su	0739	1031	1.6E	M	0623	0942	1.8E
	1253	1445	1.0F		1217	1415	1.0F		1428	1725	0.6F		1344	1537	1.0F
	1832	2122	1.9E		1644	2044	1.7E		2001	2241	1.4E		1839	2206	1.7E
7	0118	0319	1.1F	22	0034	0243	1.2F	7	0236	0427	0.9F	22	0151	0402	1.3F
F	0719	1008	1.7E	Sa	0605	0916	1.6E	M	0834	1147	1.5E	Tu	0735	1041	1.8E
	1356	1544	0.8F		1315	1508	1.0F		1528	1800	0.6F		1446	1636	1.0F
	1932	2221	1.7E		1743	2135	1.7E		2100	2339	1.3E		2007	2305	1.7E
8	0213	0417	1.0F	23	0125	0336	1.2F	8	0330	0520	0.8F	23	0253	0502	1.3F
Sa	0815	1124	1.7E	Su	0705	1011	1.7E	Tu	0926	1308	1.6E	W	0844	1143	1.9E
	1458	1744	0.7F		1414	1603	1.0F		1623	2019	0.7F		1546	1737	1.1F
	2032	2323	1.6E		1901	2232	1.7E		2155				2120		
9	0308	0612	1.0F	24	0219	0431	1.3F	9		0043	1.3E	24		0006	1.7E
Su	0908	1246	1.7E	M	0808	1110	1.8E	W	0422	0614	0.8F	Th	0354	0601	1.4F
	1556	1947	0.7F		1512	1701	1.0F		1016	1357	1.6E		0948	1242	2.1E
	2129				2023	2328	1.7E		1713	2105	0.7F		1642	1837	1.2F
									2247				2224		
10		0023	1.5E	25	0315	0528	1.4F	10		0134	1.3E	25		0106	1.9E
M	0359	0657	1.0F	Tu	0909	1207	2.0E	Th	0510	0704	0.9F	F	0451	0702	1.5F
	0959	1341	1.7E		1609	1800	1.1F		1102	1420	1.7E		1046	1341	2.3E
	1650	2040	0.8F		2134				1757	2150	0.8F		1735	1938	1.3F
	2222								2334				2322		
11		0115	1.5E	26		0027	1.8E	11		0212	1.4E	26		0206	2.0E
Tu	0448	0758	1.0F	W	0411	0623	1.5F	F	0555	0751	1.0F	Sa	0546	0759	1.6F
	1046	1420	1.8E		1007	1305	2.1E		1145	1445	1.8E		1141	1439	2.4E
	1739	2129	0.8F		1703	1859	1.2F		1838	2026	0.8F		1826	2035	1.5F
	2312				2238										
12		0200	1.4E	27		0124	1.9E	12	0018	0253	1.5E	27	0016	0300	2.2E
W	0534	0734	1.0F	Th	0506	0721	1.6F	Sa	0638	0834	1.0F	Su	0639	0851	1.6F
	1129	1443	1.8E		1102	1400	2.3E		1226	1519	1.9E		1233	1529	2.9E
	1823	2057	0.8F		1755	1956	1.4F		1917	2106	0.9F		1915	2127	1.6F
	2359				2336										
13		0236	1.4E	28		0220	2.0E	13	0058	0333	1.6E	28	0107	0352	2.2E
Th	0817	0816	1.0F	F	0600	0816	1.7F	Su	0719	0917	1.1F	M	0731	0944	1.7F
	1211	1510	1.9E		1156	1455	2.5E		1303	1556	1.9E		1323	1618	2.5E
	1905	2051	0.8F		1846	2052	1.5F		1955	2147	1.1F		2003	2216	1.7F
14	0042	0314	1.5E	29	0031	0315	2.1E	14	0136	0412	1.6E				
F	0700	0858	1.1F	Sa	0653	0909	1.8F	M	0800	0959	1.2F				
	1249	1542	1.9E		1248	1546	2.6E		1337	1634	2.0E				
	1945	2131	0.9F		1936	2143	1.6F		2032	2228	1.2F				
15	0124	0355	1.5E	30	0125	0408	2.2E	15	0211	0453	1.7E				
Sa	0741	0940	1.1F	Su	0746	1002	1.8F	Tu	0840	1042	1.2F				
	1326	1619	1.9E		1339	1637	2.6E		1407	1713	2.0E				
	2025	2212	1.0F		2026	2236	1.6F		2108	2309	1.3F				
				31	0217	0501	2.2E								
				M	0839	1052	1.7F								
					1429	1727	2.5E								
					2115	2325	1.6F								

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

11

F-Flood, Dir. 355° True E-Ebb, Dir. 195° 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	0156 0822 1411 2050	0442 1033 1705 2302	2.3E 1.6F 2.4E 1.6F	16 W	0138 0815 1343 2033	0427 1017 1646 2239	1.9E 1.3F 2.0E 1.4F	1 F	0301 0942 1524 2155	0550 1139 1808 2155	2.1E 1.3F 1.9E 1.9E	16 Sa	0214 0918 1435 2123	0528 1123 1746 2344	2.2E 1.4F 1.9E 1.6F
2 W	0244 0913 1500 2138	0531 1120 1751 2346	2.2E 1.5F 2.3E 1.5F	17 Th	0210 0856 1414 2111	0508 1100 1727 2324	2.0E 1.3F 2.0E 1.5F	2 Sa	0346 1032 1612 2244	0000 0634 1226 1854	1.3F 2.0E 1.1F 1.7E	17 Su	0253 1007 1521 2212	0615 1212 1835 2212	2.2E 1.3F 1.9E 1.9E
3 Th	0332 1005 1548 2227	0617 1207 1838 2227	2.1E 1.4F 2.1E 1.4F	18 F	0241 0939 1445 2150	0553 1145 1812 2150	2.0E 1.3F 1.9E 1.9E	3 Su	0431 1125 1702 2336	0041 0720 1311 1940	1.2F 1.8E 0.9F 1.5E	18 M	0339 1100 1619 2308	0032 0705 1303 1930	1.5F 2.1E 2.1E 1.8E
4 F	0420 1058 1638 2317	0031 0705 1254 1923	1.4F 2.0E 1.2F 1.9E	19 Sa	0315 1027 1523 2235	0009 0638 1233 1857	1.5F 2.0E 1.3F 1.9E	4 M	0520 1221 1758	0129 0811 1402 2031	1.0F 1.7E 0.8F 1.4E	19 Tu	0436 1159 1728	0123 0758 1356 2025	1.4F 2.0E 1.2F 1.7E
5 Sa	0510 1155 1731	0116 0755 1342 2014	1.2F 1.8E 1.0F 1.6E	20 Su	0356 1119 1611 2328	0056 0729 1324 1949	1.4F 1.9E 1.2F 1.8E	5 Tu	0031 0613 1319 1857	0218 0903 1451 2125	0.9F 1.6E 0.7F 1.2E	20 W	0011 0544 1300 1842	0218 0857 1456 2127	1.3F 2.0E 1.1F 1.6E
6 Su	0010 0603 1254 1829	0205 0847 1433 2106	1.1F 1.7E 0.8F 1.4E	21 M	0449 1218 1717	0145 0820 1417 2044	1.4F 1.9E 1.1F 1.7E	5 W	0129 0710 1416 1956	0311 0958 1547 2224	0.8F 1.5E 0.6F 1.2E	21 Th	0118 0558 1402 1951	0319 0958 1557 2230	1.2F 1.9E 1.1F 1.6E
7 M	0106 0658 1354 1929	0254 0944 1713 2201	0.9F 1.5E 0.6F 1.3E	22 Tu	0027 0557 1320 1841	0241 0918 1514 2143	1.3F 1.9E 1.1F 1.6E	7 Th	0228 0808 1510 2053	0406 1057 1813 2323	0.7F 1.5E 0.6F 1.2E	22 F	0224 0808 1502 2055	0421 1103 1700 2338	1.1F 1.9E 1.1F 1.7E
8 Tu	0203 0754 1454 2029	0348 1040 1744 2300	0.8F 1.5E 0.5F 1.2E	23 W	0132 0713 1423 2000	0338 1019 1614 2246	1.2F 1.9E 1.0F 1.6E	8 F	0323 0903 1559 2144	0502 1154 1904 2144	0.7F 1.5E 0.7F 1.2E	23 Sa	0326 0912 1558 2153	0524 1205 1805 2153	1.1F 2.0E 1.2F 1.2F
9 W	0300 0850 1549 2126	0441 1151 1822 2126	0.7F 1.5E 0.6F 1.2E	24 Th	0238 0825 1524 2109	0441 1122 1717 2350	1.2F 1.9E 1.1F 1.7E	9 Sa	0415 0955 1644 2231	0021 0557 1243 1832	1.3E 0.8F 1.6E 0.8F	24 Su	0425 1011 1650 2247	0044 0627 1306 1905	1.9E 1.2F 2.1E 1.3F
10 Th	0354 0942 1639 2218	0004 0713 1250 1910	1.2E 0.7F 1.6E 0.7F	25 F	0340 0930 1621 2210	0542 1224 1822 2210	1.2F 2.0E 1.2F 1.2F	10 Su	0502 1041 1726 2314	0111 0650 1331 1918	1.5E 0.9F 1.7E 1.0F	25 M	0519 1105 1739 2336	0141 0725 1400 1956	2.0E 1.2F 2.1E 1.4F
11 F	0444 1031 1724 2305	0101 0633 1334 2012	1.3E 0.8F 1.6E 0.7F	26 Sa	0053 0439 1029 1714 2306	0053 0643 1325 1922	1.9E 1.3F 2.2E 1.3F	11 M	0546 1125 1805 2353	0154 0737 1410 2003	1.7E 1.0F 1.8E 1.2F	26 Tu	0610 1156 1826	0234 0819 1449 2042	2.1E 1.3F 2.1E 1.5F
12 Sa	0531 1116 1805 2348	0147 0721 1411 1954	1.4E 0.9F 1.7E 0.9F	27 Su	0533 1124 1804 2357	0154 0743 1420 2016	2.0E 1.4F 2.3E 1.5F	12 Tu	0628 1205 1843	0238 0824 1453 2046	1.8E 1.1F 1.9E 1.3F	27 W	0023 0659 1244 1912	0319 0905 1532 2123	2.2E 1.3F 2.1E 1.5F
13 Su	0614 1158 1843	0226 0807 1448 2037	1.6E 1.0F 1.8E 1.0F	28 M	0625 1215 1851	0249 0836 1510 2106	2.2E 1.5F 2.3E 1.6F	13 W	0030 0709 1242 1921	0319 0907 1534 2129	2.0E 1.3F 2.0E 1.5F	28 Th	0107 0746 1330 1956	0400 0946 1615 2203	2.2E 1.3F 2.0E 1.4F
14 M	0028 0655 1236 1921	0307 0853 1525 2116	1.7E 1.1F 1.9E 1.2F	29 Tu	0046 0715 1304 1938	0338 0926 1557 2151	2.2E 1.5F 2.3E 1.6F	14 Th	0105 0751 1318 1959	0400 0951 1617 2212	2.1E 1.3F 2.0E 1.5F	29 F	0150 0833 1415 2040	0441 1031 1656 2245	2.1E 1.2F 1.9E 1.4F
15 Tu	0104 0735 1311 1957	0345 0934 1605 2158	1.8E 1.2F 2.0E 1.3F	30 W	0132 0804 1351 2023	0421 1013 1639 2234	2.3E 1.5F 2.2E 1.6F	15 F	0138 0833 1355 2039	0443 1036 1701 2257	2.1E 1.4F 2.0E 1.6F	30 Sa	0231 0920 1500 2125	0524 1114 1737 2326	2.1E 1.1F 1.7E 1.3F
				31 Th	0217 0853 1437 2109	0507 1056 1723 2317	2.2E 1.4F 2.1E 1.5F								

BOSTON HARBOR (Deer Island Light), MASSACHUSETTS, 1983

17

F-Flood, Dir. 254° True E-Ebb, Dir. 111° 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	0622 1211 1845	0354 0933 1615 2159	1.5E 1.5F 1.5E 1.5F		16 W	0617 1157 1831	0313 0853 1506 2101	1.2E 1.3F 1.2E 1.4F		1 F	0102 0740 1328 1958	0514 1051 1739 2309	1.5E 1.3F 1.3E 1.3F	16 Sa	0034 0718 1257 1930	0333 0934 1546 2152	1.3E 1.4F 1.2E 1.5F
2 W	0040 0713 1301 1934	0445 1024 1709 2248	1.5E 1.4F 1.4E 1.4F		17 Th	0020 0658 1237 1911	0324 0918 1531 2134	1.3E 1.3F 1.2E 1.5F		2 Sa	0149 0830 1418 2048	0608 1142 1836 2359	1.4E 1.2F 1.2E 1.2F	17 Su	0117 0806 1343 2020	0412 1019 1628 2237	1.3E 1.3F 1.1E 1.4F
3 Th	0129 0805 1352 2026	0540 1117 1806 2340	1.4E 1.3F 1.3E 1.3F		18 F	0059 0740 1319 1955	0352 0957 1604 2216	1.3E 1.4F 1.2E 1.5F		3 Su	0237 0922 1510 2140	0706 1237 1935 2140	1.3E 1.1F 1.1E	18 M	0204 0858 1433 2114	0457 1106 1717 2325	1.2E 1.2F 1.0E 1.3F
4 F	0219 0859 1446 2118	0638 1212 1906	1.3E 1.2F 1.2E		19 Sa	0141 0828 1403 2042	0430 1040 1645 2300	1.3E 1.3F 1.1E 1.4F		4 M	0328 1018 1605 2235	0055 0804 1335 2034	1.1F 1.2E 1.0F 1.0E	19 Tu	0255 0952 1529 2212	0551 1158 1817	1.1E 1.1F 0.9E
5 Sa	0310 0954 1542 2212	0035 0737 1311 2007	1.2F 1.3E 1.1F 1.1E		20 Su	0226 0919 1452 2135	0515 1127 1733 2349	1.2E 1.2F 1.1E 1.3F		5 Tu	0422 1113 1703 2331	0155 0902 1434 2131	1.0F 1.1E 0.9F 1.0E	20 W	0351 1050 1630 2314	0020 0659 1256 2104	1.1F 1.1E 1.0F 0.9E
6 Su	0405 1051 1641 2310	0134 0837 1411 2106	1.1F 1.2E 1.0F 1.1E		21 M	0316 1013 1547 2231	0607 1219 1830	1.2E 1.2F 1.0E		6 W	0518 1210 1801	0255 0958 1532 2226	0.9F 1.1E 0.9F 1.0E	21 Th	0452 1151 1734	0120 0933 2207	1.0F 1.1E 1.0E
7 M	0502 1151 1743	0234 0935 1511 2204	1.0F 1.2E 0.9F 1.1E		22 Tu	0411 1111 1647 2332	0041 0710 1315 1941	1.2F 1.1E 1.1F 0.9E		7 Th	0029 0615 1304 1858	0352 1051 1626 2318	0.9F 1.2E 1.0F 1.1E	22 F	0018 0557 1251 1839	0325 1035 1614 2306	0.9F 1.2E 1.0F 1.2E
8 Tu	0009 0600 1250 1847	0333 1031 1609 2259	1.0F 1.2E 0.9F 1.1E		23 W	0511 1211 1752	0139 0941 1420 2224	1.1F 1.1E 1.0F 1.0E		8 F	0124 0710 1355 1950	0447 1141 1716	1.0F 1.2E 1.0F	23 Sa	0119 0701 1350 1940	0440 1131 1714	1.0F 1.3E 1.1F
9 W	0107 0658 1344 1951	0430 1125 1703 2351	1.0F 1.3E 1.0F 1.1E		24 Th	0034 0615 1311 1857	0245 1051 1625 2323	1.0F 1.2E 1.0F 1.1E		9 Sa	0216 0801 1441 2036	0007 0536 1228 1803	1.1E 1.0F 1.2E 1.1F	24 Su	0000 0218 0802 1444 2037	0539 1225 1808	1.3E 1.1F 1.4E 1.3F
10 Th	0200 0753 1435 2043	0522 1215 1753	1.0F 1.3E 1.1F		25 F	0136 0719 1410 1959	0448 1148 1730	1.1F 1.3E 1.2F		10 Su	0302 0848 1524 2118	0052 0622 1311 1845	1.2E 1.1F 1.2E 1.2F	25 M	0313 0900 1536 2130	0051 1314 1858	1.4E 1.3F 1.5E 1.4F
11 F	0250 0842 1520 2122	0040 0611 1301 1838	1.2E 1.1F 1.3E 1.2F		26 Sa	0234 0820 1505 2057	0017 0553 1241 1826	1.3E 1.2F 1.4E 1.3F		11 M	0347 0931 1604 2157	0134 0704 1351 1925	1.2E 1.2F 1.2E 1.3F	26 Tu	0405 0953 1624 2220	0141 0723 1403 1945	1.5E 1.3F 1.5E 1.5F
12 Sa	0337 0925 1600 2157	0125 0656 1344 1921	1.2E 1.1F 1.3E 1.2F		27 Su	0330 0918 1557 2151	0109 0648 1332 1917	1.4E 1.3F 1.5E 1.4F		12 Tu	0428 1012 1644 2235	0211 0742 1422 1957	1.3E 1.3F 1.2E 1.4F	27 W	0453 1043 1711 2306	0228 0811 1450 2031	1.6E 1.4F 1.5E 1.5F
13 Su	0418 1004 1639 2232	0207 0737 1424 1959	1.2E 1.2F 1.3E 1.3F		28 M	0422 1011 1646 2241	0158 0740 1420 2005	1.5E 1.4F 1.6E 1.5F		13 W	0509 1052 1723 2313	0238 0813 1427 2016	1.3E 1.3F 1.2E 1.4F	28 Th	0541 1131 1758 2351	0315 0857 1537 2115	1.6E 1.4F 1.5E 1.4F
14 M	0458 1042 1717 2306	0245 0814 1458 2033	1.2E 1.2F 1.3E 1.3F		29 Tu	0512 1102 1734 2329	0247 0828 1508 2052	1.6E 1.5F 1.6E 1.5F		14 Th	0550 1132 1803 2353	0240 0826 1440 2034	1.3E 1.4F 1.2E 1.5F	29 F	0629 1218 1843	0402 0943 1625 2159	1.5E 1.4F 1.4E 1.4F
15 Tu	0538 1119 1753 2342	0316 0845 1509 2053	1.2E 1.3F 1.2E 1.4F		30 W	0602 1151 1821	0334 0916 1556 2137	1.6E 1.5F 1.5E 1.5F		15 F	0632 1214 1846	0301 0856 1509 2110	1.3E 1.4F 1.2E 1.5F	30 Sa	0036 0716 1304 1930	0450 1028 1716 2242	1.5E 1.3F 1.2E 1.3F
					31 Th	0016 0650 1240 1909	0423 1003 1645 2222	1.6E 1.4F 1.4E 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	Vel.	Day	Slack Water Time	Maximum Current Time	Vel.	Day	Slack Water Time	Maximum Current Time	Vel.	Day	Slack Water Time	Maximum Current Time	Vel.			
	h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots			
1	0120	0541	1.4E	16	0057	0402	1.3E	1	0221	0655	1.1E	16	0226	0647	1.2E			
Su	0803	1116	1.2F	M	0747	1002	1.3F	W	0910	1221	1.0F	Th	0917	1221	1.1F			
	1350	1808	1.1E		1327	1621	1.1E		1455	1925	1.0E		1503	1927	1.1E			
	2019	2326	1.2F		2002	2219	1.3F		2129				2142					
2	0206	0634	1.3E	17	0146	0452	1.2E	2		0018	1.0F	17		0048	1.1F			
M	0852	1205	1.1F	Tu	0839	1051	1.2F	Th	0309	0745	1.1E	F	0324	0755	1.2E			
	1439	1904	1.0E		1420	1717	1.0E		0959	1308	1.0F		1013	1332	1.1F			
	2109				2059	2311	1.2F		1543	2015	1.0E		1601	2029	1.1E			
									2220				2242					
3		0016	1.1F	18	0239	0553	1.1E	3		0109	1.0F	18		0201	1.0F			
Tu	0253	0730	1.2E	W	0934	1147	1.1F	F	0358	0836	1.0E	Sa	0424	0857	1.2E			
	0943	1258	1.0F		1516	1939	1.0E		1048	1357	1.0F		1111	1435	1.1F			
	1529	2000	1.0E		2158				1632	2105	1.0E		1701	2129	1.2E			
	2201								2311				2343					
4		0113	1.0F	19		0007	1.1F	4		0210	1.0F	19		0305	1.0F			
W	0344	0826	1.1E	Th	0337	0810	1.1E	Sa	0450	0927	1.0E	Su	0526	0955	1.2E			
	1037	1354	1.0F		1032	1304	1.0F		1137	1447	1.0F		1209	1535	1.1F			
	1622	2055	1.0E		1616	2048	1.0E		1723	2155	1.0E		1800	2226	1.3E			
	2256				2259													
5		0212	0.9F	20		0157	0.9F	5		0002	0306	1.0F	20		0043	0404	1.0F	
Th	0437	0920	1.1E	F	0438	0917	1.1E	Su	0542	1014	1.0E	M	0628	1051	1.2E			
	1129	1449	1.0F		1132	1453	1.0F		1226	1535	1.1F		1306	1631	1.1F			
	1716	2148	1.0E		1718	2149	1.1E		1813	2242	1.1E		1859	2320	1.4E			
	2350																	
6		0309	0.9F	21		0001	0322	1.0F	6		0054	0358	1.1F	21		0141	0500	1.1F
F	0531	1012	1.1E	Sa	0541	1016	1.2E	M	0634	1058	1.0E	Tu	0728	1145	1.3E			
	1220	1542	1.0F		1231	1557	1.1F		1313	1619	1.2F		1400	1724	1.2F			
	1809	2240	1.0E		1820	2246	1.2E		1903	2325	1.1E		1954					
7		0404	1.0F	22		0102	0425	1.0F	7		0144	0446	1.1F	22		0012	1.4E	
Sa	0625	1102	1.1E	Su	0644	1112	1.3E	Tu	0725	1139	1.1E	W	0235	0553	1.1F			
	1310	1633	1.1F		1329	1654	1.1F		1401	1700	1.3F		0826	1237	1.3E			
	1901	2328	1.1E		1919	2341	1.3E		1951				1451	1814	1.2F			
													2047					
8		0454	1.0F	23		0200	0521	1.1F	8		0005	1.2E	23		0102	1.5E		
Su	0718	1149	1.1E	M	0745	1205	1.3E	W	0213	0530	1.2F	Th	0327	0643	1.2F			
	1358	1719	1.2F		1422	1747	1.2F		0816	1210	1.1E		0919	1326	1.3E			
	1949				2016				1449	1738	1.3F		1540	1903	1.2F			
									2039				2135					
9		0013	1.2E	24		0032	1.4E	9		0036	1.3E	24		0151	1.5E			
M	0223	0541	1.1F	Tu	0255	0614	1.2F	Th	0321	0612	1.3F	F	0414	0732	1.2F			
	0807	1231	1.2E		0842	1256	1.4E		0905	1235	1.2E		1008	1414	1.3E			
	1442	1802	1.2F		1513	1837	1.3F		1537	1816	1.4F		1628	1949	1.2F			
	2034				2109				2126				2220					
10		0055	1.2E	25		0122	1.5E	10		0106	1.3E	25		0238	1.5E			
Tu	0310	0624	1.2F	W	0346	0704	1.3F	F	0409	0651	1.3F	Sa	0500	0818	1.2F			
	0854	1309	1.2E		0935	1345	1.4E		0953	1314	1.2E		1052	1501	1.3E			
	1527	1841	1.3F		1602	1924	1.3F		1624	1858	1.4F		1712	2034	1.2F			
	2118				2157				2213				2303					
11		0130	1.3E	26		0210	1.5E	11		0142	1.4E	26		0324	1.4E			
W	0355	0702	1.3F	Th	0434	0752	1.3F	Sa	0458	0733	1.4F	Su	0544	0902	1.2F			
	0939	1337	1.2E		1025	1433	1.4E		1042	1357	1.2E		1134	1547	1.2E			
	1610	1912	1.4F		1649	2010	1.4F		1712	1942	1.5F		1758	2117	1.2F			
	2201				2243				2301				2345					
12		0153	1.3E	27		0257	1.5E	12		0224	1.4E	27		0408	1.4E			
Th	0439	0735	1.3F	F	0521	0838	1.3F	Su	0547	0816	1.4F	M	0628	0946	1.2F			
	1023	1348	1.2E		1111	1520	1.4E		1131	1444	1.2E		1216	1633	1.2E			
	1653	1935	1.4F		1734	2054	1.3F		1802	2029	1.4F		1841	2158	1.1F			
	2243				2327				2350									
13		0209	1.3E	28		0343	1.5E	13		0312	1.4E	28		0026	0452	1.3E		
F	0523	0800	1.4F	Sa	0607	0923	1.3F	M	0637	0904	1.3F	Tu	0710	1027	1.1F			
	1107	1416	1.2E		1156	1607	1.3E		1221	1535	1.2E		1257	1717	1.1E			
	1738	2008	1.5F		1820	2137	1.3F		1854	2118	1.4F		1927	2236	1.1F			
	2326																	
14		0240	1.4E	29		0010	0429	1.4E	14		0040	0404	1.3E	29		0108	0535	1.2E
Sa	0609	0834	1.4F	Su	0651	1007	1.2F	Tu	0728	0955	1.3F	W	0753	1105	1.1F			
	1152	1452	1.2E		1240	1654	1.2E		1313	1637	1.1E		1338	1800	1.0E			
	1822	2047	1.5F		1906	2219	1.2F		1948	2210	1.3F		2011	2301	1.1F			
15		0011	1.4E	30		0053	0517	1.3E	15		0132	0513	1.2E	30		0150	0616	1.1E
Su	0657	0916	1.4F	M	0738	1051	1.1F	W	0821	1054	1.2F	Th	0838	1135	1.1F			
	1238	1534	1.2E		1324	1743	1.1E		1407	1817	1.1E		1421	1843	1.0E			
	1911	2132	1.4F		1951	2301	1.1E		2044	2309	1.2F		2058	2320	1.1F			
				31		0136	0605	1.2E										
				Tu	0823	1136	1.1F											
					1409	1833	1.0E											
					2040	2340	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.

F-Flood, Dir. 254° True E-Ebb, Dir. 111° 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	0448 1129 1712	0121 0736 1343 2016	1.2F 1.0E 1.3F 1.2E	16	0029 0630 1247 1840	0347 1036 1608 2302	1.0F 1.2E 1.0F 1.3E	1	0524 1206 1747	0154 0841 1418 2206	1.1F 1.0E 1.1F 1.2E	16	0050 0651 1310 1900	0413 1059 1631 2322	1.1F 1.2E 1.0F 1.3E
2 F	0008 0546 1227 1810	0218 0845 1441 2131	1.2F 1.0E 1.3F 1.2E	17	0122 0740 1340 1936	0441 1128 1701 2353	1.1F 1.2E 1.1F 1.4E	2	0041 0627 1305 1848	0313 1046 1535 2311	1.1F 1.1E 1.1F 1.3E	17	0139 0744 1400 1951	0459 1148 1719	1.1F 1.2E 1.1F
3 Sa	0103 0646 1323 1908	0321 1016 1543 2306	1.2F 1.1E 1.3F 1.3E	18	0213 0833 1430 2026	0531 1218 1750	1.1F 1.2E 1.1F	3	0139 0727 1402 1948	0449 1142 1710	1.2F 1.2E 1.2F	18	0009 0224 0827 1446 2036	0009 0545 1234 1804	1.3E 1.2F 1.3E 1.2F
4 Su	0159 0745 1420 2006	0438 1153 1654	1.2F 1.2E 1.3F	19	0300 0909 1518 2109	0040 0617 1305 1836	1.4E 1.2F 1.3E 1.1F	4	0232 0824 1458 2045	0005 0548 1235 1810	1.4E 1.3F 1.4E 1.3F	19	0307 0904 1529 2116	0053 0627 1316 1846	1.3E 1.3F 1.3E 1.2F
5 M	0253 0843 1516 2102	0015 0556 1248 1812	1.4E 1.3F 1.3E 1.3F	20	0341 0942 1600 2148	0125 0701 1349 1918	1.3E 1.2F 1.3E 1.2F	5	0325 0918 1551 2139	0056 0640 1326 1904	1.5E 1.4F 1.5E 1.4F	20	0346 0940 1609 2154	0133 0706 1355 1924	1.3E 1.3F 1.3E 1.2F
6 Tu	0347 0938 1610 2158	0110 0655 1342 1914	1.5E 1.4F 1.4E 1.4F	21	0421 1015 1641 2225	0207 0741 1429 1958	1.3E 1.2F 1.2E 1.2F	6	0415 1009 1642 2231	0146 0730 1414 1954	1.5E 1.5F 1.5E 1.4F	21	0424 1016 1649 2232	0209 0739 1426 1955	1.2E 1.3F 1.2E 1.3F
7 W	0438 1031 1702 2251	0203 0748 1433 2009	1.5E 1.5F 1.5E 1.4F	22	0459 1049 1720 2302	0245 0817 1506 2032	1.2E 1.3F 1.2E 1.2F	7	0504 1059 1733 2322	0236 0818 1504 2044	1.5E 1.5F 1.6E 1.4F	22	0502 1052 1730 2311	0224 0757 1429 2007	1.1E 1.4F 1.2E 1.3F
8 Th	0529 1122 1756 2343	0254 0839 1525 2104	1.5E 1.5F 1.5E 1.4F	23	0537 1124 1800 2339	0316 0845 1531 2048	1.2E 1.3F 1.2E 1.2F	8	0553 1148 1824	0326 0906 1555 2134	1.5E 1.5F 1.5E 1.4F	23	0541 1130 1811 2350	0220 0811 1439 2032	1.1E 1.4F 1.2E 1.3F
9 F	0619 1213 1849	0347 0930 1619 2157	1.5E 1.5F 1.5E 1.4F	24	0614 1201 1840	0302 0845 1514 2101	1.1E 1.3F 1.2E 1.2F	9	0012 0642 1236 1917	0419 0954 1649 2226	1.4E 1.4F 1.5E 1.3F	24	0623 1210 1856	0245 0845 1508 2110	1.1E 1.4F 1.3E 1.3F
10 Sa	0036 0710 1304 1941	0443 1023 1715 2253	1.4E 1.4F 1.4E 1.3F	25	0018 0654 1240 1923	0315 0914 1537 2137	1.1E 1.3F 1.2E 1.2F	10	0104 0733 1326 2009	0516 1046 1746 2322	1.3E 1.3F 1.4E 1.2F	25	0033 0708 1252 1942	0319 0927 1545 2153	1.1E 1.4F 1.2E 1.3F
11 Su	0129 0801 1355 2037	0541 1118 1813 2351	1.3E 1.3F 1.4E 1.2F	26	0100 0737 1321 2009	0346 0955 1611 2220	1.1E 1.4F 1.2E 1.2F	11	0156 0827 1417 2103	0615 1142 1845	1.2E 1.2F 1.3E	26	0119 0757 1339 2033	0401 1012 1630 2241	1.1E 1.3F 1.2E 1.2F
12 M	0224 0857 1448 2132	0642 1215 1913	1.2E 1.2F 1.3E	27	0144 0822 1406 2059	0426 1039 1655 2307	1.1E 1.3F 1.2E 1.2F	12	0252 0921 1511 2200	0020 0715 1242 1944	1.1F 1.1E 1.1F 1.3E	27	0208 0850 1429 2128	0450 1101 1723 2333	1.0E 1.2F 1.1E 1.1F
13 Tu	0321 0951 1544 2231	0051 0742 1315 2013	1.1F 1.2E 1.1F 1.3E	28	0232 0913 1455 2150	0513 1128 1745 2358	1.0E 1.3F 1.2E 1.2F	13	0350 1019 1607 2259	0121 0814 1343 2042	1.0F 1.1E 1.0F 1.2E	28	0303 0948 1525 2225	0548 1154 1826	1.0E 1.1F 1.1E
14 W	0421 1050 1642 2330	0151 0842 1414 2111	1.0F 1.1E 1.1F 1.3E	29	0326 1008 1549 2248	0607 1220 1844	1.0E 1.2F 1.1E	14	0450 1119 1706 2357	0220 0911 1442 2138	1.0F 1.1E 1.0F 1.2E	29	0403 1048 1625 2323	0030 0701 1254 2056	1.0F 0.9E 1.0F 1.1E
15 Th	0524 1149 1741	0250 0940 1512 2208	1.0F 1.1E 1.0F 1.3E	30	0423 1107 1646 2344	0053 0712 1316 1955	1.1F 1.0E 1.2F 1.1E	15	0551 1216 1804	0317 1007 1538 2232	1.0F 1.1E 1.0F 1.3E	30	0506 1149 1729	0935 1406 2202	1.0E 1.0F 1.2E
												31	0022 0608 1249 1831	0339 1035 1605 2258	1.1F 1.2E 1.1F 1.3E

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.

22 CAPE COD CANAL (RR. Bridge), MASSACHUSETTS, 1983
 F-Flood, Dir. 070° True E-Ebb, Dir. 250° 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.	h.m.		h.m.	h.m.	h.m.	h.m.
1		0118	0718	4.8E	16		0137	0733	4.1E	1		0240	0844	4.8E
Sa	0419	0718	0718	4.6F	Su	0438	0733	0733	3.9F	Tu	0545	0844	0844	4.6F
	1029	1337	1337	5.1E		1049	1349	1349	4.5E		1158	1459	1459	5.1E
	1646	1952	1952	4.9F		1700	2003	2003	4.2F		1811	2117	2117	4.8F
	2322					2335								
2		0209	0807	4.7E	17		0216	0810	4.1E	2		0043	0329	4.7E
Su	0511	0807	0807	4.5F	M	0515	0810	0810	3.9F	W	0635	0935	0935	4.4F
	1120	1427	1427	5.1E		1126	1431	1431	4.4E		1251	1549	1549	4.8E
	1737	2045	2045	4.9F		1737	2039	2039	4.2F		1901	2207	2207	4.6F
3		0300	0859	4.7E	18		0012	0258	4.1E	3		0133	0420	4.5E
M	0604	0859	0859	4.4F	Tu	0553	0847	0847	3.9F	Th	0727	1029	1029	4.2F
	1214	1519	1519	5.0E		1204	1512	1512	4.4E		1347	1643	1643	4.6E
	1830	2138	2138	4.7F		1815	2116	2116	4.1F		1954	2259	2259	4.3F
4		0354	0956	4.6E	19		0050	0341	4.0E	4		0225	0511	4.3E
Tu	0659	0956	0956	4.3F	W	0633	0928	0928	3.8F	F	0823	1122	1122	4.0F
	1311	1613	1613	4.8E		1244	1555	1555	4.3E		1447	1737	1737	4.3E
	1926	2233	2233	4.6F		1856	2158	2158	4.0F		2049	2353	2353	4.0F
5		0449	1055	4.4E	20		0131	0426	4.0E	5		0320	0607	4.1E
W	0757	1055	1055	4.1F	Th	0717	1013	1013	3.8F	Sa	0922	1226	1226	3.8F
	1411	1709	1709	4.6E		1329	1642	1642	4.1E		1550	1835	1835	4.0E
	2023	2333	2333	4.3F		1940	2239	2239	3.9F		2148			
6		0547	1159	4.3E	21		0214	0512	3.9E	6		0054	0377	3.7F
Th	0857	1159	1159	3.9F	F	0805	1102	1102	3.7F	Su	0417	0706	0706	4.0E
	1515	1809	1809	4.4E		1421	1733	1733	4.0E		1023	1335	1335	3.7F
	2123					2029	2330	2330	3.9F		1655	1936	1936	3.8E
7		0635	1200	4.1F	22		0303	0603	3.9E	7		0204	0504	3.6F
F	0400	0644	0644	4.2E	Sa	0858	1153	1153	3.7F	M	0515	0804	0804	3.9E
	1000	1305	1305	3.8F		1521	1828	1828	4.0E		1126	1449	1449	3.7E
	1621	1909	1909	4.2E		2124					1759	2035	2035	3.7E
	2224										2351			
8		0743	1418	4.0F	23		0025	0325	3.8F	8		0308	0608	3.5F
Sa	0457	0743	0743	4.1E	Su	0357	0658	0658	4.0E	Tu	0611	0901	0901	4.0E
	1102	1418	1418	3.8F		0957	1255	1255	3.7F		1224	1552	1552	3.7F
	1725	2009	2009	4.0E		1626	1926	1926	3.9E		1857	2137	2137	3.7E
	2325					2224								
9		0842	1521	3.9F	24		0124	0426	3.8F	9		0048	0346	3.6F
Su	0551	0842	0842	4.1E	M	0454	0756	0756	4.1E	W	0703	0954	0954	4.1E
	1201	1521	1521	3.9F		1059	1400	1400	3.9F		1317	1641	1641	3.9F
	1826	2108	2108	4.0E		1734	2027	2027	4.0E		1949	2227	2227	3.8E
						2326								
10		0934	1619	3.8F	25		0226	0526	3.9F	10		0138	0431	3.7F
M	0643	0934	0934	4.2E	Tu	0551	0855	0855	4.3E	Th	0750	1043	1043	4.2E
	1254	1619	1619	4.0F		1201	1505	1505	4.1F		1404	1728	1728	4.0F
	1921	2203	2203	4.0E		1838	2127	2127	4.1E		2035	2313	2313	3.9E
11		1023	1706	4.3E	26		0028	0327	4.0F	11		0223	0523	3.8F
Tu	0730	1023	1023	4.3E	W	0648	0950	0950	4.5E	F	0834	1129	1129	4.3E
	1343	1706	1706	4.1F		1301	1609	1609	4.3F		1446	1805	1805	4.1F
	2011	2248	2248	4.0E		1938	2222	2222	4.3E		2116	2354	2354	4.1E
12		1106	1747	3.9F	27		0126	0427	4.2F	12		0303	0607	3.9F
W	0815	1106	1106	4.3E	Th	0742	1047	1047	4.8E	Sa	0914	1208	1208	4.4E
	1427	1747	1747	4.1F		1357	1706	1706	4.6F		1524	1837	1837	4.2F
	2057	2336	2336	4.0E		2033	2317	2317	4.5E		2155			
13		1149	1824	3.9F	28		0222	0522	4.4F	13		0033	0333	4.2E
Th	0856	1149	1149	4.4E	F	0835	1138	1138	5.0E	Su	0340	0640	0640	4.0F
	1508	1824	1824	4.2F		1450	1800	1800	4.8F		0952	1248	1248	4.5E
	2139					2125					1601	1906	1906	4.3F
											2231			
14		1231	1857	3.9F	29		0011	0311	4.7E	14		0112	0412	4.2E
F	0324	0627	0627	3.9F	Sa	0314	0613	0613	4.5F	M	0415	0714	0714	4.1F
	0935	1231	1231	4.5E		0926	1229	1229	5.1E		1028	1327	1327	4.6E
	1546	1857	1857	4.2F		1541	1850	1850	4.9F		1636	1939	1939	4.3F
	2219					2216					2306			
15		1310	1928	4.1E	30		0101	0401	4.8E	15		0150	0450	4.3E
Sa	0402	0700	0700	3.9F	Su	0405	0704	0704	4.6F	Tu	0450	0747	0747	4.1F
	1013	1310	1310	4.5E		1016	1320	1320	5.2E		1104	1406	1406	4.6E
	1623	1928	1928	4.2F		1632	1939	1939	5.0F		1711	2011	2011	4.3F
	2257					2305					2340			
					31		0151	0451	4.8E					
					M	0455	0755	0755	4.7F					
						1107	1409	1409	5.2E					
						1721	2029	2029	4.9F					
						2354								

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	0554 1234 1820	0248 0903 1516 2115	4.5E 4.2F 4.1E 3.8F		16 M	0539 1217 1807	0237 0843 1510 2100	4.8E 4.6F 4.4E 4.2F		1 W	0048 0700 1346 1925	0354 1002 1627 2216	4.2E 3.9F 3.7E 3.4F		16 Th	0058 0715 1359 1948	0407 1023 1645 2242	4.8E 4.6F 4.4E 4.1F
2 M	0033 0642 1323 1906	0335 0946 1605 2157	4.3E 4.0F 3.9E 3.6F		17 Tu	0015 0632 1314 1902	0328 0938 1604 2154	4.7E 4.5F 4.3E 4.0F		2 Th	0136 0748 1437 2017	0443 1052 1717 2309	4.0E 3.8F 3.7E 3.3F		17 F	0200 0815 1458 2051	0505 1124 1743 2348	4.6E 4.4F 4.3E 4.0F
3 Tu	0115 0730 1417 1957	0423 1033 1656 2249	4.1E 3.8F 3.7E 3.3F		18 W	0110 0729 1415 2003	0423 1036 1702 2255	4.6E 4.4F 4.2E 3.9F		3 F	0231 0840 1529 2113	0534 1147 1810 2306	3.9E 3.7F 3.6E		18 Sa	0305 0917 1558 2155	0604 1228 1843	4.5E 4.3F 4.3E
4 W	0211 0823 1514 2055	0514 1130 1750 2348	3.9E 3.6F 3.5E 3.2F		19 Th	0213 0831 1520 2110	0522 1141 1804 2110	4.5E 4.3F 4.1E		4 Sa	0329 0935 1622 2210	0006 0629 1240 1905	3.3F 3.8E 3.7F 3.7E		19 Su	0412 1020 1656 2258	0056 0707 1334 1943	3.9F 4.4E 4.2F 4.3E
5 Th	0313 0921 1613 2157	0610 1230 1848	3.8E 3.5F 3.5E		20 F	0322 0937 1624 2218	0004 0625 1250 1907 2218	3.8F 4.4E 4.2F 4.1E		5 Su	0428 1030 1713 2305	0104 0725 1335 1957	3.3F 3.9E 3.7F 3.8E		20 M	0517 1121 1752 2357	0207 0806 1439 2039	4.0F 4.3E 4.2F 4.3E
6 F	0415 1021 1709 2258	0051 0708 1334 1947	3.1F 3.8E 3.6F 3.6E		21 Sa	0431 1043 1724 2322	0116 0728 1400 2009	3.8F 4.4E 4.3F 4.2E		6 M	0525 1123 1800 2356	0201 0818 1429 2049	3.5F 4.0E 3.8F 4.0E		21 Tu	0619 1220 1844	0311 0905 1534 2133	4.1F 4.3E 4.2F 4.4E
7 Sa	0515 1119 1800 2352	0157 0806 1433 2042	3.3F 3.8E 3.7F 3.8E		22 Su	0537 1146 1820	0228 0831 2108	4.0F 4.4E 4.4E		7 Tu	0618 1214 1845	0255 0911 2137	3.7F 4.1E 3.9F 4.2E		22 W	0052 0716 1313 1932	0406 1001 1627 2224	4.2F 4.3E 4.1F 4.5E
8 Su	0609 1211 1847	0255 0858 1524 2131	3.5F 4.0E 3.8F 4.0E		23 M	0021 0638 1244 1911	0331 0930 1559 2159	4.1F 4.5E 4.4F 4.5E		8 W	0044 0709 1303 1928	0346 0958 1606 2225	3.9F 4.2E 4.1F 4.4E		23 Th	0142 0809 1402 2017	0501 1050 1713 2310	4.3F 4.3E 4.1F 4.5E
9 M	0041 0659 1259 1930	0343 0950 1609 2216	3.7F 4.2E 4.0F 4.2E		24 Tu	0115 0734 1336 1958	0426 1022 1648 2248	4.3F 4.5E 4.4F 4.6E		9 Th	0130 0757 1360 2010	0432 1048 1648 2309	4.2F 4.4E 4.2F 4.6E		24 F	0229 0857 1448 2100	0544 1139 1754 2354	4.3F 4.2E 4.0F 4.5E
10 Tu	0125 0744 1341 2009	0425 1035 1648 2300	4.0F 4.3E 4.2F 4.4E		25 W	0203 0826 1424 2042	0516 1112 1733 2334	4.4F 4.6E 4.4F 4.7E		10 F	0216 0845 1437 2053	0520 1135 1736 2355	4.4F 4.5E 4.3F 4.8E		25 Sa	0312 0943 1530 2141	0625 1221 1833	4.3F 4.2E 4.0F
11 W	0206 0828 1425 2047	0507 1120 1727 2341	4.2F 4.5E 4.3F 4.6E		26 Th	0249 0914 1509 2124	0601 1159 1814	4.5F 4.5E 4.3F		11 Sa	0301 0933 1523 2136	0607 1223 1820	4.6F 4.6E 4.4F		26 Su	0037 0353 1026 1610 2220	045E 0705 1305 1909	4.5E 4.3F 4.1E 3.9F
12 Th	0246 0910 1506 2124	0546 1203 1804	4.4F 4.6E 4.4F		27 F	0331 1000 1551 2204	0017 0642 1243 1851	4.7E 4.5F 4.4E 4.2F		12 Su	0348 1022 1611 2221	0041 0653 1311 1908	4.9E 4.7F 4.6E 4.4F		27 M	0432 1108 1649 2259	0118 0742 1346 1944	4.5E 4.2F 4.1E 3.8F
13 F	0326 0953 1547 2202	0022 0627 1247 1845	4.7E 4.5F 4.6E 4.4F		28 Sa	0412 1044 1632 2243	0100 0719 1326 1927	4.7E 4.4F 4.3E 4.1F		13 M	0436 1113 1701 2309	0130 0741 1402 1957	4.9E 4.7F 4.6E 4.4F		28 Tu	0511 1149 1728 2339	0159 0817 1428 2021	4.4E 4.2F 4.0E 3.8F
14 Sa	0408 1038 1631 2242	0105 0711 1333 1926	4.8E 4.6F 4.6E 4.4F		29 Su	0453 1128 1712 2322	0141 0800 1409 2008	4.6E 4.3F 4.2E 3.9F		14 Tu	0526 1206 1753	0218 0832 1453 2048	4.9E 4.7F 4.5E 4.3F		29 W	0551 1230 1809	0240 0853 1512 2100	4.4E 4.1F 3.9E 3.7F
15 Su	0452 1125 1717 2326	0151 0756 1419 2013	4.8E 4.6F 4.5E 4.3F		30 M	0533 1212 1753	0222 0837 1453 2046	4.5E 4.2F 4.0E 3.7F		15 W	0001 0619 1301 1849	0312 0926 1548 2144	4.9E 4.7F 4.5E 4.2F		30 Th	0020 0631 1312 1852	0325 0936 1555 2145	4.3E 4.0F 3.9E 3.6F
					31 Tu	0003 0616 1258 1837	0307 0919 1538 2129	4.3E 4.0F 3.9E 3.6F										

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

JULY

AUGUST

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 F	0103 0715 1357 1939	0410 1017 1642 2229	4.1E 3.9F 3.8E 3.6F	16 Sa	0142 0754 1430 2026	0442 1102 1717 2325	4.7E 4.5F 4.4E 4.1F	1 M	0203 0809 1441 2036	0514 1111 1740 2332	4.0E 3.8F 3.9E 3.7F	16 Tu	0324 0923 1550 2157	0610 1229 1840 2410	4.1E 3.9F 3.7F 3.5E	
2 Sa	0151 0801 1443 2028	0459 1104 1731 2318	4.0E 3.8F 3.8E 3.5F	17 Su	0244 0852 1527 2127	0540 1159 1813 2413	4.5E 4.3F 4.3E 4.0E	2 Tu	0258 0901 1532 2132	0607 1200 1835 2432	3.9E 3.7F 3.9E 3.6F	17 W	0430 1025 1649 2300	0711 1338 1939 2538	3.8F 3.9E 4.0E 3.7E	
3 Su	0244 0850 1532 2121	0550 1153 1822 2412	4.0E 3.8F 3.8E 3.5E	18 M	0349 0953 1625 2229	0640 1303 1912 2512	4.3E 4.1F 4.2E 3.9E	3 W	0401 0957 1626 2231	0700 1257 1930 2530	3.9E 3.7F 4.0E 3.7E	18 Th	0535 1129 1747 2332	0812 1445 2038 2638	3.8E 3.6E 4.0E 3.7E	
4 M	0340 0943 1622 2216	0015 0642 1245 1913	3.5F 3.9E 3.7F 3.9E	19 Tu	0454 1054 1721 2330	0740 1408 2010 2610	4.1E 3.9F 4.2E 3.9E	4 Th	0506 1057 1723 2332	0800 1358 2027 2627	3.9E 3.8F 4.1E 3.8E	19 F	0635 1228 1842 2432	0913 1546 2134 2734	3.8E 3.6E 4.1E 3.8E	
5 Tu	0440 1037 1712 2311	0110 0737 1340 2007	3.6F 3.9E 3.8F 4.0E	20 W	0558 1155 1816 2416	0839 1510 2108 2708	4.0F 3.9E 4.2E 3.9E	5 F	0610 1158 1820 2420	0858 1458 2123 2723	4.0E 3.9F 4.4E 4.1E	20 Sa	0729 1321 1932 2532	1007 1636 2225 2825	3.8E 3.7F 4.2E 3.9E	
6 W	0539 1133 1802	0209 0833 1433 2100	3.7F 4.0E 3.8F 4.2E	21 Th	0628 0657 1251 1907	0349 0937 1605 2200	4.0F 4.0E 3.8F 4.3E	6 Sa	0032 0710 1258 1914	0337 0956 1557 2219	4.2F 4.2E 4.0F 4.6E	21 Su	0146 0817 1407 2017	0513 1056 1717 2311	4.1F 3.9E 3.8F 4.3E	
7 Th	0006 0636 1227 1851	0307 0927 1528 2151	3.9F 4.1E 4.0F 4.4E	22 F	0121 0751 1342 1954	0443 1031 1654 2249	4.1F 4.0E 3.8F 4.3E	7 Su	0129 0806 1354 2007	0438 1051 1654 2313	4.4F 4.4E 4.3F 4.9E	22 M	0230 0859 1448 2058	0550 1139 1754 2353	4.1F 4.1E 3.9F 4.4E	
8 F	0058 0731 1320 1939	0403 1019 1619 2241	4.2F 4.3E 4.1F 4.6E	23 Sa	0209 0839 1428 2039	0532 1117 1739 2333	4.1F 4.0E 3.9F 4.4E	8 M	0222 0858 1447 2059	0532 1144 1745 2359	4.7F 4.6E 4.4F 4.9E	23 Tu	0309 0939 1525 2137	0621 1217 1827 2427	4.2F 4.2E 4.0F 4.5E	
9 Sa	0150 0824 1412 2027	0455 1110 1712 2332	4.4F 4.4E 4.3F 4.8E	24 Su	0252 0924 1510 2120	0609 1200 1814 2414	4.2F 4.1E 3.9F 4.6E	9 Tu	0314 0949 1538 2150	0621 1234 1837 2437	4.9F 4.8E 4.6F 5.0E	24 W	0346 1015 1601 2214	0654 1256 1900 2500	4.2F 4.2E 4.0F 4.5E	
10 Su	0240 0916 1503 2115	0546 1202 1802 2415	4.6F 4.6E 4.4F 5.0E	25 M	0333 1005 1549 2159	0648 1241 1847 2447	4.2F 4.1E 3.9F 4.6E	10 W	0405 1038 1628 2240	0713 1325 1928 2528	5.0F 4.8E 4.7F 5.2E	25 Th	0421 1050 1635 2250	0726 1334 1932 2532	4.3F 4.3E 4.1F 4.6E	
11 M	0330 1006 1554 2204	0637 1253 1851 2454	4.8F 4.6E 4.5F 5.1E	26 Tu	0411 1044 1626 2237	0719 1322 1923 2519	4.2F 4.1E 3.9F 4.6E	11 Th	0455 1126 1718 2332	0802 1414 2017 2617	5.0F 4.9E 4.7F 5.2E	26 F	0456 1124 1710 2326	0756 1412 2007 2607	4.3F 4.3E 4.1F 4.6E	
12 Tu	0421 1057 1645 2255	0727 1344 1942 2555	4.9F 4.7E 4.5F 5.1E	27 W	0448 1122 1703 2315	0752 1402 1959 2559	4.2F 4.1E 3.9F 4.6E	12 F	0545 1215 1808	0850 1503 2108	4.9F 4.8E 4.6F	27 Sa	0531 1158 1746	0831 1452 2044	4.2F 4.2E 4.1F	
13 W	0512 1149 1737 2348	0818 1435 2035 2648	4.9F 4.7E 4.5F 5.1E	28 Th	0525 1159 1740 2353	0827 1443 2034 2633	4.2F 4.1E 3.9F 4.6E	13 Sa	0635 1305 1901	0941 1554 2201	4.7F 4.7E 4.4F	28 Su	0609 1233 1825	0906 1533 2123	4.1F 4.2E 4.0F	
14 Th	0604 1241 1831	0254 0911 1528 2129	5.0E 4.8F 4.6E 4.4F	29 F	0602 1236 1819	0257 0903 1522 2115	4.4E 4.1F 4.0E 3.8F	14 Su	0121 0728 1358 1956	0418 1033 1646 2258	4.7E 4.4F 4.5E 4.2F	29 M	0044 0649 1311 1909	0354 0947 1618 2208	4.2E 4.0F 4.1E 3.9F	
15 F	0043 0658 1335 1927	0348 1004 1623 2226	4.9E 4.7F 4.5E 4.3F	30 Sa	0032 0641 1315 1901	0340 0942 1607 2154	4.3E 4.0F 4.0E 3.8F	15 M	0220 0824 1452 2054	0514 1128 1743 2359	4.4E 4.1F 4.3E 4.0F	30 Tu	0131 0734 1355 1958	0439 1030 1705 2258	4.1E 3.9F 4.0E 3.8F	
				31 Su	0115 0723 1356 1946	0425 1021 1652 2239	4.2E 3.9F 3.9E 3.7F						31 W	0227 0826 1447 2055	0533 1123 1800 2357	3.9E 3.7F 4.0E 3.8F

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	
	f.m.	h.m.	Time	Vel.		h.m.	h.m.	Time	Vel.		h.m.	h.m.	Time	Vel.
1			0119	2.0E	16			0100	1.9E	1			0226	1.9E
Tu	0425		0748	2.2F	W	0408		0719	2.1F	F	0532		0858	2.2F
	1047		1336	2.1E		1033		1315	2.0E		1207		1449	1.8E
	1645		2011	2.4F		1621		1936	2.2F		1759		2121	2.0F
	2320					2257								
2			0205	2.0E	17			0135	2.0E	2			0025	1.8E
W	0512		0833	2.2F	Th	0442		0754	2.1F	Sa	0618		0946	2.1F
	1137		1424	2.0E		1112		1352	2.0E		1257		1538	1.7E
	1734		2059	2.3F		1658		2009	2.2F		1848		2210	1.8F
						2334								
3			0007	1.9E	18			0214	2.0E	3			0356	1.6E
Th	0600		0924	2.1F	F	0518		0827	2.1F	Su	0706		1040	1.9F
	1229		1515	1.9E		1153		1436	2.0E		1351		1631	1.5E
	1823		2147	2.1F		1738		2046	2.1F		1940		2303	1.6F
4			0056	1.8E	19			0255	1.9E	4			0447	1.5E
F	0649		1015	2.0F	Sa	0558		0908	2.1F	M	0759		1139	1.8F
	1322		1606	1.7E		1239		1517	1.9E		1447		1727	1.4E
	1915		2241	1.9F		1823		2131	2.0F		2038			
5			0147	1.7E	20			0340	1.9E	5			0009	1.6F
Sa	0741		1114	1.9F	Su	0643		0957	2.0F	Tu	0303		0546	1.4E
	1419		1701	1.6E		1331		1608	1.7E		0856		1240	1.8F
	2011		2342	1.8F		1913		2219	1.8F		1546		1831	1.3E
						2334					2138			
6			0242	1.6E	21			0431	1.7E	6			0112	1.5F
Su	0837		1216	1.9F	M	0735		1052	1.9F	W	0401		0649	1.4E
	1520		1804	1.4E		1430		1705	1.6E		0955		1340	1.8F
	2111					2011		2316	1.6F		1644		1932	1.4E
											2238			
7			0043	1.7F	22			0529	1.6E	7			0209	1.6F
M	0339		0628	1.5E	Tu	0836		1156	1.8F	Th	0459		0750	1.4E
	0937		1321	1.8F		1536		1808	1.4E		1053		1437	1.9F
	1621		1910	1.3E		2118					1739		2034	1.4E
	2213										2334			
8			0147	1.6F	23			0029	1.5F	8			0306	1.7F
Tu	0438		0733	1.4E	W	0353		0632	1.5E	F	0554		0847	1.5E
	1037		1420	1.9F		0943		1315	1.8F		1147		1528	2.0F
	1721		2015	1.4E		1644		1916	1.4E		1828		2123	1.6E
	2315					2231								
9			0248	1.6F	24			0153	1.5F	9			0354	1.8F
W	0535		0832	1.5E	Th	0501		0743	1.5E	Sa	0643		0936	1.6E
	1135		1518	2.0F		1055		1435	1.8F		1236		1613	2.1F
	1817		2112	1.4E		1751		2031	1.4E		1914		2208	1.7E
						2342								
10			0012	1.7F	25			0310	1.6F	10			0437	1.9F
Th	0629		0930	1.5E	F	0607		0853	1.6E	Su	0729		1017	1.7E
	1228		1607	2.0F		1203		1545	2.0F		1320		1654	2.1F
	1908		2205	1.5E		1852		2139	1.6E		1955		2243	1.8E
11			0102	1.8F	26			0414	1.8F	11			0512	2.0F
F	0717		1014	1.6E	Sa	0707		0957	1.7E	M	0810		1056	1.8E
	1315		1652	2.1F		1305		1644	2.2F		1401		1729	2.2F
	1953		2249	1.6E		1948		2237	1.7E		2034		2319	1.9E
12			0146	1.9F	27			0510	2.0F	12			0547	2.1F
Sa	0802		1056	1.7E	Su	0803		1056	1.9E	Tu	0849		1131	1.9E
	1357		1731	2.2F		1402		1735	2.3F		1438		1800	2.2F
	2033		2324	1.7E		2039		2330	1.9E		2110		2352	1.9E
13			0226	2.0F	28			0559	2.1F	13			0616	2.1F
Su	0842		1131	1.8E	M	0854		1147	2.0E	W	0927		1206	1.9E
	1435		1808	2.2F		1453		1824	2.4F		1515		1831	2.2F
	2111		2357	1.8E		2126					2146			
14			0301	2.0F	29			0016	2.0E	14			0025	2.0E
M	0920		1205	1.9E	Tu	0320		0646	2.2F	Th	0333		0647	2.2F
	1511		1837	2.2F		0943		1236	2.0E		1005		1245	2.0E
	2146					1541		1908	2.3F		1552		1904	2.1F
						2211					2222			
15			0029	1.9E	30			0100	2.0E	15			0104	2.0E
Tu	0335		0652	2.0F	W	0405		0729	2.3F	F	0409		0721	2.2F
	0957		1238	2.0E		1031		1320	2.0E		1046		1326	2.0E
	1546		1905	2.2F		1627		1951	2.3F		1631		1939	2.1F
	2221					2255					2301			
					31			0143	2.0E					
					Th	0448		0812	2.2F					
						1118		1403	1.9E					
						1713		2036	2.1F					
						2339								

POLLOCK RIP CHANNEL, MASSACHUSETTS, 1983

F-Flood, Dir. 035° True E-Ebb, Dir. 225° 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	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots	Day	h.m.	h.m.	knots
1		0239	1.7E	16		0204	2.0E	1	0101	0340	1.6E	16	0056	0338	1.8E
Su	0548	0921	2.0F	M	0509	0827	2.2F	W	0650	1023	1.9F	Th	0649	1019	2.1F
	1233	1511	1.6E		1202	1438	1.8E		1342	1619	1.5E		1344	1622	1.7E
	1822	2143	1.7F		1747	2050	1.8F		1931	2247	1.6F		1936	2251	1.7F
2	0043	0325	1.6E	17	0011	0255	1.9E	2	0151	0431	1.5E	17	0159	0441	1.7E
M	0634	1009	2.0F	Tu	0602	0924	2.1F	Th	0739	1113	1.9F	F	0753	1126	2.1F
	1323	1602	1.5E		1259	1533	1.7E		1431	1710	1.5E		1445	1727	1.7E
	1911	2231	1.6F		1845	2150	1.7F		2022	2342	1.6F		2040		
3	0133	0412	1.5E	18	0110	0352	1.8E	3	0244	0522	1.5E	18		0005	1.7F
Tu	0723	1100	1.9F	W	0700	1025	2.0F	F	0830	1205	1.9F	Sa	0305	0548	1.6E
	1415	1654	1.4E		1400	1636	1.6E		1521	1800	1.5E		0859	1237	2.0F
	2005	2330	1.5F		1949	2301	1.6F		2114				1546	1834	1.7E
4	0227	0506	1.5E	19	0214	0454	1.6E	4		0036	1.6F	19		0114	1.8F
W	0817	1158	1.8F	Th	0806	1139	2.0F	Sa	0338	0617	1.5E	Su	0411	0659	1.6E
	1509	1749	1.4E		1505	1743	1.5E		0923	1257	1.9F		1006	1344	2.0F
	2101				2057				1611	1852	1.6E		1647	1943	1.7E
									2205				2248		
5		0029	1.5F	20		0017	1.6F	5		0127	1.7F	20		0220	1.9F
Th	0323	0603	1.4E	F	0323	0605	1.6E	Su	0431	0709	1.5E	M	0516	0809	1.6E
	0913	1255	1.8F		0915	1255	2.0F		1016	1349	1.9F		1111	1449	2.0F
	1603	1848	1.4E		1610	1854	1.5E		1700	1943	1.6E		1744	2044	1.7E
	2158				2206				2254				2347		
6		0127	1.6F	21		0137	1.7F	6		0220	1.8F	21		0321	2.1F
F	0420	0703	1.4E	Sa	0431	0718	1.6E	M	0523	0802	1.6E	Tu	0617	0915	1.6E
	1009	1350	1.9F		1025	1408	2.0F		1107	1435	1.9F		1212	1544	2.0F
	1656	1943	1.5E		1712	2005	1.6E		1747	2031	1.7E		1839	2139	1.8E
	2252				2312				2341						
7		0222	1.7F	22		0244	1.8F	7		0305	1.8F	22	0042	0416	2.2F
Sa	0514	0759	1.5E	Su	0536	0827	1.6E	Tu	0613	0851	1.6E	W	0714	1011	1.7E
	1103	1441	1.9F		1132	1510	2.1F		1156	1520	1.9F		1309	1638	2.0F
	1745	2034	1.6E		1810	2106	1.7E		1832	2114	1.8E		1929	2232	1.8E
	2341														
8		0309	1.8F	23	0011	0343	2.0F	8	0026	0349	1.9F	23	0132	0505	2.2F
Su	0605	0850	1.6E	M	0637	0934	1.7E	W	0700	0938	1.7E	Th	0807	1106	1.7E
	1153	1528	2.0F		1233	1607	2.1F		1244	1605	1.9F		1400	1727	2.0F
	1831	2118	1.7E		1904	2202	1.8E		1915	2158	1.8E		2017	2315	1.8E
9	0027	0352	1.9F	24	0105	0437	2.2F	9	0108	0430	2.0F	24	0218	0554	2.2F
M	0652	0936	1.7E	Tu	0733	1027	1.8E	Th	0746	1023	1.7E	F	0855	1149	1.6E
	1239	1610	2.0F		1328	1700	2.1F		1330	1645	1.9F		1447	1812	1.9F
	1914	2159	1.8E		1953	2253	1.9E		1958	2241	1.9E		2101	2357	1.8E
10	0108	0433	2.0F	25	0154	0526	2.2F	10	0150	0510	2.1F	25	0301	0638	2.2F
Tu	0736	1017	1.7E	W	0824	1118	1.8E	F	0832	1109	1.8E	Sa	0940	1232	1.6E
	1322	1646	2.1F		1419	1747	2.1F		1415	1725	1.9F		1531	1853	1.8F
	1954	2237	1.9E		2040	2336	1.9E		2041	2324	2.0E		2143		
11	0146	0506	2.1F	26	0239	0611	2.3F	11	0233	0552	2.2F	26		0036	1.7E
W	0817	1058	1.8E	Th	0912	1204	1.8E	Sa	0918	1154	1.8E	Su	0340	0719	2.2F
	1403	1722	2.1F		1506	1833	2.0F		1502	1812	1.9F		1022	1310	1.6E
	2033	2315	1.9E		2123				2125				1611	1934	1.8F
													2223		
12	0224	0542	2.1F	27		0017	1.8E	12		0009	2.0E	27		0112	1.7E
Th	0859	1137	1.9E	F	0321	0654	2.2F	Su	0317	0638	2.3F	M	0419	0754	2.1F
	1444	1756	2.0F		0958	1247	1.7E		1006	1241	1.9E		1103	1346	1.6E
	2111	2353	2.0E		1549	1914	1.9F		1550	1854	1.9F		1650	2013	1.7F
					2205				2211				2304		
13	0301	0617	2.2F	28		0056	1.8E	13		0056	2.0E	28		0149	1.7E
F	0940	1218	1.9E	Sa	0401	0735	2.2F	M	0404	0726	2.3F	Tu	0457	0833	2.1F
	1525	1833	2.0F		1042	1328	1.7E		1056	1332	1.9E		1143	1423	1.6E
	2151				1631	1953	1.8F		1641	1945	1.9F		1730	2048	1.7F
					2247				2302				2346		
14		0034	2.0E	29		0134	1.7E	14		0147	2.0E	29		0230	1.7E
Sa	0340	0656	2.3F	Su	0441	0816	2.1F	Tu	0455	0816	2.3F	W	0536	0909	2.1F
	1024	1303	1.9E		1125	1407	1.6E		1149	1425	1.8E		1224	1502	1.6E
	1608	1914	2.0F		1713	2034	1.7F		1735	2042	1.8F		1811	2124	1.7F
	2233				2329				2356						
15		0117	2.0E	30		0214	1.7E	15		0239	1.9E	30	0030	0311	1.7E
Su	0423	0740	2.3F	M	0522	0855	2.1F	W	0550	0914	2.2F	Th	0618	0947	2.0F
	1111	1348	1.9E		1209	1448	1.6E		1245	1522	1.8E		1307	1543	1.6E
	1655	1957	1.9F		1756	2114	1.6F		1834	2143	1.8F		1854	2206	1.7F
	2319														
				31	0013	0255	1.6E								
				Tu	0604	0940	2.0F								
					1255	1531	1.5E								
					1842	2200	1.6F								

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

MAY				JUNE											
Day	Slack Water														
	Time	Current	Vel.												
	h.m.	h.m.	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	1 W	0252 0950 1537 2211	0633 1226 1904 2.3E	2.7E 2.2F 2.3E	16 Th	0319 1002 1600 2235	0012 0647 1250 1922	3.3F 3.9E 3.4F 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 2.2E	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 1032 1615 2251	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 2124	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	0404 0532 1219 1809	0232 0908 1459 2141	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	0610 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 2109	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 2116	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 2100	4.0E 3.0F 3.2E 3.0F	12 Su	0623 1216 1829	0308 0909 1530 2125	4.4E 3.6F 3.7E 3.7F	27 M	0712 1256 1917	0350 0951 1613 2153	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	0628 1213 1824	0356 1000 1622 2218	4.4E 3.7F 3.7E 3.7F	28 Tu	0056 0750 1336 1959	0430 1029 1655 2236	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	0042 0737 1321 1941	0416 1014 1639 2220	3.5E 2.6F 2.7E 2.5F	14 Tu	0122 0807 1402 2024	0451 1055 1720 2315	4.3E 3.6F 3.7E 3.5F	29 W	0136 0829 1416 2042	0511 1107 1737 2321	3.0E 2.4F 2.5E 2.2F
15 Su	1322 1935	0043 0729 1322 1935	4.1E 3.4F 3.4E 3.4F	30 M	0123 0820 1404 2027	0459 1055 1723 2305	3.2E 2.4F 2.5E 2.3F	15 W	0219 0903 1500 2128	0549 1149 1821	4.1E 3.5F 3.7E	30 Th	0219 0908 1459 2130	0554 1149 1825	2.8E 2.4F 2.4E
				31 Tu	0206 0904 1449 2117	0543 1136 1812 2352	2.9E 2.3F 2.3E 2.0F								

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

SEPTEMBER

OCTOBER

SEPTEMBER				OCTOBER										
Slack Water Time	Maximum Current		Slack Water Time	Maximum Current		Slack Water Time	Maximum Current							
Day	h.m.	h.m. knots	Day	h.m.	h.m. knots	Day	h.m.	h.m. knots						
1 Th	0232 0533 1155 1758	2.3F 2.5E 2.6F 3.2E	16 F	0132 0718 1347 1930	0432 1031 1650 2256	2.2F 2.5E 2.2F 3.0E	1 Sa	0034 0621 1251 1846	0314 0949 1540 2218	2.6F 2.9E 2.9F 3.5E	16 Su	0146 0733 1410 1946	0447 1049 1702 2311	2.2F 2.6E 2.2F 2.9E
2 F	0056 0639 1302 1903	2.5F 2.7E 2.9F 3.5E	17 Sa	0225 0812 1440 2022	0525 1122 1739 2345	2.3F 2.7E 2.4F 3.2E	2 Su	0136 0725 1356 1950	0418 1050 1644 2318	2.9F 3.4E 3.2F 3.9E	17 M	0233 0819 1456 2033	0532 1139 1745 2354	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	0611 1211 1824 2500	2.5F 2.9E 2.5F	3 M	0233 0823 1456 2049	0519 1145 1745 2418	3.4F 3.9E 3.6F	18 Tu	0315 0900 1538 2117	0607 1220 1824 2417	2.6F 3.2E 2.5F
4 Su	0253 0841 1506 2103	3.2F 3.6E 3.6F	19 M	0353 0939 1608 2149	0650 1252 1859 2512	3.3E 2.6F 3.1E 2.6F	4 Tu	0325 0918 1550 2144	0614 1239 1840 2512	3.8F 4.4E 3.9F	19 W	0352 0937 1516 2157	0639 1259 1858 2517	2.8F 3.4E 2.8F
5 M	0346 0936 1602 2158	4.3E 3.7F 4.1E 4.0F	20 Tu	0431 1015 1647 2227	0721 1333 1931 2544	3.4E 2.8F 3.2E 2.8F	5 W	0415 1009 1642 2235	0705 1330 1931 2544	4.1F 4.7E 4.1F	20 Th	0427 1013 1653 2235	0711 1338 1931 2544	2.9F 3.5E 2.9F
6 Tu	0436 1028 1655 2251	4.6E 4.0F 4.5E 4.2F	21 W	0506 1049 1723 2304	0750 1409 2003 2612	2.9F 3.3E 2.8F	6 Th	0503 1057 1733 2325	0753 1419 2021 2612	4.2F 4.8E 4.1F	21 F	0500 1048 1728 2312	0744 1414 2009 2607	3.1F 3.7E 3.0F
7 W	0525 1119 1748 2342	4.8E 4.2F 4.7E 4.3F	22 Th	0538 1123 1757 2340	0818 1447 2037 2645	2.9F 3.4E 2.9F	7 F	0550 1145 1822 2410	0840 1508 2110	4.2F 4.8E 4.0F	22 Sa	0532 1123 1804 2350	0820 1449 2046 2645	3.1F 3.7E 3.1F
8 Th	0613 1208 1840	4.8E 4.3F 4.2F	23 F	0609 1156 1831	0853 1521 2112	3.0F 3.4E 2.9F	8 Sa	0613 1232 1912	0331 0925 1554 2157	4.3E 4.0F 4.6E 3.7F	23 Su	0606 1159 1841	0305 0859 1526 2127	3.2E 3.2F 3.7E 3.0F
9 F	0033 0702 1258 1933	4.6E 4.2F 4.6E 3.9F	24 Sa	0016 0639 1230 1906	0337 0930 1553 2153	3.2E 3.0F 3.4E 2.8F	9 Su	0102 0725 1319 2004	0417 1014 1645 2245	3.9E 3.6F 4.2E 3.3F	24 M	0030 0642 1239 1922	0340 0942 1603 2210	3.1E 3.1F 3.6E
10 Sa	0124 0752 1348 2027	4.2E 3.9F 4.3E 3.5F	25 Su	0053 0712 1307 1946	0406 1007 1630 2235	3.0E 2.9F 3.3E 2.7F	10 M	0151 0815 1407 2057	0508 1102 1736 2336	3.5E 3.2F 3.8E 2.9F	25 Tu	0112 0724 1322 2009	0419 1026 1642 2301	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	0439 1050 1705 2320	2.9E 2.8F 3.2E 2.6F	11 Tu	0243 0910 1458 2155	0602 1163 1831	3.0E 2.7F 3.3E	26 W	0200 0813 1412 2102	0504 1115 1738 2352	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	0520 1137 1754	2.7E 2.7F 3.1E	12 W	0338 1009 1553 2255	0634 1250 1929	2.4F 2.6E 2.3F 3.0E	27 Th	0254 0911 1510 2202	0605 1210 1841	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	0612 1231 1853	2.5F 2.6E 2.6F 3.0E	13 Th	0437 1113 1652 2356	0759 1353 2027	2.1F 2.4E 2.0F 2.8E	28 F	0354 1018 1614 2307	0650 1313 1950	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	0723 1330 2007	2.4F 2.5E 2.5F 3.0E	14 F	0540 1218 1753	0248 0859 1502 2127	2.0F 2.3E 1.9F 2.7E	29 Sa	0459 1131 1723	0151 0826 1417 2057	2.7F 2.9E 2.7F 3.3E
15 Th	0033 0615 1248 1833	2.2F 2.5E 2.2F 3.0E	30 F	0514 1140 1738	0209 0840 1433 2115	2.4F 2.6E 2.6F 3.2E	15 Sa	0054 0639 1317 1852	0351 0956 1609 2220	2.1F 2.4E 2.0F 2.8E	30 Su	0013 0605 1242 1831	0256 0930 1526 2201	2.8F 3.2E 2.9F 3.5E
											31 M	0115 0707 1346 1935	0402 1031 1633 2259	3.1F 3.6E 3.2F 3.8E

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

NOVEMBER

DECEMBER

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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	1 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 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 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 0935 1622 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	0640 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	0610 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	0640 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	0707 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	0801 1358 2046	0458 1058 1727 2336 3.1E 3.2F 3.7E 3.1F	9 F	0902 1437 2134	0556 1136 1816 2.9E 2.2F 2.9E	24 Sa	0851 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	0901 1457 2145	0559 1153 1828 3.1E 3.0F 3.6E	10 Sa	0956 1526 2222	0646 1226 1906 2.4E 2.0F 2.6E	25 Su	0955 1545 2225	0647 1240 1913 3.6E 3.2F 3.7E	11 F	1037 1609 2312	0723 1306 1948 2.3E 1.9F 2.6E	26 Sa	1009 1600 2247	0704 1257 1933 3.1E 2.9F 3.5E	11 Su	1053 1619 2313	0738 1319 1958 2.3E 1.8F 2.5E	26 M	1103 1649 2326	0748 1344 2016 3.6E 3.0F 3.6E	12 Sa	1139 1707	0822 1408 2042 2.3E 1.8F 2.6E	27 Su	1120 1707 2351	0808 1402 2038 3.3E 2.8F 3.5E	12 M	1150 1715	0831 1416 2052 2.4E 1.8F 2.4E	27 Tu	1211 1754	1454 2117 2.9F 3.5E	13 Su	1238 1805	0251 0916 1514 2139 2.0F 2.4E 1.8F 2.6E	28 M	0547 1229 1814	0238 0912 1512 2139 3.1F 3.5E 2.9F 3.5E	13 Tu	0553 1245 1811	0242 0924 1512 2144 2.2F 2.6E 1.9F 2.5E	28 W	0626 1315 1859	0322 0952 1605 2216 3.2F 3.8E 2.9F 3.4E	14 M	1331 1901	0346 1009 1609 2228 2.1F 2.6E 2.0F 2.7E	29 Tu	1332 1918	0648 1620 2239 3.2F 3.8E 3.1F 3.7E	14 W	0642 1337 1906	0333 1015 1605 2233 2.3F 2.8E 2.1F 2.6E	29 Th	0725 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	1431 2018	0746 1721 2334 4.1E 3.3F 3.8E	15 Th	0729 1424 1958	0424 1103 1657 2321 2.5F 3.1E 2.3F 2.7E	30 F	0821 1512 2058	0526 1145 1806 3.3F 4.1E 3.1F	31 Sa	0913 1603 2151	0617 1236 1857 3.3F 4.1E 3.1F

THE NARROWS, NEW YORK HARBOR, NEW YORK, 1983

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

JANUARY								FEBRUARY																																																																																																																																																																																																																																																						
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1 Sa	0509 1112 1807 2330	0152 0754 1429 2028	2.3E 2.4F 2.6E 1.8F	16 Su	0206 0801 1118 1821 2032 2336	1.8E 1.8F 2.1E 1.4F	1 Tu	0007 0646 1232 1922	0316 0924 1545 2201	2.4E 2.1F 2.4E 1.9F	16 W	0630 1210 1858	0300 0904 1521 2130	1.9E 1.7F 2.0E 1.6F	2 Su	0604 1204 1859	0243 0850 1519 2127	2.3E 2.3F 2.6E 1.8F	17 M	0247 0846 1159 1901	1.8E 1.7F 2.0E 1.4F	2 W	0100 0745 1320 2015	0409 1020 1634 2253	2.2E 1.9F 2.2E 1.9F	17 Th	0035 0717 1250 1937	0339 0950 1558 2217	1.9E 1.6F 1.9E 1.7F	3 M	0026 0703 1256 1953	0336 0945 1609 2227	2.2E 2.1F 2.4E 1.8F	18 Tu	0019 0653 1239 1942	1.7E 1.6F 2.0E 1.4F	3 Th	0154 0846 1409 2109	0505 1116 1725 2347	2.0E 1.6F 2.0E 1.8F	18 F	0120 0811 1332 2021	0424 1039 1637 2304	1.8E 1.5F 1.8E 1.7F	4 Tu	0123 0807 1347 2049	0431 1044 1703 2325	2.1E 1.9F 2.2E 1.8F	19 W	0104 0744 1320 2025	1.7E 1.5F 1.9E 1.5F	4 F	0249 0947 1500 2203	0604 1210 1824 2401	1.8E 1.4F 1.8E	19 Sa	0210 0911 1419 2112	0519 1128 1731 2353	1.8E 1.4F 1.7E 1.7F	5 W	0220 0911 1440 2143	0531 1144 1802	1.9E 1.7F 2.1E	20 Th	0151 0841 1404 2109	1.6E 1.4F 1.8E 1.5F	5 Sa	0348 1048 1555 2256	0043 0708 1309 1923	1.7F 1.7E 1.2F 1.7E	20 Su	0304 1012 1512 2207	0622 1221 1836	1.7E 1.3F 1.7E	6 Th	0320 1014 1535 2237	0023 0637 1242 1900	1.8F 1.9E 1.5F 2.0E	21 F	0241 0940 1451 2154	1.6E 1.3F 1.7E	6 Su	0449 1147 1654 2350	0142 0809 1424 2020	1.6F 1.7E 1.1F 1.7E	21 M	0405 1113 1614 2306	0047 0728 1318 1941	1.7F 1.8E 1.2F 1.7E	7 F	0422 1115 1632 2329	0121 0742 1345 1958	1.7F 1.8E 1.4F 1.9E	22 Sa	0337 1039 1544 2242	1.6F 1.6E 1.3F 1.7E	7 M	0548 1245 1752	0253 0904 2112	1.6F 1.7E 1.1F 1.6E	22 Tu	0509 1214 1719	0146 0828 2040	1.8F 1.9E 1.2F 1.8E	8 Sa	0524 1214 1729	0227 0839 1502 2049	1.7F 1.9E 1.3F 1.9E	23 Su	0436 1138 1643 2333	1.7F 1.8E 1.2F 1.8E	8 Tu	0042 0641 1340 1846	0357 0953 1632 2157	1.6F 1.8E 1.1F 1.6E	23 W	0007 0611 1312 1822	0249 0924 1528 2138	1.9F 2.1E 1.3F 2.0E	9 Su	0020 0620 1312 1823	0330 0931 1606 2138	1.8F 1.9E 1.2F 1.8E	24 M	0536 1238 1743	1.8F 1.9E 1.2F 1.9E	9 W	0134 0728 1430 1935	0448 1042 1717 2246	1.7F 1.9E 1.2F 1.7E	24 Th	0108 0708 1407 1921	0357 1019 1635 2235	2.0F 2.2E 1.6F 2.1E	10 M	0111 0710 1406 1912	0423 1020 1655 2223	1.8F 1.9E 1.3F 1.8E	25 Tu	0028 0634 1335 1841	0314 0947 1547 2154	1.9F 2.1E 1.4F 2.0E	10 Th	0222 0811 1514 2020	0527 1126 1759 2333	1.8F 1.9E 1.3F 1.7E	25 F	0207 0802 1458 2016	0457 1116 1730 2330	2.2F 2.4E 1.8F 2.3E	11 Tu	0159 0755 1455 1958	0510 1109 1740 2310	1.9F 2.0E 1.3F 1.8E	26 W	0124 0728 1430 1936	0413 1041 1648 2251	2.1F 2.2E 1.5F 2.1E	11 F	0307 0852 1555 2103	0558 1211 1828	1.8F 2.0E 1.4F	26 Sa	0302 0853 1545 2109	0548 1209 1815	2.3F 2.5E 2.0F	12 W	0245 0837 1540 2042	0545 1156 1815 2359	1.9F 2.0E 1.3F 1.7E	27 Th	0220 0820 1520 2030	0508 1137 1740 2347	2.3F 2.4E 1.7F 2.2E	12 Sa	0349 0932 1634 2145	0021 0628 1254 1853	1.8E 1.9F 2.1E 1.5F	27 Su	0354 0942 1631 2231	0027 0636 1300 1901	2.4E 2.4F 2.6E 2.1F	13 Th	0328 0918 1622 2125	0618 1238 1846	1.9F 2.0E 1.3F	28 F	0313 0912 1608 2124	0559 1229 1831	2.4F 2.5E 1.9F	13 Su	0429 1012 1710 2227	0104 0659 1333 1925	1.8E 1.9F 2.1E 1.5F	28 M	0445 1031 1716 2253	0120 0723 1348 1947	2.5E 2.3F 2.6E 2.1F	14 F	0409 0958 1702 2208	0042 0646 1320 1915	1.7E 1.9F 2.1E 1.4F	29 Sa	0406 1003 1655 2218	0043 0649 1321 1918	2.4E 2.5F 2.6E 2.0F	14 M	0508 1051 1746 2309	0145 0738 1410 2002	1.9E 1.8F 2.1E 1.6F						15 Sa	0448 1038 1741 2252	0127 0722 1359 1951	1.8E 1.9F 2.1E 1.4F	30 Su	0457 1053 1742 2313	0137 0738 1410 2010	2.4E 2.4F 2.6E 2.0F	15 Tu	0548 1130 1822 2351	0223 0819 1446 2045	1.9E 1.8F 2.1E 1.6F										31 M	0550 1143 1831	0228 0831 1457 2104	2.4E 2.3F 2.6E 2.0F														
2 Su	0604 1204 1859	0243 0850 1519 2127	2.3E 2.3F 2.6E 1.8F	17 M	0247 0846 1159 1901	1.8E 1.7F 2.0E 1.4F	2 W	0100 0745 1320 2015	0409 1020 1634 2253	2.2E 1.9F 2.2E 1.9F	17 Th	0035 0717 1250 1937	0339 0950 1558 2217	1.9E 1.6F 1.9E 1.7F	3 M	0026 0703 1256 1953	0336 0945 1609 2227	2.2E 2.1F 2.4E 1.8F	18 Tu	0019 0653 1239 1942	1.7E 1.6F 2.0E 1.4F	3 Th	0154 0846 1409 2109	0505 1116 1725 2347	2.0E 1.6F 2.0E 1.8F	18 F	0120 0811 1332 2021	0424 1039 1637 2304	1.8E 1.5F 1.8E 1.7F	4 Tu	0123 0807 1347 2049	0431 1044 1703 2325	2.1E 1.9F 2.2E 1.8F	19 W	0104 0744 1320 2025	1.7E 1.5F 1.9E 1.5F	4 F	0249 0947 1500 2203	0604 1210 1824 2401	1.8E 1.4F 1.8E	19 Sa	0210 0911 1419 2112	0519 1128 1731 2353	1.8E 1.4F 1.7E 1.7F	5 W	0220 0911 1440 2143	0531 1144 1802	1.9E 1.7F 2.1E	20 Th	0151 0841 1404 2109	1.6E 1.4F 1.8E 1.5F	5 Sa	0348 1048 1555 2256	0043 0708 1309 1923	1.7F 1.7E 1.2F 1.7E	20 Su	0304 1012 1512 2207	0622 1221 1836	1.7E 1.3F 1.7E	6 Th	0320 1014 1535 2237	0023 0637 1242 1900	1.8F 1.9E 1.5F 2.0E	21 F	0241 0940 1451 2154	1.6E 1.3F 1.7E	6 Su	0449 1147 1654 2350	0142 0809 1424 2020	1.6F 1.7E 1.1F 1.7E	21 M	0405 1113 1614 2306	0047 0728 1318 1941	1.7F 1.8E 1.2F 1.7E	7 F	0422 1115 1632 2329	0121 0742 1345 1958	1.7F 1.8E 1.4F 1.9E	22 Sa	0337 1039 1544 2242	1.6F 1.6E 1.3F 1.7E	7 M	0548 1245 1752	0253 0904 2112	1.6F 1.7E 1.1F 1.6E	22 Tu	0509 1214 1719	0146 0828 2040	1.8F 1.9E 1.2F 1.8E	8 Sa	0524 1214 1729	0227 0839 1502 2049	1.7F 1.9E 1.3F 1.9E	23 Su	0436 1138 1643 2333	1.7F 1.8E 1.2F 1.8E	8 Tu	0042 0641 1340 1846	0357 0953 1632 2157	1.6F 1.8E 1.1F 1.6E	23 W	0007 0611 1312 1822	0249 0924 1528 2138	1.9F 2.1E 1.3F 2.0E	9 Su	0020 0620 1312 1823	0330 0931 1606 2138	1.8F 1.9E 1.2F 1.8E	24 M	0536 1238 1743	1.8F 1.9E 1.2F 1.9E	9 W	0134 0728 1430 1935	0448 1042 1717 2246	1.7F 1.9E 1.2F 1.7E	24 Th	0108 0708 1407 1921	0357 1019 1635 2235	2.0F 2.2E 1.6F 2.1E	10 M	0111 0710 1406 1912	0423 1020 1655 2223	1.8F 1.9E 1.3F 1.8E	25 Tu	0028 0634 1335 1841	0314 0947 1547 2154	1.9F 2.1E 1.4F 2.0E	10 Th	0222 0811 1514 2020	0527 1126 1759 2333	1.8F 1.9E 1.3F 1.7E	25 F	0207 0802 1458 2016	0457 1116 1730 2330	2.2F 2.4E 1.8F 2.3E	11 Tu	0159 0755 1455 1958	0510 1109 1740 2310	1.9F 2.0E 1.3F 1.8E	26 W	0124 0728 1430 1936	0413 1041 1648 2251	2.1F 2.2E 1.5F 2.1E	11 F	0307 0852 1555 2103	0558 1211 1828	1.8F 2.0E 1.4F	26 Sa	0302 0853 1545 2109	0548 1209 1815	2.3F 2.5E 2.0F	12 W	0245 0837 1540 2042	0545 1156 1815 2359	1.9F 2.0E 1.3F 1.7E	27 Th	0220 0820 1520 2030	0508 1137 1740 2347	2.3F 2.4E 1.7F 2.2E	12 Sa	0349 0932 1634 2145	0021 0628 1254 1853	1.8E 1.9F 2.1E 1.5F	27 Su	0354 0942 1631 2231	0027 0636 1300 1901	2.4E 2.4F 2.6E 2.1F	13 Th	0328 0918 1622 2125	0618 1238 1846	1.9F 2.0E 1.3F	28 F	0313 0912 1608 2124	0559 1229 1831	2.4F 2.5E 1.9F	13 Su	0429 1012 1710 2227	0104 0659 1333 1925	1.8E 1.9F 2.1E 1.5F	28 M	0445 1031 1716 2253	0120 0723 1348 1947	2.5E 2.3F 2.6E 2.1F	14 F	0409 0958 1702 2208	0042 0646 1320 1915	1.7E 1.9F 2.1E 1.4F	29 Sa	0406 1003 1655 2218	0043 0649 1321 1918	2.4E 2.5F 2.6E 2.0F	14 M	0508 1051 1746 2309	0145 0738 1410 2002	1.9E 1.8F 2.1E 1.6F						15 Sa	0448 1038 1741 2252	0127 0722 1359 1951	1.8E 1.9F 2.1E 1.4F	30 Su	0457 1053 1742 2313	0137 0738 1410 2010	2.4E 2.4F 2.6E 2.0F	15 Tu	0548 1130 1822 2351	0223 0819 1446 2045	1.9E 1.8F 2.1E 1.6F										31 M	0550 1143 1831	0228 0831 1457 2104	2.4E 2.3F 2.6E 2.0F																													
3 M	0026 0703 1256 1953	0336 0945 1609 2227	2.2E 2.1F 2.4E 1.8F	18 Tu	0019 0653 1239 1942	1.7E 1.6F 2.0E 1.4F	3 Th	0154 0846 1409 2109	0505 1116 1725 2347	2.0E 1.6F 2.0E 1.8F	18 F	0120 0811 1332 2021	0424 1039 1637 2304	1.8E 1.5F 1.8E 1.7F	4 Tu	0123 0807 1347 2049	0431 1044 1703 2325	2.1E 1.9F 2.2E 1.8F	19 W	0104 0744 1320 2025	1.7E 1.5F 1.9E 1.5F	4 F	0249 0947 1500 2203	0604 1210 1824 2401	1.8E 1.4F 1.8E	19 Sa	0210 0911 1419 2112	0519 1128 1731 2353	1.8E 1.4F 1.7E 1.7F	5 W	0220 0911 1440 2143	0531 1144 1802	1.9E 1.7F 2.1E	20 Th	0151 0841 1404 2109	1.6E 1.4F 1.8E 1.5F	5 Sa	0348 1048 1555 2256	0043 0708 1309 1923	1.7F 1.7E 1.2F 1.7E	20 Su	0304 1012 1512 2207	0622 1221 1836	1.7E 1.3F 1.7E	6 Th	0320 1014 1535 2237	0023 0637 1242 1900	1.8F 1.9E 1.5F 2.0E	21 F	0241 0940 1451 2154	1.6E 1.3F 1.7E	6 Su	0449 1147 1654 2350	0142 0809 1424 2020	1.6F 1.7E 1.1F 1.7E	21 M	0405 1113 1614 2306	0047 0728 1318 1941	1.7F 1.8E 1.2F 1.7E	7 F	0422 1115 1632 2329	0121 0742 1345 1958	1.7F 1.8E 1.4F 1.9E	22 Sa	0337 1039 1544 2242	1.6F 1.6E 1.3F 1.7E	7 M	0548 1245 1752	0253 0904 2112	1.6F 1.7E 1.1F 1.6E	22 Tu	0509 1214 1719	0146 0828 2040	1.8F 1.9E 1.2F 1.8E	8 Sa	0524 1214 1729	0227 0839 1502 2049	1.7F 1.9E 1.3F 1.9E	23 Su	0436 1138 1643 2333	1.7F 1.8E 1.2F 1.8E	8 Tu	0042 0641 1340 1846	0357 0953 1632 2157	1.6F 1.8E 1.1F 1.6E	23 W	0007 0611 1312 1822	0249 0924 1528 2138	1.9F 2.1E 1.3F 2.0E	9 Su	0020 0620 1312 1823	0330 0931 1606 2138	1.8F 1.9E 1.2F 1.8E	24 M	0536 1238 1743	1.8F 1.9E 1.2F 1.9E	9 W	0134 0728 1430 1935	0448 1042 1717 2246	1.7F 1.9E 1.2F 1.7E	24 Th	0108 0708 1407 1921	0357 1019 1635 2235	2.0F 2.2E 1.6F 2.1E	10 M	0111 0710 1406 1912	0423 1020 1655 2223	1.8F 1.9E 1.3F 1.8E	25 Tu	0028 0634 1335 1841	0314 0947 1547 2154	1.9F 2.1E 1.4F 2.0E	10 Th	0222 0811 1514 2020	0527 1126 1759 2333	1.8F 1.9E 1.3F 1.7E	25 F	0207 0802 1458 2016	0457 1116 1730 2330	2.2F 2.4E 1.8F 2.3E	11 Tu	0159 0755 1455 1958	0510 1109 1740 2310	1.9F 2.0E 1.3F 1.8E	26 W	0124 0728 1430 1936	0413 1041 1648 2251	2.1F 2.2E 1.5F 2.1E	11 F	0307 0852 1555 2103	0558 1211 1828	1.8F 2.0E 1.4F	26 Sa	0302 0853 1545 2109	0548 1209 1815	2.3F 2.5E 2.0F	12 W	0245 0837 1540 2042	0545 1156 1815 2359	1.9F 2.0E 1.3F 1.7E	27 Th	0220 0820 1520 2030	0508 1137 1740 2347	2.3F 2.4E 1.7F 2.2E	12 Sa	0349 0932 1634 2145	0021 0628 1254 1853	1.8E 1.9F 2.1E 1.5F	27 Su	0354 0942 1631 2231	0027 0636 1300 1901	2.4E 2.4F 2.6E 2.1F	13 Th	0328 0918 1622 2125	0618 1238 1846	1.9F 2.0E 1.3F	28 F	0313 0912 1608 2124	0559 1229 1831	2.4F 2.5E 1.9F	13 Su	0429 1012 1710 2227	0104 0659 1333 1925	1.8E 1.9F 2.1E 1.5F	28 M	0445 1031 1716 2253	0120 0723 1348 1947	2.5E 2.3F 2.6E 2.1F	14 F	0409 0958 1702 2208	0042 0646 1320 1915	1.7E 1.9F 2.1E 1.4F	29 Sa	0406 1003 1655 2218	0043 0649 1321 1918	2.4E 2.5F 2.6E 2.0F	14 M	0508 1051 1746 2309	0145 0738 1410 2002	1.9E 1.8F 2.1E 1.6F						15 Sa	0448 1038 1741 2252	0127 0722 1359 1951	1.8E 1.9F 2.1E 1.4F	30 Su	0457 1053 1742 2313	0137 0738 1410 2010	2.4E 2.4F 2.6E 2.0F	15 Tu	0548 1130 1822 2351	0223 0819 1446 2045	1.9E 1.8F 2.1E 1.6F										31 M	0550 1143 1831	0228 0831 1457 2104	2.4E 2.3F 2.6E 2.0F																																												
4 Tu	0123 0807 1347 2049	0431 1044 1703 2325	2.1E 1.9F 2.2E 1.8F	19 W	0104 0744 1320 2025	1.7E 1.5F 1.9E 1.5F	4 F	0249 0947 1500 2203	0604 1210 1824 2401	1.8E 1.4F 1.8E	19 Sa	0210 0911 1419 2112	0519 1128 1731 2353	1.8E 1.4F 1.7E 1.7F	5 W	0220 0911 1440 2143	0531 1144 1802	1.9E 1.7F 2.1E	20 Th	0151 0841 1404 2109	1.6E 1.4F 1.8E 1.5F	5 Sa	0348 1048 1555 2256	0043 0708 1309 1923	1.7F 1.7E 1.2F 1.7E	20 Su	0304 1012 1512 2207	0622 1221 1836	1.7E 1.3F 1.7E	6 Th	0320 1014 1535 2237	0023 0637 1242 1900	1.8F 1.9E 1.5F 2.0E	21 F	0241 0940 1451 2154	1.6E 1.3F 1.7E	6 Su	0449 1147 1654 2350	0142 0809 1424 2020	1.6F 1.7E 1.1F 1.7E	21 M	0405 1113 1614 2306	0047 0728 1318 1941	1.7F 1.8E 1.2F 1.7E	7 F	0422 1115 1632 2329	0121 0742 1345 1958	1.7F 1.8E 1.4F 1.9E	22 Sa	0337 1039 1544 2242	1.6F 1.6E 1.3F 1.7E	7 M	0548 1245 1752	0253 0904 2112	1.6F 1.7E 1.1F 1.6E	22 Tu	0509 1214 1719	0146 0828 2040	1.8F 1.9E 1.2F 1.8E	8 Sa	0524 1214 1729	0227 0839 1502 2049	1.7F 1.9E 1.3F 1.9E	23 Su	0436 1138 1643 2333	1.7F 1.8E 1.2F 1.8E	8 Tu	0042 0641 1340 1846	0357 0953 1632 2157	1.6F 1.8E 1.1F 1.6E	23 W	0007 0611 1312 1822	0249 0924 1528 2138	1.9F 2.1E 1.3F 2.0E	9 Su	0020 0620 1312 1823	0330 0931 1606 2138	1.8F 1.9E 1.2F 1.8E	24 M	0536 1238 1743	1.8F 1.9E 1.2F 1.9E	9 W	0134 0728 1430 1935	0448 1042 1717 2246	1.7F 1.9E 1.2F 1.7E	24 Th	0108 0708 1407 1921	0357 1019 1635 2235	2.0F 2.2E 1.6F 2.1E	10 M	0111 0710 1406 1912	0423 1020 1655 2223	1.8F 1.9E 1.3F 1.8E	25 Tu	0028 0634 1335 1841	0314 0947 1547 2154	1.9F 2.1E 1.4F 2.0E	10 Th	0222 0811 1514 2020	0527 1126 1759 2333	1.8F 1.9E 1.3F 1.7E	25 F	0207 0802 1458 2016	0457 1116 1730 2330	2.2F 2.4E 1.8F 2.3E	11 Tu	0159 0755 1455 1958	0510 1109 1740 2310	1.9F 2.0E 1.3F 1.8E	26 W	0124 0728 1430 1936	0413 1041 1648 2251	2.1F 2.2E 1.5F 2.1E	11 F	0307 0852 1555 2103	0558 1211 1828	1.8F 2.0E 1.4F	26 Sa	0302 0853 1545 2109	0548 1209 1815	2.3F 2.5E 2.0F	12 W	0245 0837 1540 2042	0545 1156 1815 2359	1.9F 2.0E 1.3F 1.7E	27 Th	0220 0820 1520 2030	0508 1137 1740 2347	2.3F 2.4E 1.7F 2.2E	12 Sa	0349 0932 1634 2145	0021 0628 1254 1853	1.8E 1.9F 2.1E 1.5F	27 Su	0354 0942 1631 2231	0027 0636 1300 1901	2.4E 2.4F 2.6E 2.1F	13 Th	0328 0918 1622 2125	0618 1238 1846	1.9F 2.0E 1.3F	28 F	0313 0912 1608 2124	0559 1229 1831	2.4F 2.5E 1.9F	13 Su	0429 1012 1710 2227	0104 0659 1333 1925	1.8E 1.9F 2.1E 1.5F	28 M	0445 1031 1716 2253	0120 0723 1348 1947	2.5E 2.3F 2.6E 2.1F	14 F	0409 0958 1702 2208	0042 0646 1320 1915	1.7E 1.9F 2.1E 1.4F	29 Sa	0406 1003 1655 2218	0043 0649 1321 1918	2.4E 2.5F 2.6E 2.0F	14 M	0508 1051 1746 2309	0145 0738 1410 2002	1.9E 1.8F 2.1E 1.6F						15 Sa	0448 1038 1741 2252	0127 0722 1359 1951	1.8E 1.9F 2.1E 1.4F	30 Su	0457 1053 1742 2313	0137 0738 1410 2010	2.4E 2.4F 2.6E 2.0F	15 Tu	0548 1130 1822 2351	0223 0819 1446 2045	1.9E 1.8F 2.1E 1.6F										31 M	0550 1143 1831	0228 0831 1457 2104	2.4E 2.3F 2.6E 2.0F																																																											
5 W	0220 0911 1440 2143	0531 1144 1802	1.9E 1.7F 2.1E	20 Th	0151 0841 1404 2109	1.6E 1.4F 1.8E 1.5F	5 Sa	0348 1048 1555 2256	0043 0708 1309 1923	1.7F 1.7E 1.2F 1.7E	20 Su	0304 1012 1512 2207	0622 1221 1836	1.7E 1.3F 1.7E	6 Th	0320 1014 1535 2237	0023 0637 1242 1900	1.8F 1.9E 1.5F 2.0E	21 F	0241 0940 1451 2154	1.6E 1.3F 1.7E	6 Su	0449 1147 1654 2350	0142 0809 1424 2020	1.6F 1.7E 1.1F 1.7E	21 M	0405 1113 1614 2306	0047 0728 1318 1941	1.7F 1.8E 1.2F 1.7E	7 F	0422 1115 1632 2329	0121 0742 1345 1958	1.7F 1.8E 1.4F 1.9E	22 Sa	0337 1039 1544 2242	1.6F 1.6E 1.3F 1.7E	7 M	0548 1245 1752	0253 0904 2112	1.6F 1.7E 1.1F 1.6E	22 Tu	0509 1214 1719	0146 0828 2040	1.8F 1.9E 1.2F 1.8E	8 Sa	0524 1214 1729	0227 0839 1502 2049	1.7F 1.9E 1.3F 1.9E	23 Su	0436 1138 1643 2333	1.7F 1.8E 1.2F 1.8E	8 Tu	0042 0641 1340 1846	0357 0953 1632 2157	1.6F 1.8E 1.1F 1.6E	23 W	0007 0611 1312 1822	0249 0924 1528 2138	1.9F 2.1E 1.3F 2.0E	9 Su	0020 0620 1312 1823	0330 0931 1606 2138	1.8F 1.9E 1.2F 1.8E	24 M	0536 1238 1743	1.8F 1.9E 1.2F 1.9E	9 W	0134 0728 1430 1935	0448 1042 1717 2246	1.7F 1.9E 1.2F 1.7E	24 Th	0108 0708 1407 1921	0357 1019 1635 2235	2.0F 2.2E 1.6F 2.1E	10 M	0111 0710 1406 1912	0423 1020 1655 2223	1.8F 1.9E 1.3F 1.8E	25 Tu	0028 0634 1335 1841	0314 0947 1547 2154	1.9F 2.1E 1.4F 2.0E	10 Th	0222 0811 1514 2020	0527 1126 1759 2333	1.8F 1.9E 1.3F 1.7E	25 F	0207 0802 1458 2016	0457 1116 1730 2330	2.2F 2.4E 1.8F 2.3E	11 Tu	0159 0755 1455 1958	0510 1109 1740 2310	1.9F 2.0E 1.3F 1.8E	26 W	0124 0728 1430 1936	0413 1041 1648 2251	2.1F 2.2E 1.5F 2.1E	11 F	0307 0852 1555 2103	0558 1211 1828	1.8F 2.0E 1.4F	26 Sa	0302 0853 1545 2109	0548 1209 1815	2.3F 2.5E 2.0F	12 W	0245 0837 1540 2042	0545 1156 1815 2359	1.9F 2.0E 1.3F 1.7E	27 Th	0220 0820 1520 2030	0508 1137 1740 2347	2.3F 2.4E 1.7F 2.2E	12 Sa	0349 0932 1634 2145	0021 0628 1254 1853	1.8E 1.9F 2.1E 1.5F	27 Su	0354 0942 1631 2231	0027 0636 1300 1901	2.4E 2.4F 2.6E 2.1F	13 Th	0328 0918 1622 2125	0618 1238 1846	1.9F 2.0E 1.3F	28 F	0313 0912 1608 2124	0559 1229 1831	2.4F 2.5E 1.9F	13 Su	0429 1012 1710 2227	0104 0659 1333 1925	1.8E 1.9F 2.1E 1.5F	28 M	0445 1031 1716 2253	0120 0723 1348 1947	2.5E 2.3F 2.6E 2.1F	14 F	0409 0958 1702 2208	0042 0646 1320 1915	1.7E 1.9F 2.1E 1.4F	29 Sa	0406 1003 1655 2218	0043 0649 1321 1918	2.4E 2.5F 2.6E 2.0F	14 M	0508 1051 1746 2309	0145 0738 1410 2002	1.9E 1.8F 2.1E 1.6F						15 Sa	0448 1038 1741 2252	0127 0722 1359 1951	1.8E 1.9F 2.1E 1.4F	30 Su	0457 1053 1742 2313	0137 0738 1410 2010	2.4E 2.4F 2.6E 2.0F	15 Tu	0548 1130 1822 2351	0223 0819 1446 2045	1.9E 1.8F 2.1E 1.6F										31 M	0550 1143 1831	0228 0831 1457 2104	2.4E 2.3F 2.6E 2.0F																																																																										
6 Th	0320 1014 1535 2237	0023 0637 1242 1900	1.8F 1.9E 1.5F 2.0E	21 F	0241 0940 1451 2154	1.6E 1.3F 1.7E	6 Su	0449 1147 1654 2350	0142 0809 1424 2020	1.6F 1.7E 1.1F 1.7E	21 M	0405 1113 1614 2306	0047 0728 1318 1941	1.7F 1.8E 1.2F 1.7E	7 F	0422 1115 1632 2329	0121 0742 1345 1958	1.7F 1.8E 1.4F 1.9E	22 Sa	0337 1039 1544 2242	1.6F 1.6E 1.3F 1.7E	7 M	0548 1245 1752	0253 0904 2112	1.6F 1.7E 1.1F 1.6E	22 Tu	0509 1214 1719	0146 0828 2040	1.8F 1.9E 1.2F 1.8E	8 Sa	0524 1214 1729	0227 0839 1502 2049	1.7F 1.9E 1.3F 1.9E	23 Su	0436 1138 1643 2333	1.7F 1.8E 1.2F 1.8E	8 Tu	0042 0641 1340 1846	0357 0953 1632 2157	1.6F 1.8E 1.1F 1.6E	23 W	0007 0611 1312 1822	0249 0924 1528 2138	1.9F 2.1E 1.3F 2.0E	9 Su	0020 0620 1312 1823	0330 0931 1606 2138	1.8F 1.9E 1.2F 1.8E	24 M	0536 1238 1743	1.8F 1.9E 1.2F 1.9E	9 W	0134 0728 1430 1935	0448 1042 1717 2246	1.7F 1.9E 1.2F 1.7E	24 Th	0108 0708 1407 1921	0357 1019 1635 2235	2.0F 2.2E 1.6F 2.1E	10 M	0111 0710 1406 1912	0423 1020 1655 2223	1.8F 1.9E 1.3F 1.8E	25 Tu	0028 0634 1335 1841	0314 0947 1547 2154	1.9F 2.1E 1.4F 2.0E	10 Th	0222 0811 1514 2020	0527 1126 1759 2333	1.8F 1.9E 1.3F 1.7E	25 F	0207 0802 1458 2016	0457 1116 1730 2330	2.2F 2.4E 1.8F 2.3E	11 Tu	0159 0755 1455 1958	0510 1109 1740 2310	1.9F 2.0E 1.3F 1.8E	26 W	0124 0728 1430 1936	0413 1041 1648 2251	2.1F 2.2E 1.5F 2.1E	11 F	0307 0852 1555 2103	0558 1211 1828	1.8F 2.0E 1.4F	26 Sa	0302 0853 1545 2109	0548 1209 1815	2.3F 2.5E 2.0F	12 W	0245 0837 1540 2042	0545 1156 1815 2359	1.9F 2.0E 1.3F 1.7E	27 Th	0220 0820 1520 2030	0508 1137 1740 2347	2.3F 2.4E 1.7F 2.2E	12 Sa	0349 0932 1634 2145	0021 0628 1254 1853	1.8E 1.9F 2.1E 1.5F	27 Su	0354 0942 1631 2231	0027 0636 1300 1901	2.4E 2.4F 2.6E 2.1F	13 Th	0328 0918 1622 2125	0618 1238 1846	1.9F 2.0E 1.3F	28 F	0313 0912 1608 2124	0559 1229 1831	2.4F 2.5E 1.9F	13 Su	0429 1012 1710 2227	0104 0659 1333 1925	1.8E 1.9F 2.1E 1.5F	28 M	0445 1031 1716 2253	0120 0723 1348 1947	2.5E 2.3F 2.6E 2.1F	14 F	0409 0958 1702 2208	0042 0646 1320 1915	1.7E 1.9F 2.1E 1.4F	29 Sa	0406 1003 1655 2218	0043 0649 1321 1918	2.4E 2.5F 2.6E 2.0F	14 M	0508 1051 1746 2309	0145 0738 1410 2002	1.9E 1.8F 2.1E 1.6F						15 Sa	0448 1038 1741 2252	0127 0722 1359 1951	1.8E 1.9F 2.1E 1.4F	30 Su	0457 1053 1742 2313	0137 0738 1410 2010	2.4E 2.4F 2.6E 2.0F	15 Tu	0548 1130 1822 2351	0223 0819 1446 2045	1.9E 1.8F 2.1E 1.6F										31 M	0550 1143 1831	0228 0831 1457 2104	2.4E 2.3F 2.6E 2.0F																																																																																									
7 F	0422 1115 1632 2329	0121 0742 1345 1958	1.7F 1.8E 1.4F 1.9E	22 Sa	0337 1039 1544 2242	1.6F 1.6E 1.3F 1.7E	7 M	0548 1245 1752	0253 0904 2112	1.6F 1.7E 1.1F 1.6E	22 Tu	0509 1214 1719	0146 0828 2040	1.8F 1.9E 1.2F 1.8E	8 Sa	0524 1214 1729	0227 0839 1502 2049	1.7F 1.9E 1.3F 1.9E	23 Su	0436 1138 1643 2333	1.7F 1.8E 1.2F 1.8E	8 Tu	0042 0641 1340 1846	0357 0953 1632 2157	1.6F 1.8E 1.1F 1.6E	23 W	0007 0611 1312 1822	0249 0924 1528 2138	1.9F 2.1E 1.3F 2.0E	9 Su	0020 0620 1312 1823	0330 0931 1606 2138	1.8F 1.9E 1.2F 1.8E	24 M	0536 1238 1743	1.8F 1.9E 1.2F 1.9E	9 W	0134 0728 1430 1935	0448 1042 1717 2246	1.7F 1.9E 1.2F 1.7E	24 Th	0108 0708 1407 1921	0357 1019 1635 2235	2.0F 2.2E 1.6F 2.1E	10 M	0111 0710 1406 1912	0423 1020 1655 2223	1.8F 1.9E 1.3F 1.8E	25 Tu	0028 0634 1335 1841	0314 0947 1547 2154	1.9F 2.1E 1.4F 2.0E	10 Th	0222 0811 1514 2020	0527 1126 1759 2333	1.8F 1.9E 1.3F 1.7E	25 F	0207 0802 1458 2016	0457 1116 1730 2330	2.2F 2.4E 1.8F 2.3E	11 Tu	0159 0755 1455 1958	0510 1109 1740 2310	1.9F 2.0E 1.3F 1.8E	26 W	0124 0728 1430 1936	0413 1041 1648 2251	2.1F 2.2E 1.5F 2.1E	11 F	0307 0852 1555 2103	0558 1211 1828	1.8F 2.0E 1.4F	26 Sa	0302 0853 1545 2109	0548 1209 1815	2.3F 2.5E 2.0F	12 W	0245 0837 1540 2042	0545 1156 1815 2359	1.9F 2.0E 1.3F 1.7E	27 Th	0220 0820 1520 2030	0508 1137 1740 2347	2.3F 2.4E 1.7F 2.2E	12 Sa	0349 0932 1634 2145	0021 0628 1254 1853	1.8E 1.9F 2.1E 1.5F	27 Su	0354 0942 1631 2231	0027 0636 1300 1901	2.4E 2.4F 2.6E 2.1F	13 Th	0328 0918 1622 2125	0618 1238 1846	1.9F 2.0E 1.3F	28 F	0313 0912 1608 2124	0559 1229 1831	2.4F 2.5E 1.9F	13 Su	0429 1012 1710 2227	0104 0659 1333 1925	1.8E 1.9F 2.1E 1.5F	28 M	0445 1031 1716 2253	0120 0723 1348 1947	2.5E 2.3F 2.6E 2.1F	14 F	0409 0958 1702 2208	0042 0646 1320 1915	1.7E 1.9F 2.1E 1.4F	29 Sa	0406 1003 1655 2218	0043 0649 1321 1918	2.4E 2.5F 2.6E 2.0F	14 M	0508 1051 1746 2309	0145 0738 1410 2002	1.9E 1.8F 2.1E 1.6F						15 Sa	0448 1038 1741 2252	0127 0722 1359 1951	1.8E 1.9F 2.1E 1.4F	30 Su	0457 1053 1742 2313	0137 0738 1410 2010	2.4E 2.4F 2.6E 2.0F	15 Tu	0548 1130 1822 2351	0223 0819 1446 2045	1.9E 1.8F 2.1E 1.6F										31 M	0550 1143 1831	0228 0831 1457 2104	2.4E 2.3F 2.6E 2.0F																																																																																																								
8 Sa	0524 1214 1729	0227 0839 1502 2049	1.7F 1.9E 1.3F 1.9E	23 Su	0436 1138 1643 2333	1.7F 1.8E 1.2F 1.8E	8 Tu	0042 0641 1340 1846	0357 0953 1632 2157	1.6F 1.8E 1.1F 1.6E	23 W	0007 0611 1312 1822	0249 0924 1528 2138	1.9F 2.1E 1.3F 2.0E	9 Su	0020 0620 1312 1823	0330 0931 1606 2138	1.8F 1.9E 1.2F 1.8E	24 M	0536 1238 1743	1.8F 1.9E 1.2F 1.9E	9 W	0134 0728 1430 1935	0448 1042 1717 2246	1.7F 1.9E 1.2F 1.7E	24 Th	0108 0708 1407 1921	0357 1019 1635 2235	2.0F 2.2E 1.6F 2.1E	10 M	0111 0710 1406 1912	0423 1020 1655 2223	1.8F 1.9E 1.3F 1.8E	25 Tu	0028 0634 1335 1841	0314 0947 1547 2154	1.9F 2.1E 1.4F 2.0E	10 Th	0222 0811 1514 2020	0527 1126 1759 2333	1.8F 1.9E 1.3F 1.7E	25 F	0207 0802 1458 2016	0457 1116 1730 2330	2.2F 2.4E 1.8F 2.3E	11 Tu	0159 0755 1455 1958	0510 1109 1740 2310	1.9F 2.0E 1.3F 1.8E	26 W	0124 0728 1430 1936	0413 1041 1648 2251	2.1F 2.2E 1.5F 2.1E	11 F	0307 0852 1555 2103	0558 1211 1828	1.8F 2.0E 1.4F	26 Sa	0302 0853 1545 2109	0548 1209 1815	2.3F 2.5E 2.0F	12 W	0245 0837 1540 2042	0545 1156 1815 2359	1.9F 2.0E 1.3F 1.7E	27 Th	0220 0820 1520 2030	0508 1137 1740 2347	2.3F 2.4E 1.7F 2.2E	12 Sa	0349 0932 1634 2145	0021 0628 1254 1853	1.8E 1.9F 2.1E 1.5F	27 Su	0354 0942 1631 2231	0027 0636 1300 1901	2.4E 2.4F 2.6E 2.1F	13 Th	0328 0918 1622 2125	0618 1238 1846	1.9F 2.0E 1.3F	28 F	0313 0912 1608 2124	0559 1229 1831	2.4F 2.5E 1.9F	13 Su	0429 1012 1710 2227	0104 0659 1333 1925	1.8E 1.9F 2.1E 1.5F	28 M	0445 1031 1716 2253	0120 0723 1348 1947	2.5E 2.3F 2.6E 2.1F	14 F	0409 0958 1702 2208	0042 0646 1320 1915	1.7E 1.9F 2.1E 1.4F	29 Sa	0406 1003 1655 2218	0043 0649 1321 1918	2.4E 2.5F 2.6E 2.0F	14 M	0508 1051 1746 2309	0145 0738 1410 2002	1.9E 1.8F 2.1E 1.6F						15 Sa	0448 1038 1741 2252	0127 0722 1359 1951	1.8E 1.9F 2.1E 1.4F	30 Su	0457 1053 1742 2313	0137 0738 1410 2010	2.4E 2.4F 2.6E 2.0F	15 Tu	0548 1130 1822 2351	0223 0819 1446 2045	1.9E 1.8F 2.1E 1.6F										31 M	0550 1143 1831	0228 0831 1457 2104	2.4E 2.3F 2.6E 2.0F																																																																																																																							
9 Su	0020 0620 1312 1823	0330 0931 1606 2138	1.8F 1.9E 1.2F 1.8E	24 M	0536 1238 1743	1.8F 1.9E 1.2F 1.9E	9 W	0134 0728 1430 1935	0448 1042 1717 2246	1.7F 1.9E 1.2F 1.7E	24 Th	0108 0708 1407 1921	0357 1019 1635 2235	2.0F 2.2E 1.6F 2.1E	10 M	0111 0710 1406 1912	0423 1020 1655 2223	1.8F 1.9E 1.3F 1.8E	25 Tu	0028 0634 1335 1841	0314 0947 1547 2154	1.9F 2.1E 1.4F 2.0E	10 Th	0222 0811 1514 2020	0527 1126 1759 2333	1.8F 1.9E 1.3F 1.7E	25 F	0207 0802 1458 2016	0457 1116 1730 2330	2.2F 2.4E 1.8F 2.3E	11 Tu	0159 0755 1455 1958	0510 1109 1740 2310	1.9F 2.0E 1.3F 1.8E	26 W	0124 0728 1430 1936	0413 1041 1648 2251	2.1F 2.2E 1.5F 2.1E	11 F	0307 0852 1555 2103	0558 1211 1828	1.8F 2.0E 1.4F	26 Sa	0302 0853 1545 2109	0548 1209 1815	2.3F 2.5E 2.0F	12 W	0245 0837 1540 2042	0545 1156 1815 2359	1.9F 2.0E 1.3F 1.7E	27 Th	0220 0820 1520 2030	0508 1137 1740 2347	2.3F 2.4E 1.7F 2.2E	12 Sa	0349 0932 1634 2145	0021 0628 1254 1853	1.8E 1.9F 2.1E 1.5F	27 Su	0354 0942 1631 2231	0027 0636 1300 1901	2.4E 2.4F 2.6E 2.1F	13 Th	0328 0918 1622 2125	0618 1238 1846	1.9F 2.0E 1.3F	28 F	0313 0912 1608 2124	0559 1229 1831	2.4F 2.5E 1.9F	13 Su	0429 1012 1710 2227	0104 0659 1333 1925	1.8E 1.9F 2.1E 1.5F	28 M	0445 1031 1716 2253	0120 0723 1348 1947	2.5E 2.3F 2.6E 2.1F	14 F	0409 0958 1702 2208	0042 0646 1320 1915	1.7E 1.9F 2.1E 1.4F	29 Sa	0406 1003 1655 2218	0043 0649 1321 1918	2.4E 2.5F 2.6E 2.0F	14 M	0508 1051 1746 2309	0145 0738 1410 2002	1.9E 1.8F 2.1E 1.6F						15 Sa	0448 1038 1741 2252	0127 0722 1359 1951	1.8E 1.9F 2.1E 1.4F	30 Su	0457 1053 1742 2313	0137 0738 1410 2010	2.4E 2.4F 2.6E 2.0F	15 Tu	0548 1130 1822 2351	0223 0819 1446 2045	1.9E 1.8F 2.1E 1.6F										31 M	0550 1143 1831	0228 0831 1457 2104	2.4E 2.3F 2.6E 2.0F																																																																																																																																						
10 M	0111 0710 1406 1912	0423 1020 1655 2223	1.8F 1.9E 1.3F 1.8E	25 Tu	0028 0634 1335 1841	0314 0947 1547 2154	1.9F 2.1E 1.4F 2.0E	10 Th	0222 0811 1514 2020	0527 1126 1759 2333	1.8F 1.9E 1.3F 1.7E	25 F	0207 0802 1458 2016	0457 1116 1730 2330	2.2F 2.4E 1.8F 2.3E	11 Tu	0159 0755 1455 1958	0510 1109 1740 2310	1.9F 2.0E 1.3F 1.8E	26 W	0124 0728 1430 1936	0413 1041 1648 2251	2.1F 2.2E 1.5F 2.1E	11 F	0307 0852 1555 2103	0558 1211 1828	1.8F 2.0E 1.4F	26 Sa	0302 0853 1545 2109	0548 1209 1815	2.3F 2.5E 2.0F	12 W	0245 0837 1540 2042	0545 1156 1815 2359	1.9F 2.0E 1.3F 1.7E	27 Th	0220 0820 1520 2030	0508 1137 1740 2347	2.3F 2.4E 1.7F 2.2E	12 Sa	0349 0932 1634 2145	0021 0628 1254 1853	1.8E 1.9F 2.1E 1.5F	27 Su	0354 0942 1631 2231	0027 0636 1300 1901	2.4E 2.4F 2.6E 2.1F	13 Th	0328 0918 1622 2125	0618 1238 1846	1.9F 2.0E 1.3F	28 F	0313 0912 1608 2124	0559 1229 1831	2.4F 2.5E 1.9F	13 Su	0429 1012 1710 2227	0104 0659 1333 1925	1.8E 1.9F 2.1E 1.5F	28 M	0445 1031 1716 2253	0120 0723 1348 1947	2.5E 2.3F 2.6E 2.1F	14 F	0409 0958 1702 2208	0042 0646 1320 1915	1.7E 1.9F 2.1E 1.4F	29 Sa	0406 1003 1655 2218	0043 0649 1321 1918	2.4E 2.5F 2.6E 2.0F	14 M	0508 1051 1746 2309	0145 0738 1410 2002	1.9E 1.8F 2.1E 1.6F						15 Sa	0448 1038 1741 2252	0127 0722 1359 1951	1.8E 1.9F 2.1E 1.4F	30 Su	0457 1053 1742 2313	0137 0738 1410 2010	2.4E 2.4F 2.6E 2.0F	15 Tu	0548 1130 1822 2351	0223 0819 1446 2045	1.9E 1.8F 2.1E 1.6F										31 M	0550 1143 1831	0228 0831 1457 2104	2.4E 2.3F 2.6E 2.0F																																																																																																																																																					
11 Tu	0159 0755 1455 1958	0510 1109 1740 2310	1.9F 2.0E 1.3F 1.8E	26 W	0124 0728 1430 1936	0413 1041 1648 2251	2.1F 2.2E 1.5F 2.1E	11 F	0307 0852 1555 2103	0558 1211 1828	1.8F 2.0E 1.4F	26 Sa	0302 0853 1545 2109	0548 1209 1815	2.3F 2.5E 2.0F	12 W	0245 0837 1540 2042	0545 1156 1815 2359	1.9F 2.0E 1.3F 1.7E	27 Th	0220 0820 1520 2030	0508 1137 1740 2347	2.3F 2.4E 1.7F 2.2E	12 Sa	0349 0932 1634 2145	0021 0628 1254 1853	1.8E 1.9F 2.1E 1.5F	27 Su	0354 0942 1631 2231	0027 0636 1300 1901	2.4E 2.4F 2.6E 2.1F	13 Th	0328 0918 1622 2125	0618 1238 1846	1.9F 2.0E 1.3F	28 F	0313 0912 1608 2124	0559 1229 1831	2.4F 2.5E 1.9F	13 Su	0429 1012 1710 2227	0104 0659 1333 1925	1.8E 1.9F 2.1E 1.5F	28 M	0445 1031 1716 2253	0120 0723 1348 1947	2.5E 2.3F 2.6E 2.1F	14 F	0409 0958 1702 2208	0042 0646 1320 1915	1.7E 1.9F 2.1E 1.4F	29 Sa	0406 1003 1655 2218	0043 0649 1321 1918	2.4E 2.5F 2.6E 2.0F	14 M	0508 1051 1746 2309	0145 0738 1410 2002	1.9E 1.8F 2.1E 1.6F						15 Sa	0448 1038 1741 2252	0127 0722 1359 1951	1.8E 1.9F 2.1E 1.4F	30 Su	0457 1053 1742 2313	0137 0738 1410 2010	2.4E 2.4F 2.6E 2.0F	15 Tu	0548 1130 1822 2351	0223 0819 1446 2045	1.9E 1.8F 2.1E 1.6F										31 M	0550 1143 1831	0228 0831 1457 2104	2.4E 2.3F 2.6E 2.0F																																																																																																																																																																					
12 W	0245 0837 1540 2042	0545 1156 1815 2359	1.9F 2.0E 1.3F 1.7E	27 Th	0220 0820 1520 2030	0508 1137 1740 2347	2.3F 2.4E 1.7F 2.2E	12 Sa	0349 0932 1634 2145	0021 0628 1254 1853	1.8E 1.9F 2.1E 1.5F	27 Su	0354 0942 1631 2231	0027 0636 1300 1901	2.4E 2.4F 2.6E 2.1F	13 Th	0328 0918 1622 2125	0618 1238 1846	1.9F 2.0E 1.3F	28 F	0313 0912 1608 2124	0559 1229 1831	2.4F 2.5E 1.9F	13 Su	0429 1012 1710 2227	0104 0659 1333 1925	1.8E 1.9F 2.1E 1.5F	28 M	0445 1031 1716 2253	0120 0723 1348 1947	2.5E 2.3F 2.6E 2.1F	14 F	0409 0958 1702 2208	0042 0646 1320 1915	1.7E 1.9F 2.1E 1.4F	29 Sa	0406 1003 1655 2218	0043 0649 1321 1918	2.4E 2.5F 2.6E 2.0F	14 M	0508 1051 1746 2309	0145 0738 1410 2002	1.9E 1.8F 2.1E 1.6F						15 Sa	0448 1038 1741 2252	0127 0722 1359 1951	1.8E 1.9F 2.1E 1.4F	30 Su	0457 1053 1742 2313	0137 0738 1410 2010	2.4E 2.4F 2.6E 2.0F	15 Tu	0548 1130 1822 2351	0223 0819 1446 2045	1.9E 1.8F 2.1E 1.6F										31 M	0550 1143 1831	0228 0831 1457 2104	2.4E 2.3F 2.6E 2.0F																																																																																																																																																																																					
13 Th	0328 0918 1622 2125	0618 1238 1846	1.9F 2.0E 1.3F	28 F	0313 0912 1608 2124	0559 1229 1831	2.4F 2.5E 1.9F	13 Su	0429 1012 1710 2227	0104 0659 1333 1925	1.8E 1.9F 2.1E 1.5F	28 M	0445 1031 1716 2253	0120 0723 1348 1947	2.5E 2.3F 2.6E 2.1F	14 F	0409 0958 1702 2208	0042 0646 1320 1915	1.7E 1.9F 2.1E 1.4F	29 Sa	0406 1003 1655 2218	0043 0649 1321 1918	2.4E 2.5F 2.6E 2.0F	14 M	0508 1051 1746 2309	0145 0738 1410 2002	1.9E 1.8F 2.1E 1.6F						15 Sa	0448 1038 1741 2252	0127 0722 1359 1951	1.8E 1.9F 2.1E 1.4F	30 Su	0457 1053 1742 2313	0137 0738 1410 2010	2.4E 2.4F 2.6E 2.0F	15 Tu	0548 1130 1822 2351	0223 0819 1446 2045	1.9E 1.8F 2.1E 1.6F										31 M	0550 1143 1831	0228 0831 1457 2104	2.4E 2.3F 2.6E 2.0F																																																																																																																																																																																																					
14 F	0409 0958 1702 2208	0042 0646 1320 1915	1.7E 1.9F 2.1E 1.4F	29 Sa	0406 1003 1655 2218	0043 0649 1321 1918	2.4E 2.5F 2.6E 2.0F	14 M	0508 1051 1746 2309	0145 0738 1410 2002	1.9E 1.8F 2.1E 1.6F																																																																																																																																																																																																																																																			
15 Sa	0448 1038 1741 2252	0127 0722 1359 1951	1.8E 1.9F 2.1E 1.4F	30 Su	0457 1053 1742 2313	0137 0738 1410 2010	2.4E 2.4F 2.6E 2.0F	15 Tu	0548 1130 1822 2351	0223 0819 1446 2045	1.9E 1.8F 2.1E 1.6F																																																																																																																																																																																																																																																			
				31 M	0550 1143 1831	0228 0831 1457 2104	2.4E 2.3F 2.6E 2.0F																																																																																																																																																																																																																																																							

THE NARROWS, NEW YORK HARBOR, NEW YORK, 1983

53

F-Flood, Dir. 340° True E-Ebb, Dir. 160° 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	0535 1118 1802 2344	0209 0809 1434 2036	2.5E 2.2F 2.5E 2.1F	16 W	0527 1101 1416 1742 2012 2324	2.1E 1.8F 2.1E 1.8F	1 F	0007 0700 1222 1904	0319 0923 1533 2143	2.3E 1.6F 2.0E 1.9F	16 Sa	0639 1158 1824	0300 0900 1505 2120	2.3E 1.6F 2.0E 2.0F
2 W	0627 1205 1849	0257 0900 1517 2129	2.4E 2.0F 2.4E 2.0F	17 Th	0609 1141 1453 1816	2.1E 1.7F 2.1E 1.8F	2 Sa	0055 0755 1307 1956	0405 1014 1618 2234	2.1E 1.4F 1.8E 1.7F	17 Su	0033 0733 1247 1916	0345 0952 1550 2215	2.2E 1.5F 1.9E 1.9F
3 Th	0035 0722 1251 1939	0345 0951 1603 2220	2.3E 1.7F 2.2E 1.9F	18 F	0008 0656 1222 1855	2.1E 1.6F 2.0E 1.8F	3 Su	0143 0852 1355 2052	0456 1105 1709 2323	1.8E 1.2F 1.6E 1.6F	18 M	0124 0832 1339 2019	0436 1047 1646 2308	2.1E 1.4F 1.8E 1.9F
4 F	0125 0820 1338 2033	0434 1045 1651 2311	2.1E 1.5F 1.9E 1.8F	19 Sa	0054 0750 1307 1942	2.0E 1.5F 1.9E 1.8F	4 M	0233 0949 1448 2149	0554 1158 1810 2349	1.7E 1.1F 1.4E	19 Tu	0219 0933 1437 2128	0537 1142 1755	2.0E 1.4F 1.7E
5 Sa	0216 0920 1427 2128	0528 1136 1746	1.8E 1.3F 1.7E	20 Su	0144 0850 1355 2040	1.9E 1.4F 1.7E 1.8F	5 Tu	0327 1045 1546 2246	0014 0654 1252 1912	1.4F 1.6E 1.0F 1.4E	20 W	0319 1032 1542 2235	0645 1241 1906	1.8E 1.9E 1.4F 1.7E
6 Su	0310 1019 1520 2223	0002 0631 1232 1846	1.6F 1.7E 1.1F 1.5E	21 M	0239 0952 1451 2143	1.8E 1.3F 1.7E	6 W	0425 1139 1649 2342	0111 0755 1404 2010	1.3F 1.6E 1.0F 1.4E	21 Th	0423 1128 1650 2340	0107 0748 1345 2011	1.7F 2.0E 1.4F 1.9E
7 M	0409 1117 1619 2318	0055 0733 1333 1947	1.5F 1.6E 1.0F 1.5E	22 Tu	0340 1052 1555 2248	1.8F 1.8E 1.7E	7 Th	0523 1230 1748	0214 0846 1517 2101	1.3F 1.7E 1.1F 1.5E	22 F	0527 1223 1755	0214 0846 1501 2109	1.7F 2.1E 1.6F 2.0E
8 Tu	0509 1214 1721	0201 0831 1500 2041	1.4F 1.6E 1.0F 1.5E	23 W	0445 1152 1703 2353	1.8F 1.9E 1.3F 1.8E	8 F	0036 0616 1318 1840	0330 0933 1612 2150	1.4F 1.8E 1.3F 1.7E	23 Sa	0042 0625 1316 1853	0331 0938 1607 2203	1.8F 2.2E 1.8F 2.2E
9 W	0013 0605 1308 1819	0318 0921 1602 2132	1.4F 1.7E 1.1F 1.6E	24 Th	0549 1249 1808	1.8F 2.1E 2.0E	9 Sa	0128 0704 1403 1927	0422 1016 1655 2236	1.5F 1.9E 1.5F 1.8E	24 Su	0141 0718 1406 1946	0434 1029 1700 2258	1.9F 2.3E 2.0F 2.3E
10 Th	0106 0655 1357 1910	0415 1008 1651 2219	1.5F 1.8E 1.2F 1.6E	25 F	0055 0648 1343 1907	1.9F 2.2E 1.7F 2.2E	10 Su	0216 0747 1444 2009	0501 1101 1723 2323	1.6F 1.9E 1.6F 1.9E	25 M	0236 0807 1453 2035	0524 1120 1745 2351	2.0F 2.3E 2.2F 2.4E
11 F	0157 0740 1442 1955	0458 1055 1730 2308	1.6F 1.9E 1.4F 1.7E	26 Sa	0155 0742 1433 2001	2.1F 2.3E 1.9F 2.3E	11 M	0302 0828 1522 2051	0536 1143 1752 2344	1.7F 2.0E 1.8F	26 Tu	0327 0853 1538 2123	0608 1209 1824	2.0F 2.3E 2.2F
12 Sa	0243 0822 1522 2038	0533 1138 1759 2353	1.7F 2.0E 1.5F 1.8E	27 Su	0250 0831 1520 2053	2.2F 2.4E 2.1F	12 Tu	0345 0909 1557 2132	0009 0609 1226 1825	2.1E 1.8F 2.1E 1.9F	27 W	0416 0938 1621 2209	0040 0647 1255 1901	2.4E 1.9F 2.2E 2.2F
13 Su	0327 0902 1600 2119	0605 1221 1824	1.8F 2.0E 1.6F	28 M	0342 0919 1604 2143	2.4E 2.2F 2.4E 2.2F	13 W	0426 0949 1631 2214	0052 0647 1307 1902	2.2E 1.8F 2.1E 2.0F	28 Th	0503 1023 1703 2255	0128 0727 1341 1940	2.4E 1.7F 2.2E 2.1F
14 M	0408 0942 1635 2200	0036 0636 1302 1857	2.0E 1.8F 2.1E 1.7F	29 Tu	0431 1006 1648 2232	2.5E 2.1F 2.4E 2.2F	14 Th	0507 1030 1705 2258	0133 0726 1347 1944	2.2E 1.7F 2.1E 2.1F	29 F	0550 1108 1746 2340	0212 0809 1422 2023	2.3E 1.6F 2.0E 2.0F
15 Tu	0447 1021 1709 2242	0120 0712 1339 1933	2.0E 1.8F 2.1E 1.8F	30 W	0519 1051 1732 2320	2.5E 2.0F 2.4E 2.1F	15 F	0551 1113 1742 2344	0217 0811 1426 2031	2.3E 1.7F 2.1E 2.0F	30 Sa	0638 1153 1831	0255 0854 1505 2109	2.2E 1.4F 1.9E 1.8F
				31 Th	0608 1137 1816	2.4E 1.8F 2.2E 2.0F								

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

F-Flood, Dir. 305° True E-Ebb, Dir. 140° 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	0012 0651 1233 1846	1.8E 1.5F 1.5E 1.7F	0316 0932 1529 2148	1.8E 1.5F 1.5E 1.7F	16 M	0621 1206 1818	2.0E 1.6F 1.8F	0254 0913 1509 2132	2.0E 1.6F 1.7E 1.8F	1 W	0104 0752 1342 1951	1.7E 1.4F 1.4E 1.5F	0415 1038 1637 2252	1.7E 1.4F 1.4E 1.5F	16 Th	0126 0815 1414 2032	1.9E 1.6F 1.5E 1.6F	0439 1105 1711 2327	1.9E 1.6F 1.5E 1.6F	
2 M	0055 0737 1321 1935	1.7E 1.4F 1.4E 1.6F	0403 1020 1618 2236	1.7E 1.4F 1.4E 1.6F	17 Tu	0035 0721 1309 1923	1.9E 1.5F 1.5E 1.7F	0348 1010 1611 2233	1.9E 1.5F 1.5E 1.7F	2 Th	0153 0842 1437 2050	1.7E 1.4F 1.4E 1.4F	0505 1132 1732 2347	1.7E 1.4F 1.4E 1.4F	17 F	0232 0918 1524 2146	1.8E 1.7F 1.8E 1.6E	0543 1209 1822	1.8E 1.7F 1.6E	
3 Tu	0143 0828 1415 2030	1.7E 1.3F 1.4E 1.5F	0452 1113 1712 2330	1.7E 1.3F 1.4E 1.5F	18 W	0138 0827 1420 2039	1.8E 1.3F 1.5E 1.6F	0450 1115 1720 2341	1.8E 1.3F 1.5E 1.6F	3 F	0246 0933 1535 2151	1.7E 1.5F 1.4E	0600 1225 1829	1.7E 1.5F 1.4E	18 Sa	0037 0340 1019 1631 2255	1.6F 1.8E 1.8F 1.7E	0037 0651 1314 1935	1.6F 1.8E 1.8F 1.7E	
4 W	0235 0923 1514 2131	1.6E 1.3F 1.3E	0547 1208 1809 2131	1.6E 1.3F 1.3E	19 Th	0247 0937 1536 2158	1.7E 1.5F 1.5E	0600 1225 1835	1.7E 1.5F 1.5E	4 Sa	0342 1025 1630 2251	1.4F 1.7E 1.6F 1.5E	0644 1253 1927	1.4F 1.7E 1.6F 1.5E	19 Su	0445 1117 1732 2359	1.6F 1.8E 1.9F 1.8E	0140 0757 1416 2042	1.6F 1.8E 1.9F 1.8E	
5 Th	0332 1019 1615 2234	1.4F 1.6E 1.4F 1.4E	0628 1304 1911	1.4F 1.6E 1.4E	20 F	0400 1044 1649 2313	1.5F 1.7E 1.6E	0652 1335 1950	1.5F 1.6F 1.6E	5 Su	0437 1114 1723 2347	1.4F 1.7E 1.7F 1.6E	0140 0747 1411 2020	1.4F 1.7E 1.7F 1.6E	20 M	0546 1212 1828	1.9E 2.0F 1.9E	0245 0856 1511 2138	1.6F 1.9E 2.0F 1.9E	
6 F	0430 1113 1712 2333	1.4F 1.6E 1.5F 1.4E	0741 1401 2010	1.4F 1.6E 1.4E	21 Sa	0509 1145 1754	1.8E 1.8F 1.7E	0821 1440 2101	1.8E 1.8F 1.7E	6 M	0530 1200 1812	1.5F 1.7E 1.8F 1.7E	0233 0837 1459 2111	1.5F 1.7E 1.8F 1.7E	21 Tu	0641 1302 1918	1.9E 2.0F 2.0E	0340 0947 1604 2229	1.6F 1.9E 2.0F 2.0E	
7 Sa	0526 1203 1805	1.5F 1.7E 1.6F 1.6E	0822 1455 2104	1.5F 1.7E 1.6F 1.6E	22 Su	0619 1241 1851	1.9E 1.9F 1.9E	0308 0923 1537 2200	1.7F 1.9E 1.9F 1.9E	7 Tu	0619 1244 1857	1.5F 1.8E 1.9F 1.8E	0323 0923 1546 2159	1.5F 1.8E 1.9F 1.8E	22 W	0150 0732 1348 2005	1.6F 1.8E 2.1F 2.0E	0432 1038 1647 2316	1.6F 1.8E 2.1F 2.0E	
8 Su	0617 1248 1852	1.5F 1.7E 1.7F 1.7E	0315 0922 1542 2153	1.5F 1.7E 1.7F 1.7E	23 M	0118 0708 1331 1943	1.7F 1.9E 2.0F 2.0E	0405 1016 1629 2251	1.7F 1.9E 2.0F 2.0E	8 W	0127 0706 1325 1940	1.6F 1.8E 2.0F 2.0E	0411 1010 1629 2245	1.6F 1.8E 2.0F 2.0E	23 Th	0238 0819 1431 2047	1.6F 1.8E 2.0F 2.0E	0519 1122 1733 2357	1.6F 1.8E 2.0F 2.0E	
9 M	0703 1329 1934	1.6F 1.8E 1.8F 1.8E	0402 1008 1625 2234	1.6F 1.8E 1.8F 1.8E	24 Tu	0211 0759 1417 2029	1.8F 1.9E 2.1F 2.1E	0456 1105 1716 2339	1.8F 1.9E 2.1F 2.1E	9 Th	0213 0750 1405 2022	1.6F 1.8E 2.0F 2.0E	0457 1053 1714 2329	1.6F 1.8E 2.0F 2.0E	24 F	0323 0902 1511 2125	1.6F 1.7E 1.9F	0602 1200 1809	1.6F 1.7E 1.9F	
10 Tu	0745 1406 2013	1.6F 1.8E 1.9F 1.9E	0445 1048 1705 2314	1.6F 1.8E 1.9F 1.9E	25 W	0259 0845 1459 2111	1.8F 1.9E 2.1F	0542 1148 1757 2111	1.8F 1.9E 2.1F	10 F	0257 0835 1446 2104	1.6F 1.8E 2.1F	0543 1136 1757	1.6F 1.8E 2.1F	25 Sa	0034 0404 0942 1549 2201	2.0E 1.5F 1.6E 1.9F	0034 0641 1238 1850	2.0E 1.5F 1.6E 1.9F	
11 W	0825 1441 2050	1.7F 1.9E 2.0F 2.0E	0528 1127 1744 2355	1.7F 1.9E 2.0F 2.0E	26 Th	0343 0927 1539 2150	2.1E 1.7F 1.8E 2.0F	0620 1227 1838 2150	2.1E 1.7F 1.8E 2.0F	11 Sa	0342 0920 1530 2149	2.1E 1.6F 1.8E 2.1F	0629 1223 1842 2149	2.1E 1.6F 1.8E 2.1F	26 Su	0442 1020 1625 2236	1.9E 1.5F 1.8F	0107 0718 1314 1926	1.9E 1.5F 1.5E 1.8F	
12 Th	0903 1516 2128	1.7F 1.9E 2.0F	0608 1205 1823	1.7F 1.9E 2.0F	27 F	0425 1006 1616 2227	2.0E 1.6F 1.7E 1.9F	0657 1302 1914 2227	2.0E 1.6F 1.7E 1.9F	12 Su	0429 1009 1617 2237	2.1E 1.6F 1.8E 2.0F	0659 1310 1933 2237	2.1E 1.6F 1.8E 2.0F	27 M	0519 1058 1702 2311	1.8E 1.4F 1.5E 1.7F	0142 0759 1351 2004	1.8E 1.4F 1.5E 1.7F	
13 F	0942 1553 2208	2.1E 1.7F 1.9E 2.0F	0650 1246 1905	2.1E 1.7F 1.9E 2.0F	28 Sa	0504 1043 1652 2303	1.9E 1.5F 1.8F	0742 1338 1952 2303	1.9E 1.5F 1.8F	13 M	0519 1102 1710 2328	2.1E 1.6F 1.9F	0146 0807 1402 2024 2328	2.1E 1.6F 1.7E 1.9F	28 Tu	0556 1138 1741 2348	1.8E 1.4F 1.6F	0218 0837 1432 2045	1.8E 1.4F 1.4E 1.6F	
14 Sa	0443 1025 1635 2252	2.1E 1.7F 1.8E 2.0F	0734 1329 1950	2.1E 1.7F 1.8E 2.0F	29 Su	0543 1122 1729 2339	1.9E 1.5F 1.7F	0208 0822 1416 2032 2339	1.9E 1.5F 1.5E 1.7F	14 Tu	0613 1200 1810	2.0E 1.6F 1.8F	0241 0900 1459 2120 2120	2.0E 1.6F 1.6E 1.8F	29 W	0634 1221 1825	1.8E 1.4F 1.6F	0300 0919 1515 2132	1.8E 1.4F 1.4E 1.6F	
15 Su	0525 1112 1722 2340	2.1E 1.6F 1.8E 1.9F	0203 0821 1416 2037	2.1E 1.6F 1.8E 1.9F	30 M	0623 1203 1811	1.8E 1.4F 1.6F	0247 0903 1457 2114	1.8E 1.4F 1.4E 1.6F	15 W	0712 1305 1918	1.9E 1.6F 1.6E 1.7F	0337 1001 1602 2221	1.9E 1.6F 1.6E 1.7F	30 Th	0029 0716 1308 1915	1.8E 1.5F 1.4E 1.5F	0341 1006 1604 2217	1.8E 1.5F 1.4E 1.5F	
					31 Tu	0019 0705 1250 1858	1.8E 1.4F 1.4E 1.5F	0328 0949 1546 2201	1.8E 1.4F 1.4E 1.5F											

F-Flood, Dir. 305° True E-Ebb, Dir. 125° 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	0045 0742 1324 2003	0422 1024 1650 2243	2.0E 1.4F 1.8E 1.3F	16 W	0011 0721 1238 1929	0355 0954 1613 2205	1.6E 1.0F 1.4E 1.1F	1 F	0206 0858 1350 2102	0534 1118 1741 2346	1.5E 0.8F 1.5E 1.1F	16 Sa	0130 0826 1307 2025	0459 1044 1700 2315	1.5E 0.8F 1.6E 1.3F
2 W	0135 0831 1401 2050	0510 1109 1733 2329	1.8E 1.2F 1.7E 1.2F	17 Th	0052 0800 1307 2006	0433 1027 1646 2247	1.5E 1.0F 1.4E 1.1F	2 Sa	0252 0948 1422 2151	0623 1159 1826	1.3E 0.6F 1.3E	17 Su	0222 0917 1348 2117	0548 1129 1746	1.4E 0.7F 1.5E
3 Th	0226 0922 1437 2138	0601 1151 1819	1.6E 1.0F 1.5E	18 F	0137 0842 1338 2048	0514 1106 1722 2332	1.5E 0.9F 1.4E 1.1F	3 Su	0341 1045 1456 2246	0032 0714 1246 1915	0.9F 1.1E 0.4F 1.2E	18 M	0319 1017 1436 2217	0608 1224 1843	1.3F 1.3E 0.6F 1.5E
4 F	0317 1016 1513 2231	0016 0650 1327 1905	1.1F 1.4E 0.7F 1.4E	19 Sa	0226 0931 1414 2138	0603 1151 1808	1.3E 0.8F 1.4E	4 M	0435 1149 1538 2348	0126 0814 1337 2015	0.8F 1.0E 0.3F 1.1E	19 Tu	0424 1125 1535 2325	0757 1327 1954	1.2E 0.5F 1.4E
5 Sa	0413 1115 1550 2329	0111 0748 1327 1959	0.9F 1.2E 0.5F 1.2E	20 Su	0323 1027 1457 2235	0023 0656 1238 1859	1.1F 1.2E 0.7F 1.4E	5 Tu	0537 1440 2120	0225 0919 1440 2120	0.7F 0.9E 1.0E	20 W	0535 1237 1650	0218 0908 2110	1.1F 1.2E 1.4E
6 Su	0514 1223 1632	0208 0852 1420 2100	0.8F 1.0E 0.4F 1.1E	21 M	0428 1133 1549 2341	0803 1338 2003	1.1E 0.5F 1.4E	6 W	0643 1551 2226	0331 1026 1551 2226	0.6F 0.9E 1.1E	21 Th	0646 1344 1817	1019 1555 2226	1.2E 0.6F 1.4E
7 M	0623 1336 1726	0311 0958 1524 2203	0.7F 0.9E 0.3F 1.1E	22 Tu	0544 1247 1655	0232 0918 2120	1.0F 1.1E 1.4E	7 Th	0156 0745 1458 1905	0439 1122 1655 2323	0.6F 1.0E 0.3F 1.1E	22 F	0148 0751 1443 1940	0441 1120 1706 2333	1.1F 1.4E 0.7F 1.6E
8 Tu	0137 0733 1444 1833	0420 1105 1636 2308	0.6F 0.9E 0.3F 1.1E	23 W	0052 0702 1359 1817	0343 1033 1603 2235	1.0F 1.1E 0.5F 1.5E	8 F	0252 0837 1539 2011	0536 1209 1750	0.7F 1.1E 0.5F	23 Sa	0254 0847 1534 2051	0544 1215 1806	1.1F 1.5E 0.9F
9 W	0237 0834 1538 1942	0527 1202 1737	0.7F 1.0E 0.3F	24 Th	0203 0814 1502 1940	0457 1140 1717 2343	1.1F 1.3E 0.6F 1.6E	9 Sa	0340 0920 1614 2105	0018 0621 1254 1834	1.2E 0.8F 1.2E 0.6F	24 Su	0353 0936 1620 2153	0638 1304 1903	1.7E 1.1F 1.6E 1.1F
10 Th	0329 0925 1620 2041	0002 0621 1249 1825	1.2E 0.8F 1.1E 0.4F	25 F	0308 0914 1555 2054	0602 1238 1820	1.2F 1.5E 0.8F	10 Su	0423 0957 1646 2152	0059 0700 1329 1912	1.4E 0.9F 1.3E 0.8F	25 M	0447 1019 1703 2247	0126 0729 1347 1948	1.7E 1.1F 1.7E 1.3F
11 F	0415 1008 1655 2131	0049 0704 1331 1907	1.3E 0.9F 1.2E 0.5F	26 Sa	0406 1006 1642 2158	0044 0700 1327 1917	1.8E 1.3F 1.6E 1.0F	11 M	0503 1030 1717 2235	0142 0739 1402 1950	1.5E 0.9F 1.4E 0.9F	26 Tu	0536 1057 1745 2336	0215 0810 1430 2035	1.8E 1.1F 1.8E 1.3F
12 Sa	0455 1044 1726 2215	0132 0739 1408 1945	1.4E 0.9F 1.2E 0.7F	27 Su	0500 1052 1727 2254	0140 0749 1414 2007	1.9E 1.4F 1.7E 1.2F	12 Tu	0541 1100 1749 2317	0220 0811 1435 2026	1.5E 1.0F 1.5E 1.1F	27 W	0622 1132 1825	0302 0850 1511 2116	1.7E 1.0F 1.7E 1.3F
13 Su	0533 1116 1756 2254	0210 0814 1441 2021	1.5E 1.0F 1.3E 0.8F	28 M	0550 1133 1809 2346	0229 0835 1457 2053	1.9E 1.4F 1.8E 1.3F	13 W	0619 1129 1822 2359	0255 0846 1507 2104	1.6E 1.0F 1.5E 1.2F	28 Th	0707 1204 1906	0345 0930 1548 2156	1.6E 0.9F 1.7E 1.3F
14 M	0609 1144 1826 2333	0246 0849 1512 2055	1.5E 1.0F 1.4E 0.9F	29 Tu	0638 1211 1851	0317 0918 2136	1.9E 1.3F 1.8E 1.4F	14 Th	0658 1159 1858	0336 0925 1540 2145	1.6E 1.0F 1.6E 1.3F	29 F	0751 1235 1947	0428 1006 1628 2237	1.5E 0.8F 1.6E 1.2F
15 Tu	0644 1211 1856	0322 0918 1542 2128	1.6E 1.0F 1.4E 1.0F	30 W	0034 0724 1245 1934	0404 0959 1619 2220	1.8E 1.1F 1.7E 1.3F	15 F	0043 0740 1232 1939	0414 1001 1617 2228	1.6E 0.9F 1.6E 1.3F	30 Sa	0146 0835 1305 2030	0512 1045 1706 2318	1.3E 0.6F 1.5E 1.1F
				31 Th	0121 0811 1318 2017	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.

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

MAY				JUNE							
Day	Slack Water Time	Maximum Current Time	Vel.	Day	Slack Water Time	Maximum Current Time	Vel.	Day	Slack Water Time	Maximum Current Time	Vel.
	h.m.	h.m.	knots		h.m.	h.m.	knots		h.m.	h.m.	knots
1	0228	0557	1.2E	16	0219	0541	1.4E	1	0016	0016	0.9F
Su	0923	1125	0.5F	M	0907	1118	0.7F	W	0325	0704	1.0E
	1337	1747	1.3E		1333	1735	1.7E		1036	1228	0.4F
	2117				2104				1429	1856	1.1E
									2226		
2		0000	0.9F	17		0000	1.4F	2		0106	0.8F
M	0311	0646	1.1E	Tu	0316	0642	1.3E	Th	0409	0756	1.0E
	1015	1211	0.4F		1007	1214	0.6F		1129	1321	0.4F
	1413	1836	1.2E		1429	1836	1.6E		1524	1953	1.1E
	2208				2205				2322		
3		0049	0.8F	18		0101	1.3F	3		0157	0.7F
Tu	0359	0741	1.0E	W	0417	0745	1.3E	F	0456	0849	1.0E
	1114	1258	0.3F		1112	1319	0.6F		1222	1420	0.4F
	1457	1933	1.1E		1535	1946	1.5E		1629	2054	1.0E
	2305				2312						
4		0144	0.7F	19		0203	1.1F	4	0020	0252	0.7F
W	0452	0838	0.9E	Th	0520	0851	1.3E	Sa	0545	0940	1.0E
	1217	1402	0.3F		1219	1430	0.6F		1311	1520	0.5F
	1554	2038	1.0E		1653	2100	1.4E		1741	2153	1.1E
5	0007	0242	0.6F	20	0022	0312	1.1F	5	0118	0349	0.7F
Th	0549	0940	0.9E	F	0623	0956	1.4E	Su	0634	1031	1.1E
	1317	1505	0.3F		1322	1543	0.7F		1356	1615	0.6F
	1707	2141	1.0E		1817	2209	1.4E		1852	2251	1.1E
6	0109	0345	0.6F	21	0132	0418	1.0F	6	0213	0440	0.7F
F	0646	1035	1.0E	Sa	0721	1055	1.4E	M	0720	1114	1.2E
	1407	1608	0.4F		1419	1652	0.8F		1439	1708	0.8F
	1824	2242	1.1E		1936	2317	1.5E		1957	2342	1.2E
7	0206	0441	0.7F	22	0238	0520	1.0F	7	0305	0529	0.7F
Sa	0738	1124	1.1E	Su	0814	1150	1.5E	Tu	0804	1158	1.4E
	1450	1705	0.5F		1510	1753	1.0F		1520	1759	1.0F
	1933	2336	1.2E		2045				2057		
8	0258	0530	0.7F	23		0018	1.5E	8		0034	1.3E
Su	0822	1206	1.2E	M	0338	0613	0.9F	W	0354	0615	0.8F
	1527	1752	0.7F		0900	1238	1.6E		0847	1241	1.5E
	2033				1557	1844	1.1F		1601	1848	1.2F
					2144				2152		
9		0021	1.3E	24		0109	1.6E	9		0122	1.4E
M	0345	0615	0.8F	Tu	0432	0702	0.9F	Th	0442	0700	0.8F
	0902	1244	1.3E		0942	1323	1.7E		0929	1325	1.6E
	1603	1835	0.9F		1640	1932	1.2F		1644	1936	1.3F
	2125				2237				2244		
10		0107	1.4E	25		0158	1.5E	10		0210	1.5E
Tu	0429	0657	0.9F	W	0521	0745	0.8F	F	0529	0747	0.8F
	0938	1320	1.4E		1019	1404	1.7E		1012	1408	1.8E
	1638	1919	1.1F		1722	2016	1.3F		1728	2023	1.5F
	2213				2325				2336		
11		0151	1.5E	26		0244	1.5E	11		0256	1.5E
W	0511	0737	0.9F	Th	0607	0826	0.8F	Sa	0617	0835	0.9F
	1013	1359	1.6E		1053	1445	1.6E		1057	1451	1.8E
	1714	2000	1.2F		1803	2056	1.3F		1815	2112	1.6F
	2300										
12		0232	1.5E	27		0008	1.4E	12	0027	0347	1.6E
Th	0553	0818	0.9F	F	0650	0902	0.7F	Su	0706	0923	0.9F
	1048	1433	1.6E		1125	1523	1.6E		1144	1540	1.9E
	1752	2041	1.4F		1843	2135	1.2F		1904	2201	1.6F
	2347										
13		0313	1.6E	28		0048	1.3E	13	0119	0437	1.5E
F	0637	0866	0.9F	Sa	0732	0940	0.6F	M	0758	1013	0.8F
	1124	1514	1.7E		1156	1600	1.5E		1234	1631	1.8E
	1833	2126	1.5F		1923	2211	1.1F		1957	2254	1.6F
14	0035	0401	1.5E	29	0127	0449	1.2E	14	0211	0531	1.5E
Sa	0722	0942	0.9F	Su	0814	1018	0.5F	Tu	0852	1106	0.8F
	1203	1555	1.7E		1228	1637	1.4E		1329	1729	1.8E
	1919	2212	1.5F		2004	2251	1.1F		2053	2347	1.5F
15	0125	0450	1.5E	30	0205	0532	1.1E	15	0305	0629	1.5E
Su	0812	1025	0.8F	M	0858	1056	0.5F	W	0950	1203	0.8F
	1245	1644	1.7E		1303	1718	1.3E		1429	1829	1.7E
	2009	2303	1.5F		2048	2331	1.0F		2153		
				31	0243	0616	1.1E				
				Tu	0945	1141	0.4F				
					1342	1802	1.2E				
					2135						

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

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

JANUARY								FEBRUARY									
Day	Slack Water Time		Maximum Current Time Vel.		Day	Slack Water Time		Maximum Current Time Vel.		Day	Slack Water Time		Maximum Current Time Vel.				
	h.m.	h.m.	knots			h.m.	h.m.	knots			h.m.	h.m.	knots				
1		0552	3.1E		16	0028	0616	2.1E		1	0143	0707	1.4E	16	0151	0720	0.9E
Sa	1220	1845	2.9F		Su	1230	1901	1.9F		Tu	1403	2031	1.0F	W	1402	2019	0.6F
2	0051	0643	2.8E		17	0108	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		1332	0.3F	F		0848	*
											1734	2314	0.4E			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	1.2F
	2306					2305											
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.

F-Flood, Dir. 025° True E-Ebb, Dir. 190° 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	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	1559	0.3E												
3	0907	0407	0.4F	18	0612	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	0609	1238	1.3F	22	0608	1225	1.6F
M	1801			Tu	1710	2329	2.3E	Th	1923			F	1904		
8	0606	0001	1.7E	23	0537	1154	2.2F	8	0709	0110	1.5E	23	0706	0044	1.5E
Tu	1905	1243	1.6F	W	1824			F	2031	1406	1.2F	Sa	2020	1354	1.0F
9	0704	0059	1.8E	24	0646	0035	2.3E	9	0810	0204	1.3E	24	0802	0125	0.9E
W	2009	1352	1.6F	Th	1938	1313	2.2F	Sa	2138	1542	1.0F	Su	2205	1624	0.5F
10	0803	0153	1.8E	25	0755	0135	2.2E	10	0918	0254	1.1E	25		0112	0.3E
Th	2109	1505	1.5F	F	2050	1433	1.9F	Su	2256	1719	0.7F	M		0743	*
11	0902	0243	1.8E	26	0907	0232	1.9E							1348	0.3E
F	2205	1614	1.5F	Sa	2202	1603	1.6F	11	1139	0348	0.7E	26		0536	0.4F
12	1000	0339	1.7E	27	1030	0327	1.5E	M		1948	0.5F	Tu	0938	1502	0.9E
Sa	2258	1717	1.4F	Su	2322	1745	1.1F	Tu					2055	1502	0.9E
13	1057	0422	1.5E	28	1315	0415	0.9E		0101	0437	0.3E	27		0511	1.0F
Su	2350	1812	1.2F	M		1948	0.7F	W		0905	*	W		1600	1.4E
14	1201	0457	1.2E	29	0123	0811	0.3E	13	0833	1512	0.7E	28		0531	1.4F
M		1857	1.0F	Tu		1407	0.4E	W	2043			Th		1648	1.8E
15	0050	0559	0.8E		1840	2324	0.4F	14	1016	0349	0.8F	29		0606	1.7F
Tu	1341	2025	0.7F	30		0236	0.3F	Th	2225	1622	1.2E	F		1737	2.0E
				W		0611	0.4F						1152	2356	
					1037	1620	0.8E	15		0520	1.3F	30		0641	1.9F
					2214			F		1724	1.6E	Sa		1826	2.1E
				31		0637	0.9F		1119				1237		
				Th	1200	1736	1.2E		2340						

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.

120

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		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 2032	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 0818 1518 2056	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 0951 1553 2154	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 1036 1643 2250	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 1126 1733 2348	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 1221	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.

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

JULY

AUGUST

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	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		1221	0.4E	Tu	1747		
					2319				1713	2355	0.5F				
2	0241	0815	1.0F	17		0334	0.4F	2	0547	1200	0.9E	17		0036	1.6F
Sa	1504	2048	0.8E	Su	0807	1352	0.4E	Tu	1731	2353	1.1F	W	0626	1224	1.8E
					1937								1836		
3	0240	0731	0.6F	18		0157	0.8F	3	0611	1229	1.5E	18		0120	1.8F
Su	1354	1939	0.3E	M	0703	1254	1.0E	W	1813			Th	0721	1310	2.0E
					1905								1926		
4	0100	0536	0.4F	19		0206	1.3F	4		0042	1.6F	19		0214	1.8F
M	0937	1409	0.4E	Tu	0725	1315	1.6E	Th	0655	1312	2.0E	F	0816	1359	2.0E
	1932				1929				1905				2018		
5		0253	0.6F	20		0222	1.7F	5		0131	2.1F	20		0314	1.8F
Tu	0750	1342	1.0E	W	0801	1350	2.0E	F	0748	1358	2.4E	Sa	0910	1451	2.0E
	1905				2004				2002				2111		
6		0147	1.1F	21		0251	1.9F	6		0232	2.5F	21		0411	1.8F
W	0745	1349	1.6E	Th	0842	1427	2.2E	Sa	0846	1447	2.7E	Su	1003	1539	2.0E
	1934				2045				2102				2203		
7		0208	1.7F	22		0331	2.1F	7		0336	2.7F	22		0506	1.8F
Th	0815	1418	2.1E	F	0926	1508	2.3E	Su	0945	1540	2.9E	M	1053	1622	1.9E
	2017				2128				2204				2252		
8		0251	2.2F	23		0417	2.1F	8		0438	2.7F	23		0554	1.6F
F	0857	1501	2.6E	Sa	1011	1554	2.3E	M	1045	1638	2.8E	Tu	1139	1711	1.7E
	2108				2212				2307				2340		
9		0345	2.6F	24		0458	2.1F	9		0542	2.6F	24		0637	1.5F
Sa	0948	1550	2.9E	Su	1055	1635	2.3E	Tu	1143	1727	2.5E	W	1223	1748	1.5E
	2204				2257										
10		0437	2.9F	25		0546	2.1F	10		0636	2.2F	25		0712	1.2F
Su	1041	1642	3.1E	M	1139	1716	2.2E	W	1239	1815	2.0E	Th	0026	0712	1.2F
	2302				2340								1307	1829	1.1E
11		0533	3.0F	26		0623	2.0F	11	0109	0739	1.6F	26	0115	0800	0.9F
M	1137	1732	3.0E	Tu	1221	1759	2.0E	Th	1333	1845	1.3E	F	1358	1912	0.7E
	2359														
12		0628	2.8F	27	0022	0658	1.8F	12	0210	0842	1.0F	27	0224	0912	0.5F
Tu	1231	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.

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 0657 1517 2021	0445 1109 1737 2338	1.0F 2.0E 1.1F 1.1E	16 W	0120 0701 1508 1859	0440 1052 1715 2243	1.0F 1.5E 0.6F 1.2E	1 F	0330 1250	0646 2341	1.7F 2.1E	16 Sa	0244 1350	0639 2237	2.2F 2.7E
2 W	0300 0824 1610 2000	0548 1203 1810	1.1F 1.2E 0.6F	17 Th	0205 0819	0538 1146 1736 2250	1.2F 0.9E * 1.5E	2 Sa	0432 1508	0756 2158	1.6F 2.1E	17 Su	0346 1524	0746 2322	2.2F 2.8E
3 Th	0414 1039	0013 0657 1321 1844	1.4E 1.1F 0.5E *	18 F	0259 1025	0639 1303 1538 2313	1.3F 0.4E * 1.8E	3 Su	0542 1604	0017 0912	2.0E 1.6F	18 M	0459 1615	0900	2.3F
4 F	0529 1423	0053 0815 1737 1914	1.6E 1.1F 0.3E *	19 Sa	0406 1456	0756 2348	1.5F 2.1E	4 M	0654 1645	0142 1107	1.9E 1.7F	19 Tu	0618 1654	0033 1015	2.7E 2.4F
5 Sa	0641 1635	0147 0956 1910 1957	1.7E 1.3F 0.5E 0.4E	20 Su	0524 1634	0912	1.7F	5 Tu	0802 1719	0313 1218 2009 2157	1.8E 1.8F 0.8E 0.7E	20 W	0733 1720	0239 1120 2025 2142	2.5E 2.4F 0.8E 0.8E
6 Su	0748 1726	0256 1220 1959 2111	1.8E 1.6F 0.6E 0.6E	21 M	0646 1725	0058 1035	2.3E 2.0F	6 W	0902 1745	0433 1251 2033 2308	1.9E 1.8F 0.8E 0.4E	21 Th	0841 1729	0415 1215 2021 2307	2.5E 2.4F 0.8E 0.3E
7 M	0848 1807	0415 1309 2035 2226	2.0E 1.8F 0.6E 0.5E	22 Tu	0800 1809	0301 1156	2.4E 2.4F	7 Th	0954 1803	0542 1316 2047	2.1E 1.8F 0.7E	22 F	0941 1727 2306	0530 1252 2015	2.4E 2.1F 0.9E
8 Tu	0942 1843	0521 1346 2104 2323	2.2E 2.0F 0.6E 0.3E	23 W	0906 1846	0433 1251 2119 2305	2.7E 2.6F 0.6E 0.5E	8 F	1041 1812 2327	0000 0633 1339 2052	* 2.2E 1.7F 0.7E	23 Sa	0129 1036 1719 2314	0016 0540 1327 2004	0.3F 2.3E 1.8F 1.1E
9 W	1031 1916	0615 1415 2132	2.4E 2.0F 0.5E	24 Th	1005 1907	0542 1335 2124	3.0E 2.6F 0.5E	9 Sa	0211 1123 1814 2335	0054 0720 1406 2044	0.3F 2.2E 1.6F 0.7E	24 Su	0335 1127 1704 2342	0116 0743 1356 2019	0.9F 2.0E 1.4F 1.5E
10 Th	1116 1942	0014 0703 1436 2154	* 2.6E 2.0F 0.4E	25 F	1100 1912 2330	0005 0645 1412 2117	* 3.1E 2.9F 0.5E	10 Su	0331 1204 1805 2350	0135 0802 1432 2044	0.7F 2.1E 1.4F 0.9E	25 M	0518 1217 1643	0210 0837 1423 2037	1.4F 1.6E 1.0F 2.0E
11 F	1157 2000 2358	0100 0745 1459 2157	* 2.7E 1.9F 0.3E	26 Sa	0231 1150 1908 2345	0108 0742 1444 2111	0.4F 3.0E 2.2F 0.7E	11 M	0440 1244 1740	0221 0844 1458 2059	1.0F 1.9E 1.1F 1.2E	26 Tu	0650 1309 1628	0305 0937 1452 2104	1.8F 1.1E 0.6F 2.3E
12 Sa	0310 1235 2007	0143 0821 1523 2145	0.4F 2.7E 1.8F 0.3E	27 Su	0403 1239 1856	0205 0836 1516 2126	0.9F 2.7E 1.8F 1.0E	12 Tu	0010 0549 1328 1721	0305 0927 1527 2114	1.3F 1.6E 0.7F 1.5E	27 W	0054 0820	0355 1043 1519 2127	2.1F 0.7E * 2.5E
13 Su	0407 1311 2006	0224 0856 1549 2158	0.6F 2.6E 1.6F 0.4E	28 M	0017 0526 1326 1835	0257 0926 1545 2146	1.3F 2.3E 1.3F 1.4E	13 W	0037 0703 1422 1705	0353 1017 1549 2129	1.6F 1.2E 0.3F 1.9E	28 Th	0133 1000	0449 1203 1541 2156	2.2F 0.3E * 2.6E
14 M	0502 1347 1947	0307 0933 1617 2214	0.8F 2.3E 1.3F 0.6E	29 Tu	0059 0648 1414 1814	0352 1020 1612 2212	1.5F 1.7E 0.8F 1.7E	14 Th	0111 0833	0443 1105 1608 2139	1.8F 0.7E * 2.2E	29 F	0216 1208	0539 2217	2.2F 2.6E
15 Tu	0558 1425 1917	0353 1008 1646 2228	0.9F 1.9E 1.0F 0.9E	30 W	0145 0820 1511 1800	0449 1118 1641 2238	1.7F 1.1E 0.4F 2.0E	15 F	0153 1037	0539 1231 1355 2159	2.0F 0.3E 0.3E 2.5E	30 Sa	0302 1354	0633 2243	2.1F 2.5E
				31 Th	0236 1014	0545 1226 1709 2306	1.7F 0.5E * 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

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	0615 2209	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	0517 1124 1531 2344	0143 0820 1323 1947	1.5F 0.9E 0.7F 1.9E
4 Su	2249 2340	0215 1017 1237 1918	2.8F * * 3.5E	19 M	0720 2338	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 2042	0303 0922 1412 2042	1.7F 0.5E 0.7F 2.4E	5 W	0011 0614 1152 1712	0245 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 1527 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 2219	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	0017 0432 1043 1505	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 1823 2231	* 1.6E 1.4F	10 M	0105 1607	1112 1937	2.4E 1.9F	25 Tu	0145 1518	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.

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.
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	Garnet 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	--	3.5	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	Mocsabec Reach, east end.....	44 31.71	67 34.35	-2 45	-3 08	-3 13	-3 39	0.4	0.4	0.0	--	1.0	110	0.0	--	1.0	258	
111	Mocsabec 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	Sheepscot 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	

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.
KENNEBEC RIVER Time meridian, 75°W																			
on 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 Nob.....	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	--	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	Kiltery 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	

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.
	CAPE COD BAY Time meridian, 75°W	ft	° ' N	° ' 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				--	--	--	--	--	--	--	--	--	--	
1261	Cape Cod Canal (see Index).....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
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	
	HASSACHUSETTS 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	--	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	

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.
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
																0.9 280
																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 58	-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	Hyannis 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
																0.6 070
																0.5 265
																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
																0.2 195
																0.3 175
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	Hedge Fence-L'Hommedieu Shoal, between..	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	25.1	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	Menensha 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

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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.
	VINEYARD SOUND Time meridian, 75°W	ft	° ' "	° ' "	on POLLOCK RIP CHANNEL, p.20															
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 Nashawena 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	Quamisset 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.....	41	32.4	70	39.8	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	34.0	70	48.6	-0 43	-0 43	-1 20	-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	Mattapoisett Harbor.....	41	30	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	

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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.								
	BUZZARDS BAY <7> Time meridian, 75°W	ft	N	W	on POLLOCK RIP CHANNEL, p.28											
1766	Wareham River, off Barneys 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	Onsat Bay, south of Onset Island.....	41	43.9	70 38.7	Current weak and variable											
1776	Onsat Bay, south of Wickets 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	Bournedale.....	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 13	-0 06	-0 17	-0 19	0.6	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											
1811	Sakonnet River (except Narrows).....	--	--	--	Current weak and variable											
1821	Tiverton, Stone bridge, Sakonnet R. <9>..	41	37.5	71 13.0	-2 58	-5 02	-2 26	-3 06	1.4	1.6	0.0	--	2.7 010	0.0	--	2.7 190
									0.3				0.6 010			
									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
									--				--			
									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
									0.5				0.9 000			
									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	Pridence 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 --

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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.											
	NARRAGANSETT BAY <8> Time meridian, 75°W	ft	N	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														
2106	Point Judith 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 WNW 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	

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			Lat.	Long.	Min. before Flood	Flood	Min. before Ebb	Ebb	Flood	Ebb	Minimum before Flood		Maximum before Ebb								
											knots	deg.	knots	deg.							
	BLOCK ISLAND SOUND Time meridian, 75°W	ft	° ' N	° ' W	on THE RACE, p.34						knots	deg.	knots	deg.	knots	deg.	knots	deg.			
2246	Wicopasset 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			
																		0.2	024		
																			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			
																			0.1	252	
																				0.6	174
2306	Rocky Point, 2 miles WNW 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	Ran 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	Ran 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	Lorg 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			
																			0.6	025	
																				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	0.0	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			
																			0.2	243	
																				0.5	234
	FISHERS ISLAND SOUND																				
2391	Edwards Pt. and Sandy Pt., between.....	4	41 19.00	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			

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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		
		ft	° ' N	° ' W	h. m.	h. m.	h. m.	h. m.			knots deg.	knots deg.	knots deg.	knots deg.		
	FISHERS ISLAND SOUND Time meridian, 75°W				on THE RACE, p.34											
2406	Avondale, Pawcatuck River <S1>.....	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
								-1 08		0.0						0.1 243
								+0 04		0.1						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	Noank <S1>.....	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
								-1 24		0.0						0.0 --
								+0 19		0.1						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
								-1 40		0.0						0.2 234
								-0 20		0.1						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
								-1 08		0.0						0.2 186
								+0 04		0.1						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
								-1 30		0.1						0.2 202
								+0 13		0.2						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
								-1 11		0.0						0.2 165
								+0 26		0.2						0.5 161
2491	Lower Coal Dock.....	15	41 30.88	72 04.72	Current weak and variable											
2496	Goshen Point, 1.9 miles SSE of.....	15	41 16.00	72 06.30	-1 05	-1 00	-1 03	-1 49	0.4	0.5	0.0	--	1.2 285	0.0	--	1.6 062
2501	Little Gull Island, 0.8 mile NNW of.....	15	41 13.10	72 06.93	+0 17	-1 19	-2 29	-0 46	0.7	0.8	0.0	--	1.9 258	0.0	--	2.9 043
2506	Bartlett Reef, 0.2 mile south of.....		41 16.2	72 07.7	-2 01	-0 50	-1 00	-1 31	0.3	0.3	0.0	--	1.4 255	0.0	--	1.3 090
2511	Twotree Island Channel.....	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
2516	Niantic (Railroad Bridge).....	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
2521	Black Point, 0.8 mile south of.....	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
2526	Black Point and Plum Island, between....	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
2531	Plum Island, 0.8 mile NNW of.....		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
2536	Branford Reef, 1.5 miles southwest 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
2541	Branford Reef, 5.0 miles south 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
2546	Hatchett Point, 1.1 miles WSW 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

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			Lat.	Long.	Min. before Flood	Min. before Ebb	Flood	Ebb	Flood	Ebb	Minimum before Flood		Minimum before Ebb			
											Maximum Flood	Maximum Ebb	Maximum Flood	Maximum Ebb		
	LONG ISLAND SOUND Time meridian, 75°W	ft	° ' N	° ' W	h. m.	h. m.	h. m.	h. m.			knots deg.	knots deg.	knots deg.	knots deg.		
					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	David's 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
										0.2						0.1 283
										0.2						0.2 283
										0.2						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
										0.3	--		0.2 348	--	--	--
										0.6	0.4		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
										--	--		--	--	--	--
										-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			0.2 233
										0.3			0.5 233			0.5 233
										0.7						

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			Lat.	Long.	Min. before Flood	Min. before Ebb	Ebb	Flood	Flood	Ebb	Minimum before Flood	Maximum Flood	Minimum before Ebb	Maximum Ebb
	LONG ISLAND SOUND Time meridian, 75°W	ft	° ' M	° ' 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 57, 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	

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1903

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS								
			Lat.	Long.	Min. before Flood	Min. 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.					
DELAWARE BAY and RIVER Time meridian, 75°W																			
on DELAWARE BAY ENTRANCE, p. 50																			
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	--	2.2	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	Oidsmans 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	Glooucester.....	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	010	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	See table 5.													
4406	Winter-Quarter Shoal Buoy 6WQS <31>....	37	55	74	56	See table 5.													

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		
		ft	° ' N	° ' W	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					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.....		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	Fall 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	
					on 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	

TABLE 2. - CURRENT DIFFERENCES AND OTHER CONSTANTS, 1983

NO.	PLACE	METER DEPTH	POSITION		TIME DIFFERENCES				SPEED RATIOS		AVERAGE SPEEDS AND DIRECTIONS								
			Lat. N	Long. W	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.
	BOCA CIEGA BAY and ST. JOSEPH SOUND Time meridian, 90°W	ft			on TAMPA BAY ENTRANCE, p.112														
8731	The Narrows (Indian Rocks Beach Br.)....	27	52.6	82 51.0	-0 55	-0 38	-0 55	-1 16	0.5	0.2	0.0	--	0.6	180	0.0	--	0.2	000	
8741	Clearwater Pass, 0.2 mi. NE of Sand Key.	27	57.4	82 49.4	-2 56	-3 02	-1 56	-2 12	1.3	0.8	0.0	--	1.3	179	0.0	--	1.1	348	
8751	Clearwater Harbor.....	27	57.9	82 48.4	--	--	--	--	--	--	0.0	--	0.4	021	0.0	--	0.3	214	
8761	St. Joseph Sound, off.....	23	05.0	82 55.0	--	--	--	--	--	--	0.0	--	0.4	018	0.0	--	0.6	195	
					on MIAMI HARBOR ENTRANCE; p.100														
8771	Anclote Anchorage.....	28	10.0	82 49.8	+2 42	+2 24	+2 28	+2 18	0.3	0.4	0.0	--	0.6	006	0.0	--	0.8	195	
	APALACHEE BAY				on TAMPA BAY ENTRANCE, p.112														
8781	St. Marks River approach.....	30	02.8	84 10.8	-1 29	-0 59	+0 12	-0 30	0.6	0.4	0.0	--	0.6	339	0.0	--	0.5	170	
8791	Four Mile Point, St. Marks River.....	30	06.7	84 12.2	-0 45	-0 27	+0 46	-0 48	0.4	0.3	0.0	--	0.4	358	0.0	--	0.4	187	
8801	St. Marks, St. Marks River.....	30	09.3	84 12.1	+1 06	+0 51	-0 01	+0 01	0.3	0.3	0.0	--	0.3	067	0.0	--	0.4	247	
	PENSACOLA BAY Time meridian, 90°W				on MOBILE BAY ENTRANCE, p.118														
8811	Pensacola Bay entrance, midchannel.....	30	20.1	87 18.0	-0 48	-0 31	+0 18	-1 15	1.1	1.2	0.0	--	1.6	074	0.0	--	1.8	256	
	MOBILE BAY																		
8821	Main Ship Channel entrance.....	30	09.2	88 03.2	--	+0 50	--	+0 50	0.5	0.7	0.2	235	0.7	344	0.0	175	1.0	182	
8831	MOBILE BAY ENTRANCE (off Mobile Point)..	30	13.6	88 02.1	Daily predictions						0.0	--	1.4	027	0.0	--	1.5	190	
8841	Channel, 6 miles N of Mobile Point.....	30	19.8	88 01.7	+0 15	+1 16	+1 26	+0 43	0.4	0.3	0.0	--	0.6	032	0.0	--	0.5	208	
8851	Great Point Clear, channel west of.....	30	29.4	88 01.1	Current weak and variable														
8861	Mobile River entrance.....	30	40.2	88 02.0	+5 36	+4 54	+2 44	+2 45	0.2	0.5	0.0	--	0.3	333	0.0	--	0.7	151	
8871	Tensaw River entrance (bridge).....	30	40.9	88 00.7	+2 04	+1 35	-1 00	-0 21	0.3	0.7	0.0	--	0.4	029	0.0	--	1.0	222	
8881	Pass Aux Herons Entrance to Mississippi Sound <48>....	30	17.3	88 07.8	+0 09	+0 15	+0 22	+0 02	0.9	0.9	0.0	--	1.3	068	0.0	--	1.3	245	
	MISSISSIPPI SOUND																		
8891	Pascagoula River highway bridge <27>....	30	22.3	88 33.8	--	+0 48	--	-1 02	0.9	0.8	0.0	--	1.2	016	0.0	--	1.2	201	
	LOUISIANA COAST																		
8901	Quatre Bayoux Pass, Barataria Bay.....	29	18.6	89 51.1	+1 37	+1 04	+0 43	+0 06	0.9	0.9	0.0	--	1.2	288	0.0	--	1.3	103	
8911	Pass Abel, Barataria Bay.....	29	17.7	89 54.2	+0 53	+1 00	+0 13	-0 03	0.6	1.1	0.0	--	0.9	317	0.0	--	1.6	143	
8921	Barataria Pass, Barataria Bay.....	29	16.3	89 56.9	+2 29	+1 23	+1 01	+0 19	1.1	0.9	0.0	--	1.5	315	0.0	--	1.3	120	
8931	Barataria Bay, 1.1 mi. NE of Manilla....	29	26.2	89 57.6	+4 41	+3 35	+3 10	+4 12	0.3	0.3	0.0	--	0.4	356	0.0	--	0.5	160	
8941	Caminada Pass, Barataria Bay.....	29	11.9	90 02.8	+1 44	+0 03	+0 56	+0 38	1.1	1.0	0.0	--	1.5	297	0.0	--	1.5	118	
8951	Seabrook Bridge, New Orleans <1>.....	30	01.9	90 02.1	--	+7 37	--	+7 57	0.9	0.6	0.0	--	1.2	350	0.0	--	0.9	170	

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

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

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	28	46	66	89
1.5	8	18	28	39	52
2.0	6	13	20	28	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.

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.

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.

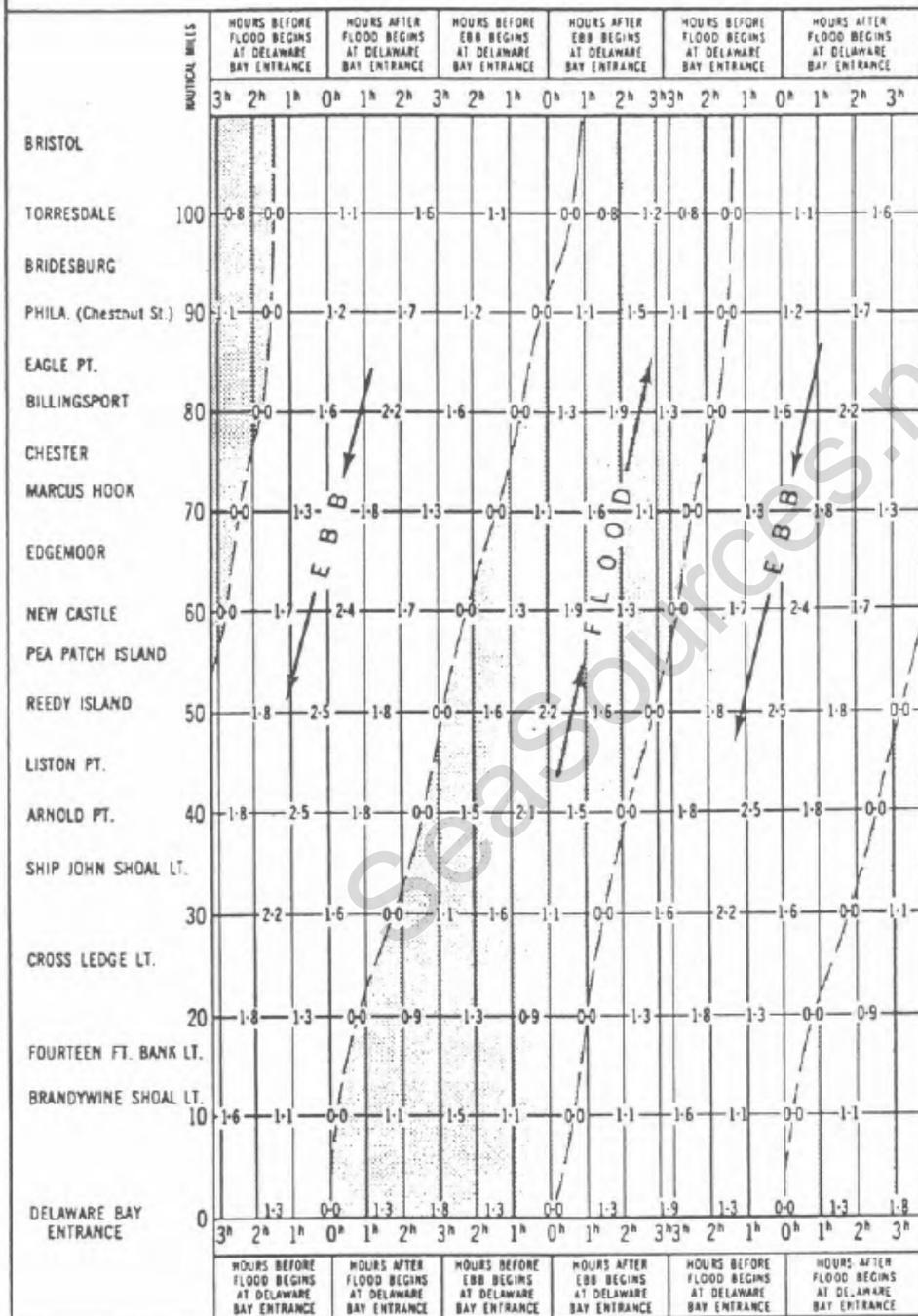
To determine the time of a favorable current for passing up or down the bay and river.—With parallel rulers transfer to the diagram the direction of the speed line corresponding to normal speed of vessel, moving the ruler over the diagram until its edge runs as nearly as possible through the general 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.

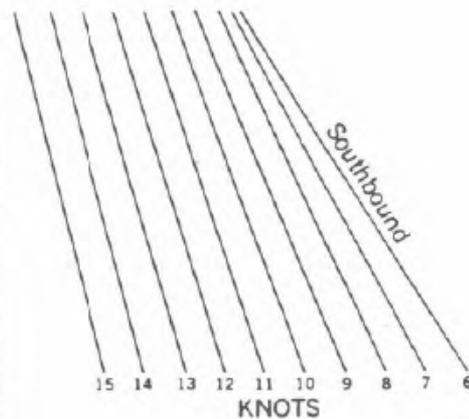
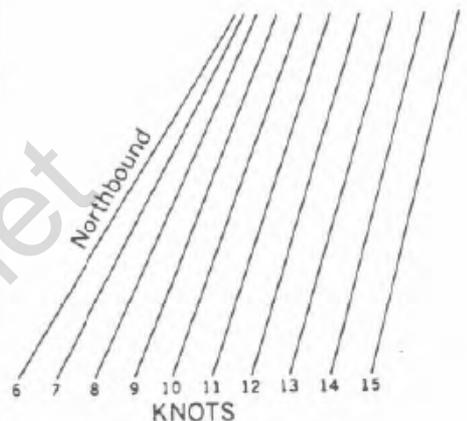
Note.—It is readily seen by transferring southbound speed lines to this diagram that southbound vessels can carry a favorable current for about 30 miles only.

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.

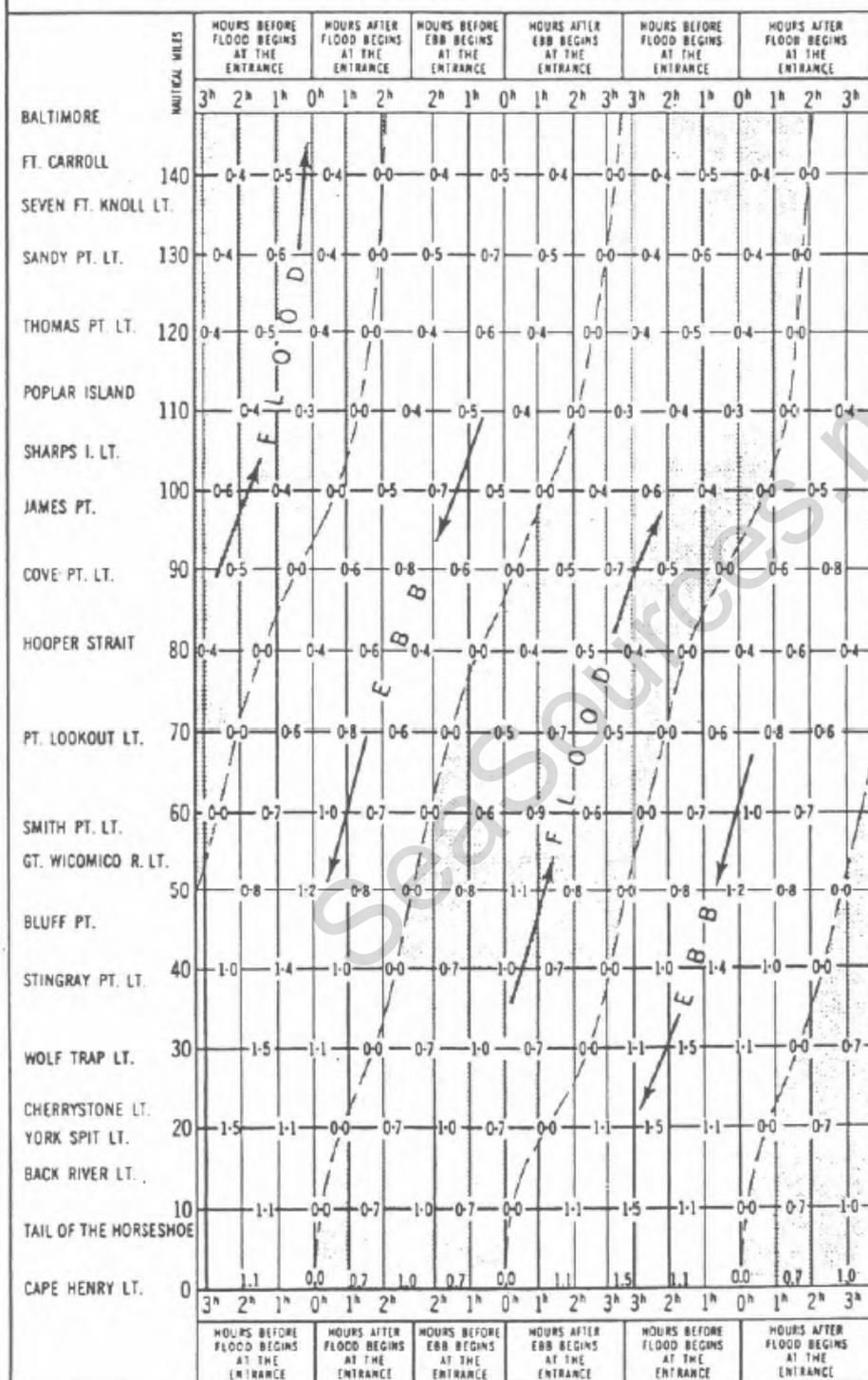
To determine the time of a favorable current for passing through the bay.—With parallel rulers transfer to the diagram the direction of the speed line corresponding to normal speed of vessel, moving the ruler over the diagram until its edge runs approximately through the general line of greatest current 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?

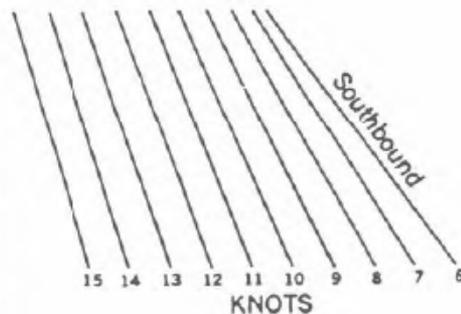
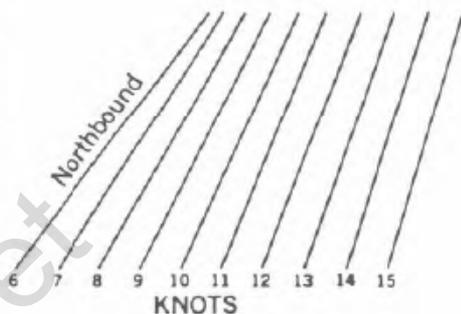
Place parallel rulers along the 12-knot speed line "Southbound." Transfer this direction to the diagram and move it along so as to include the greatest possible number of larger current velocities in the unshaded portion of the diagram. The most favorable time for leaving Baltimore thus found is about 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.

CURRENT DIAGRAM - CHESAPEAKE BAY

Referred to predicted times of slack water at Chesapeake Bay Entrance



SPEED LINES



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

	NO.
Broad Sound.....	251
Broadway Bridge, Harlem River.....	3231
Broken Ground-Horseshoe Shoal, between.....	1466
Bronx River.....	3091
Brooklyn Bridge.....	3181
Broomes Island.....	5541
Browns Ledge.....	1606
Bruffs Island.....	5651
Brunswick.....	7371
Brunswick Ltd. Whistle Buoy 2B.....	7331
Brunswick River, Ga.....	7361
Brunswick River, N.C.....	6076,6081
Bulkhead Shoal Channel.....	4271
Bull Point.....	1861
Bull River.....	7026,7036
Bumkin Island.....	1151,1161
Bunces Pass.....	8361
Burlington Island.....	4386
Burntpot Island.....	7116
Burnside Island.....	7146
Bush River.....	5766
Butler Island.....	6156
Buttermilk Channel.....	3191
Buzzards Bay.....	1666-1776
Byrd Creek Entrance.....	6776

C

Cabin Bluff.....	7421
Caesar Creek.....	7901
Caillou Boca.....	8981
Calcasieu Pass.....	8991-9011
Calf Island.....	771
Calibogue Sound.....	6786-6811
Cambahee River.....	6631,6636
Cambridge.....	5581
Camden Marine Terminals.....	4361
Caminada Pass.....	8941
Campbell Island.....	6066
Camp Key.....	8511
Canapitsit Channel.....	1656
Canarsie.....	3306
Cape Charles, Va.....	4411
Cape Charles, off Wise Point.....	4521
Cape Charles Light.....	4451
Cape Cod Bay.....	1231-1286
Cape Cod Canal.....	1781-1801
Cape Cod Canal, RR. bridge * (22).....	1781
Cape Elizabeth.....	341
Cape Fear River.....	5996-6086
Cape Fourchu.....	26,31
Cape Haze.....	8131
Cape Henlopen.....	4116-4126
Cape Henry Light.....	5811
Cape Henry Light.....	4426-4436,4446,4456
Cape Lookout Shoals.....	5991
Cape May.....	4076
Cape May Canal.....	4096,4101
Cape May Channel.....	4106
Cape May Harbor.....	4091
Cape Neddick.....	361
Cape Poge Light.....	1451,1461,1501
Cape Porpoise.....	351
Cape Romain.....	6171
Cape Sable.....	6,11
Cape Spencer.....	76
Capers Inlet.....	6176
Captain Harbor.....	2931
Captiva Pass.....	8091
Carrot Island.....	5981
Carteret.....	3976
Casco Bay.....	251-331
Casco Passage.....	121
Castle Hill.....	1851

	NO.
Castle Island.....	966
Castle Pinckney.....	6226,6231
Castleton-on-Hudson.....	3746
Catfish Point.....	8641
Cat Island Pass.....	8961
Cats Point.....	8381
Catskill.....	3706
Cedar Point, Gardiners Bay.....	2366
Cedar Point, Md.....	4586,4591
Cerberus Shoal.....	2256,2261,2276
Chapel Hill South Channel.....	3826
Chapel Point.....	5466
Chapter Point.....	5346
Charles Island.....	2731
Charles River.....	921
Charleston entrance.....	6181
Charleston Harbor.....	6191-6471
Charleston Harbor * (82).....	6206
Charleston Harbor entrance.....	6191-6201
Charleston Ltd. Whistle Buoy 2C.....	6186
Charlestown.....	520
Charlotte Harbor.....	8101,8131
Chaseville.....	7671
Chatham Roads.....	1361
Chessee River.....	6761,6766
Chelsea Docks.....	3476
Chelsea River.....	931,936
Cherry Island Flats.....	4311
Chesapeake.....	4946
Chesapeake and Delaware Canal * (76).....	5801
Chesapeake Bay.....	4431-4811
Chesapeake Bay Bridge.....	4691
Chesapeake Bay Bridge Tunnel.....	4471-4521
Chesapeake Bay entrance * (64).....	4441
Chesapeake Beach.....	4471
Chesapeake Channel.....	4491
Chesapeake Light.....	4421
Chester River.....	5696-5716
Chestertown.....	5716
Cheston Point.....	5656
Chickahominy River Bridge.....	5021
Childsbury.....	6396
Chlora Point.....	5576
Choctank River.....	5571-5616
Chowan Creek.....	6716
Christina River.....	4306
City Island.....	3026,3031,3046
City Point, Conn.....	2706
City Point, Mass.....	951
City Point, Va.....	5046
Claremont Landing.....	5026
Clarks Cove.....	1726
Clarks Island.....	431,471,481
Clason Point.....	3076
Clay Bank Pier.....	5121
Clay Head.....	2146
Clay Point.....	2426
Clearwater Harbor.....	8751
Clearwater Pass.....	8741
Coggins Point.....	5041
Cohansey River.....	4211
Cold Spring Harbor.....	2906
Cold Spring Point.....	2101
Combahee River.....	6631,6636
Commodore Point.....	7691
Coney Island.....	3366
Coney Island Channel.....	3906
Coney Island Light.....	3346,3876
Connecticut River.....	2551-2591
Cook Point.....	5571
Cooper River.....	6316-6406
Coosaw Island.....	6656
Coosaw River.....	6616,6636,6646,6661
Corlears Hook.....	3176

	NO.
Cornfield Pt., Long Island Sound..	2616,2621
Cornfield Point, Md.....	5366-5376
Coronala Laja.....	9251
Corrotoman River.....	5206
Cortez.....	8261
Cos Cob Harbor.....	2936
Cotuit Bay.....	1486
Courtney Campbell Parkway.....	8611
Cove Point.....	4601-4611
Coxsackie.....	3726
Crab Point.....	4336
Craighill Angle.....	4721
Craighill Channel.....	4716
Crane Neck Point.....	2791,2801,2806
Craney Island.....	4911
Cross Rip Channel.....	1456
Crow Point.....	1146
Cryders Point.....	3066
Cumberland Island.....	7471
Cumberland River.....	7411,7421
Cumberland Sound.....	7431-7531
Curtis Creek entrance.....	5741
Customhouse Reach.....	6241
Cut A & Cut B, Tampa Bay.....	8401
Cuttyhunk Island.....	1601

D

Dahlgren Harbor Channel.....	5446
Damariscotta River.....	166
Daniel Island Bend.....	6331,6336
Daniel Island Reach.....	6326
Daufuskie Landing Light.....	6841
Davids Island.....	2991
Davis Bank.....	1301
Dawho River.....	6546,6551
Daws Island, Broad River.....	6751
Daws Island, Chechessee River.....	6761
Deal Island.....	5311
Deep Point.....	5711
Deepwater Point.....	4301
Deepwater Point, Miles River.....	5656
Deepwater Shoals.....	5006
Deer Island.....	801,836
Deer Island Flats.....	846
Deer Island Light.....	791,806-861,851
Delancey Point.....	2976
Delaware Bay and River.....	4106-4391
Delaware Bay entrance * (58).....	4111
Dennis Port.....	1371
Derby-Shelton bridge.....	2756
Desbrosses St., Hudson River.....	3466
Deveaux Banks.....	6521
Diamond Island Ledge.....	301
Diamond Shoal Light.....	5841
Dobbs Ferry.....	3546
Doboy Sound.....	7291-7311
Doctor Point, Cape Fear River.....	6061
Doctor Point, Chesapeake Bay.....	5186
Dorchester Bay.....	991
Doubling Point.....	231
Dover Bridge.....	5596
Dram Tree Point.....	6071
Drum I., Charleston Hbr.	6296,6301,6311,6316
Drum Point.....	4596,5526
Drum Point Island.....	7481
Drummond Point.....	7651
Duck Island Bluff.....	2871
Dumpling Island.....	4966
Dumpling Rocks.....	1716
Dutch Gap Canal.....	5061
Dutch Island, Narragansett Bay....	1991,2001
Dutch Island, Skidaway River.....	7101
Dyer Island.....	1921,1931

NO.

E

East Boston.....	926
East Branch, Cooper River.....	6401
East Chop.....	1516,1521
East Fort Point.....	2861
East River.....	3066-3191
East Rockaway Inlet.....	3281
Eastchester Bay.....	3036
Eastern Bay.....	5621-5661
Eastern Plain Point.....	2291,2296
Eastern Point, Long Island Sound.....	2466
Easton Point.....	5606
Eastport.....	86
Eatons Neck Point.....	2846-2856
Echo Bay.....	2986
Eddy Rock Shoal.....	2571
Eddystone.....	4326
Edgartown.....	1506
Edwards Point.....	2391
Eel Point.....	1421
Egg Bank.....	6611
Egg Island Flats.....	4161
Egg Island Shoal.....	7206
Egg Islands.....	7206
Egg Rock.....	641,646
Egmont Channel.....	8281,8291
Egmont Key Light.....	8271,8281
Elba Island.....	6906,6911
Elba Island Cut.....	6901
Elbow of Cross Ledge.....	4191
Eldridge Shoal.....	1491
Elizabeth River.....	4911-4951
Elizabethport.....	3986
Elk River.....	5786-5796
Elliott Cut.....	6496
Ellisville Harbor.....	1266
Elm Point.....	3051
Eltham Bridge.....	5161
Essington Harbor.....	4331
Eustasia Island.....	2566
Execution Rocks.....	3006

F

Fajardo Harbor.....	9231
False Egg Island Point.....	4196
False Hook Channel.....	3776
Farnham Rock.....	1286
Fenwick Island Cut.....	6566
Fenwick Shoal.....	4401
Fernandina Beach.....	7521
Fiddler Ledge.....	226
Fields Cut.....	6831
Fig Island.....	6921
Filbin Creek Reach.....	6346,6351
Finn's Ledge Bell.....	711
Fire I. Lighted Whistle Buoy 2FI.....	3241
Fire Island Inlet.....	3246,3266
Fisherman Island.....	4496-4516
Fisher Point.....	4366
Fishers Island.....	2251,2276
Fishers Island Sound.....	2391-2431
Fishing Bay.....	5351
Five Fathom Bank.....	4081
Florida Passage.....	7211,7221
Florida Reefs to Midnight Pass....	7901-8201
Flushing Creek.....	3081
Folly Island.....	6511,6516
Folly Island Channel.....	6271
Folly Reach.....	6276
Fort Clinch.....	7431-7461
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	Hayne 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 Haddock 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

Hunniwell Point.....	NO. 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

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

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	Pollock Rip Channel.....	1341
Pages Rock.....	5111	Pollock Rip Channel * (2B).....	1346
Palominos Island.....	9221	Pond entrance.....	2116
Pamlico Sound.....	5831-5891	Pond Point, Conn.....	2716
Pamunkey River.....	5161-5171	Pond Point, Maine.....	101
Paradise Point.....	2376	Pooles Island.....	4746,4756,4766
Parris Island.....	6711,6721	Poplar Island.....	5621
Parris Island Lookout Tower.....	6756	Poplar Point.....	5591
Parrot Creek.....	6641	Port Arthur Canal entrance.....	9041
Parson Island.....	5636,5641	Port Elizabeth Channel.....	4031
Pasaje de San Juan.....	9261	Port Everglades.....	7791-7841
Pascagoula River Highway Bridge.....	8891	Port Jefferson Harbor entrance.....	2786
Pass Abel.....	8911	Port Morris.....	3106
Pass aux Herons.....	8881	Port Royal.....	5261
Passage Key Inlet.....	8321	Port Royal Plantation Tower.....	6686
Passaic River.....	4046	Port Royal Sound.....	6681-6781
Pass-a-Grille Channel.....	8661	Port Tampa.....	8571
Patapsco River.....	5721-5751	Port Wentworth.....	6991
Patience Island.....	2041,2051	Portland Breakwater Light.....	311
Patuxent River.....	5526-5556	Portland Bridge.....	331
Pawcatuck River.....	2406	Portland Harbor entrance.....	291
Pea Island.....	666	Portsmouth Harbor.....	381-541
Pea Patch Island.....	4276	Portsmouth Harbor entrance * (10).....	401
Peddocks Island.....	1051,1056,1086,1121,1166	Potomac River.....	5366-5521
Pee Dee River.....	6146	Potomac River Bridge.....	5461
Peekskill.....	3586	Poughkeepsie.....	3646
Pelican Bank.....	5601	Prim Point.....	71
Penikese Island.....	1676,1681	Providence.....	2081
Peningo Neck.....	2941	Provincetown Harbor.....	1241
Penns Neck.....	4281,4286	Prudence Island.....	2021
Pensacola Bay.....	8811	Puerto Rico.....	9171-9281
Persimmon Point.....	5456	Pungoteague Creek entrance.....	5271
Perth Amboy.....	3946,3961	Punta Gorda.....	8141
Petit Chou Island.....	7016	Punta Ostiones.....	9171
Philip Head.....	1221	Purtan Island.....	5131
Phoenix Park.....	7661		
Piankatank River.....	5181		
Pier 67, East River.....	3166		
Pigeon Island.....	7141		
Pig Point.....	4956		
Pig Rock.....	1186,1191		
Pine Creek Point.....	2816		
Pine Island.....	6561		
Pine Key.....	8371		
Pine Island Sound.....	8111		
Pine Point.....	1216		
Pinellas Point.....	8431-8471		
Piney Point, Fla.....	8481,8491		
Piney Point, Md.....	5391-5401		
Pinner Point.....	4926		
Piscataqua River.....	546-566		
Pleasant Point.....	6506		
Plum Gut.....	2461		
Plum Point.....	4631		
Plum Island.....	2341,2526,2531		
Plum Island Sound entrance, Mass.....	591		
Plymouth Harbor.....	1281		
Pocomoke River.....	5286		

Q

Quamisset Harbor.....	1696
Quantico.....	5476
Quantico Creek entrance.....	5481
Quarte Bayoux Pass.....	8901
Quicks Hole.....	1641-1651
Quonochontaug Beach.....	2196,2201

R

Rabbit Island.....	6131
Raccoon Key.....	7181
Race Point, Cape Cod Bay.....	1231,1236
Race Point, Long Island Sound.....	2436
Radio Island.....	5961
Ragged Point.....	5566
Rainsford Island.....	1061,1071-1081
Ram Island, Mass.....	616,621
Ram Island, N.Y.....	2326,2346
Ram Island Reef.....	2411
Ramos Cay.....	9211

	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
Rocklandng 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

S

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
Tensas 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