No 110
250.1160

VARIATIONS OF THE MAGNETIC NEEDLE

Locality	Latitude	Longitude	Date	Observed Variation West	Variation West Jan. 1872.
Manomet	41° 56'	70° 35'	Sept. 1845	9° 17'	10° 42'
"	" "	" "	July & Aug. 1867	10 31	
Shootflying	41 41	70 20	Aug. 1845 & 1846	9 39	10 56
Wellfleet	41 56	70 01	Sept. 1860	10 44	11 19
Provincetown	42 03	70 11	Sept. 1860	11 23	11 58

Present annual increase 3' nearly

LIGHT HOUSES

Name	Latitude	Longitude West from Greenwich Observatory In arc	In time	Fixed or Revolving	Interval of Flash	Height above level of Sea	Visible from a height of 15 feet Naut. miles	Fog Signals
Plymouth or Gurnet	42°00'10"	70°36'03"	4h42m24s.2	Fixed		102 ft.	16	
Race Point	42 03 43	70 14 36	4 40 58.4	Fixed varied by flashes	1m 30s	47 "	12	Whistle
Long Point	42 01 58	70 10 08	4 40 40.5	Fixed		37 "	11	Bell
Mayo's Beach	41 55 48	70 02 04	4 40 08.3	"		36 "	11	
Billingsgate Island	41 52 16	70 04 09	4 40 16.6	"		52 "	13	
Sandy Neck	41 43 20	70 16 52	4 41 07.5	"		59 "	13	
Cape Cod or Highlands of Truro	42 02 21	70 03 39	4 40 14.6	"		195 "	20	Trumpet
Nauset Beach, 3 Beacons	41 51 37	69 57 04	4 39 48.3	"		93 "	15	
Wood End	42 01 15	70 11 37	4 40 46.5	Flashing Red	0 15	45 "	12	
Duxbury Pier	41 59 13	70 38 56	4 42 35.7	Fixed		40 "	11	

TIDES

The plane of reference to which the soundings are given is Mean Low Water

	Plymouth	Barnstable	Wellfleet	Provincetown
Corrected Establishment or Average time of High Water after Moon's meridian passage	XIh IVm	XIh XXIIm	XIh Vm	XIh XXIIm
Mean Rise and Fall of Tides or Rise of Mean High Water above the plane of reference	9.2 ft.	9.3 ft.	11.2 ft.	9.2 ft.
Rise of High Water, Spring Tides do. do. Average	10.8 "	9.8 "	11.8 "	9.9 "
Fall of Low Water do. below do. do.	0.6 "	0.8 "	1.3 "	0.7 "
Rise of High Water Neap Tides above do. do.	9.6 "	8.8 "	10.6 "	8.5 "
Height of Low Water do. do. do.	0.6 "	0.8 "	1.3 "	0.7 "
Rise of Highest Tide observed do. do.	11.3 "	11.0 "	13.9 "	12.5 "
Fall of Lowest Tide do. below do.	1.3 "	1.9 "	2.1 "	3.5 "
Mean duration of Rise	6h 11m	6h 10m	6h 07m	6h 15m
Mean do. of Fall	6 14	6 15	6 18	6 10

SOUNDINGS

The Soundings are expressed in feet to 18 feet, or within the dotted surfaces, beyond them in fathoms, and show the depth at mean low water-the plane of reference. The dotted surfaces beyond low water mark represent the bottom within the respective depths of 6, 12 and 18 feet.

The characteristic soundings only are given on the chart; they are selected from the numerous soundings taken in the survey, so as to represent the figure of the bottom.

BUOYS

Red Buoy to be left in entering on Starboard hand
Black " " " Port "
Black and Red horizontal stripes_ Danger Buoy.
Black and White perpendicular stripes_ Channel Buoy

ABBREVIATIONS OF BOTTOMS

Materials in Capitals	Colors or Shades two small letters	Other qualities three small letters
M. for Mud	bk. for black	hrd. for hard
S. " Sand	wh. " white	sft. " soft
G. " Gravel	yl. " yellow	fne. " fine
Sh. " Shells	gy. " grey	crs. " coarse
P. " Pebbles	bu. " blue	brk. " broken
Sp. " Specks	dk. " dark	lrg. " large
R. " Rock	lt. " light	sml. " small
	gn. " green	rky. " rocky
	bn. " brown	stk. " sticky

Note. *The principal materials and their qualities are represented by larger letters than the subsidiary.*
* *Signifies Sunk Rock;* ✱ *Rock awash at Low-water.*

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UNITED STATES COAST SURVEY

+Map 1001.1.5

COAST CHART No. 10

CAPE COD BAY

Triangulation by C.M.EAKIN and Capt. T.J.CRAM U.S.A. Assts.

Topography by H.L.WHITING J.B.GLUCK S.A.GILBERT A.M.HARRISON P.C.F.WEST Assts.

H.ADAMS & C.H.BOYD Assts. and C.T.JARDELLA Sub-Asst.

Hydrography by the parties under the command of

Lieuts. Comdg. C.H.McBLAIR M.WOODHULL H.S.STELLWAGEN U.S.N.

and H.MITCHELL Assistants

Scale $\frac{1}{80.000}$

Published in 1872

Aids to Navigation corrected to 1879

Issued October 1877 C.P.PATTERSON Superintendent
Verified J.E.HILGARD Assistant in charge of Office

The Triangulation was executed between ......1846 and 1868
The Topography ......do......do......1848 and 1868
The Hydrography ......do......do......1849 and 1870
The Magnetic observations were made by Capt. T.J.Lee U.S.A.C.O. Boutelle and C.A.Schott Assts. Coast Survey, between 1845 & 1867

Statute Miles
Scale of Yards
Nautical Miles
Kilometres

Note. *One kilometre or 1000 metres = 3280.87 ft. = 5/8 of a statute mile nearly. One statute mile = 1609.33 metres.*

NOTE

The lines marked in the border on the right of the Meridians indicate the latest or corrected Longitudes; and are so placed for reference on charts on which the Meridians are not in accordance with the new Longitudes.

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