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PRELIMINARY CHART OF
PORTLAND HARBOR
MAINE

From a Trigonometrical Survey
under the direction of A.D. BACHE Superintendent of the
SURVEY OF THE COAST OF THE UNITED STATES

Triangulation by C. O. BOUTELLE Assistant U.S.C.S.

Topography by A. W. LONGFELLOW Assist.

Hydrography by the Parties
under the command of Lieuts. Comdg. M. WOODHULL, T. A. CRAVEN F. A. ROE
and J. WILKINSON U.S.N. Assts.

Scale 1/20000
1859

Verified
W. H. Chalmers Capt. Topl. Engrs.
Asst. C.S.S. in charge of Office.

The Triangulation was executed in ..... 1850 & 52
The Topography do ..... in ..... 1852 54 & 58
The Hydrography do ..... in ..... 1852 57 & 59

VARIATIONS OF THE MAGNETIC NEEDLE

Locality	Observer	Date	Variation West	Annual Decrease
Bowdoin Hill	J.E. Hilgard Asst. C.S.	August 1852	11° 44'	10' 02'
Bowdoin Hill	C.A. Schott " "	July 1859	12 20	

Present annual increase 3'

SOUNDINGS

The Soundings are expressed in feet in 10 feet, or within the dotted line beyond it in fathoms, and show the depth at mean low water-the plane of reference. The dotted line beyond low water mark represent the bottom within the respective depths of 6.22 and 18 feet. The characteristic soundings only are given on the map. They are selected from the numerous soundings taken in the survey, so as to represent the figure of the bottom.

ABBREVIATIONS
used in the bottoms of this Map

Materials designate.		Colors or Shades designate.		Other qualities Nature and Extent.	
M. for	Mud	bk. for black		hard. for hard	
S. "	Sand			sft. " soft	
Sh. "	Shells			rky. " rocky	
C. "	Clay			sdy. " sandy	

Note. The principal materials and their qualities are represented by letters from the subsidiary.
In the description of Buoys H. S. signifies horizontal stripes, B. black and R. red.

SAILING DIRECTIONS

Vessels coming from Seaward must not approach Cape Elizabeth Lights nearer than 4 miles, bring Portland Head Lt. Hs. to bear N.W by N. (N.84°W.) and stand for it, when within 3 or 4 miles of the Lt. Hs. steer S.by W.(S.22°W.) towards the South West end of House Is. till Fort Preble bears S.W.by W.(W.S.S.22°W.) then steer N.N.W.(N.N.E.67°W.) till well past the Brewhouse Lt. Hs. when a W.S.W.(W.S.50°W.) course leads through mid channel to the anchorage off the wharves.

HOG ISLAND ROADS

Passing Portland Head Lt. Hs. steer S.by W.(S.22°W.) till Fort Preble bears S.W.by W.(W.S.S.22°W.) when a S.E. (S.35°E.) course leads to the anchorage.

DANGERS

Trundy's Reef marked by a Buoy extends to the Northward and Eastward from a point 2 miles to the Southward of Portland Head Lt. Hs.

Jordan's Reef with 26 feet water on it, lies 2 miles S.E. by E.E.E. from Portland Head Lt. Hs. To avoid Spring Ps. and Neaddick Ledges, keep to the Eastward and Northward of the buoys that mark them.

Note. The Courses and Bearings without the brackets are Magnetic, those within are True, and the Distances are in Nautical miles.

LIGHT HOUSES

Name	Latitude North	Longitude West from Greenwich in Time	Longitude West from Washington	Fixed or Revolving	Interval of Flash	Height above Level of Sea	Height above Water
Cape Elizabeth Lt. Hs. W.	43°33' 54.5"	5h 14' 14.5 s	4° 4' 8.6"	Fixed		143 ft.	95.1
Cape Elizabeth Lt. Hs. E.	43 33 56.3	5h 11 5.0 s	4h 58.7	Revolvg.	1 min.	143 "	95.1
Portland Head	43 39 19.9	5h 10 48.3 s	4h 58.6	Fixed		81 "	65.7
Portland Breakwater	43 38 49.6	5h 10 44.0 s	4h 58.4	Fixed & Revolvg.		25 "	9.0

TIDES

Corrected Establishment	3h 33M*
Rise of Highest Tide observed above the plane of reference	14.39 ft.
Fall of Lowest Tide ..... do ..... below ..... do	2.7 "
Fall of Mean Low Water of Spring Tides below ..... do	5.5 "
Height of Mean Low Water of Neap Tides above ..... do	2.8 "
Mean Rise and Fall of Tides	8.9 "
Mean ..... do ..... of Spring Tides	9.9 "
Mean ..... do ..... of Neap Tides	7.9 "
Mean Duration of Rise (Reckoning from the middle of one	6h 42'
Mean ..... do ..... of Fall (Noted to the middle of the next	6 12
Mean ..... do ..... of Stand	0 30

Sketch of
APPROACHES TO
PORTLAND HARBOR
Scale 1/60000
1859

Nautical Miles

Statute Miles

Nautical Miles