RAREBK VK 982 .S6 B3 1861 Chart D

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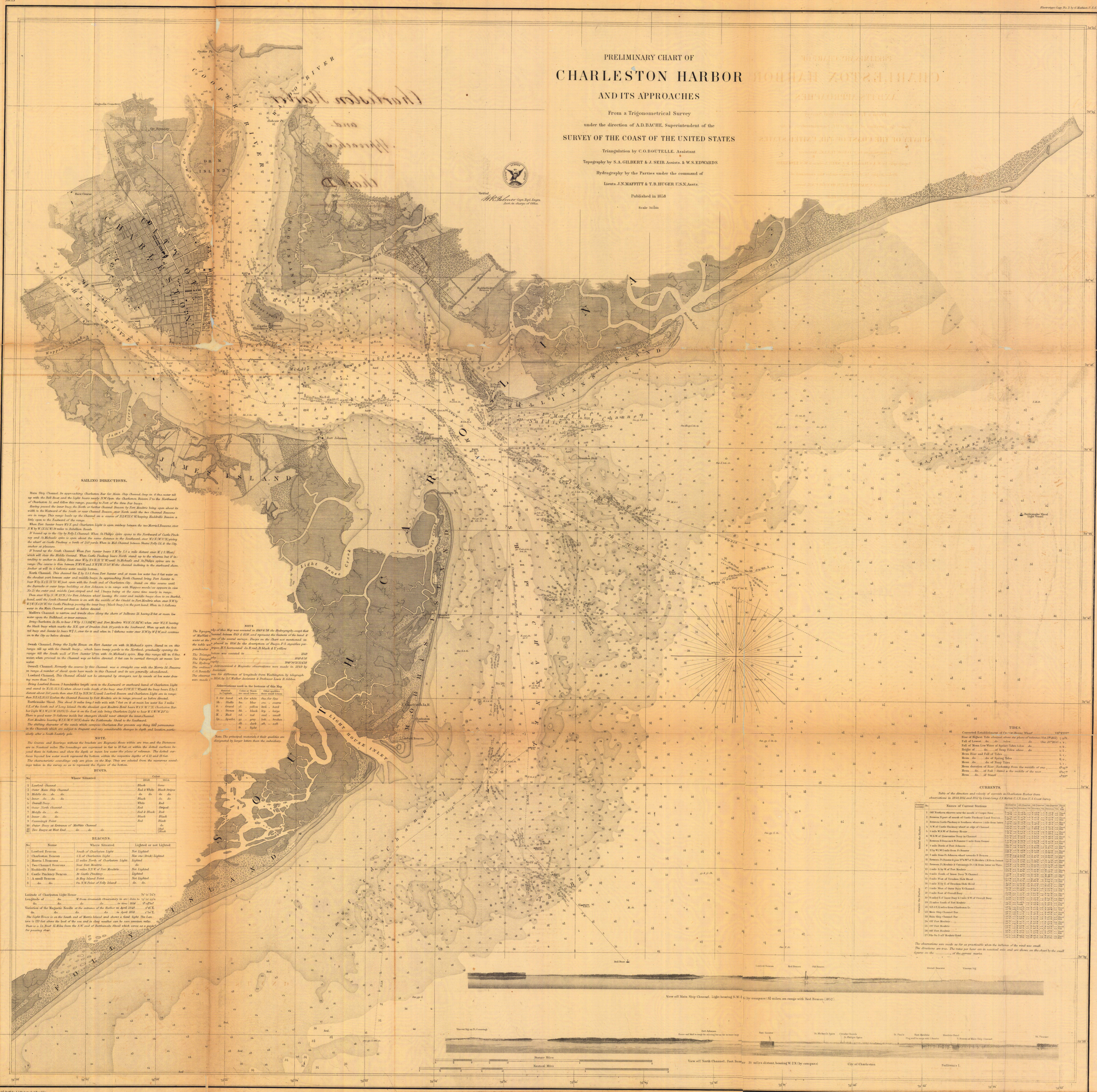

PRELIMINARY CHART OF

CHARLESTON HARBOR

AND ITS APPROACHES

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
Topography by S.A. GILBERT & J. SEIB, Assists. & W.S. EDWARDS
Hydrography by the Parties under the command of
Lieuts. J.N. MAFFITT & T.B. HUGER U.S.N. Assts.

Published in 1858

Scale 1/30,000

Verified W.R. Palmer Capt. Topl. Engrs. Asst. in charge of Office.

SAILING DIRECTIONS.

Main Ship Channel. *In approaching Charleston Bar for Main Ship Channel, keep in 6 fms. water till up with the Bell Boat and the Light bears nearly N.W. Open the Charleston Beacon 5' to the Northward of Charleston Lt. and follow this range, passing to Port of the three Bar buoys.*

Having passed the inner buoy, the North or further Channel Beacon by Fort Moultrie being open about its width to the Westward of the South or near Channel Beacon, steer North until the two Channel Beacons are in range. This range leads up the Channel on a course of N.¾W. (N.6°W.) keeping Haddrell's Beacon a little open to the Eastward of the range.

When Fort Sumter bears W.¾N. and Charleston Light is open midway between the two Morris I. Beacons, steer N.W. by W. (N.54°W.) 1¼ miles to Rebellion Roads.

If bound up to the City by Folly I. Channel: When St. Philip's spire opens to the Northward of Castle Pinckney and St. Michael's spire is open about the same distance to the Southward, steer W.¼N. (W.5°N.) giving the wharf at Castle Pinckney a berth of 240 yards. When in Mid-Channel between Shutes' Folly Id. & the City, anchor at pleasure.

If bound up the South Channel: When Fort Sumter bears S.W. by S.¼ a mile distant steer W.¼S. (West) which will clear the Middle Ground. When Castle Pinckney bears North stand up to the wharves, but if intending to anchor in Ashley River, steer W. by N.¾N. (N.71°W.) until St. Michael's and St. Philip's spires are in range: The course is then between N.W.¾W. and N.W.¾W. (N.50°W.) the channel inclining to the starboard shore. Anchor at will in 4 fathoms water, muddy bottom.

North Channel. *This channel lies E. by S.¼S. from Fort Sumter and at mean low water has 8 feet water on the shoalest part between outer and middle buoys. In approaching North Channel bring Fort Sumter to bear W. by N.¾N. (N.73°W.) just open with the South end of Charleston City. Stand on this course until the Barracks or outer large building at Fort Johnson is in range with Wappoo woods (as appears in view No.2) the outer and middle (per. striped and red) buoys being at the same time nearly in range.*

Then steer W. by N. (W.18°N.) for Fort Johnson wharf leaving the outer and middle buoys close to on Starbd. hand, until the South Channel Beacon is on with the middle of the Citadel in Fort Moultrie when steer N.W. by W.¾W. (N.62°W.) for Castle Pinckney passing the inner buoy (black buoy) on the port hand. When in 5 fathoms water in the Main Channel proceed as before directed.

Maffitt's Channel *is narrow, and trends close along the shore of Sullivan's Id. having 11 feet at mean low water upon the Bulkhead, or inner entrance.*

Bring Charleston Lt. Ho. to bear S.W. by S. (S.35¾W.) and Fort Moultrie W.¾N. (N.81¾W.) when steer W.¾N. leaving the black buoy which marks the N.E. spit of Drunken Dick 20 yards to the Southward. When up with the first red buoy and Sumter Lt. bears W.¾S., steer for it and when in 7 fathoms water steer N.W. by W.¾W. and continue on to the City as before directed.

Swash Channel. *Bring the Light House on Fort Sumter on with St Michael's spire. Stand in on this range till up with the Overall buoy, which leave twenty yards to the Northwd. gradually opening the range till the South wall of Fort Sumter is on with St. Michael's spire. Keep this range till in 6 fms. water, when proceed in the Channel way as before directed. 9 feet can be carried through at mean low water.*

Overall Channel. *Formerly the course by this Channel was a straight one with the Morris Id. Beacons in range. A number of shoal spots have made in this Channel and its use generally abandoned.*

Lawford Channel. *This Channel should not be attempted by strangers, nor by vessels at low water drawing more than 7 feet.*

Bring Lawford Beacon 3 handspikes length open to the Eastward or starboard hand of Charleston Light and stand in N.¾E. (N.5°E.) when about ¼ mile South of the buoy steer N.¾W. (N.7°W.) until the buoy bears E. by S. distant about 350 yards, then steer N.E. by N. (N.36°E.) until Lawford Beacon and Charleston Light are in range; then N.E.¾E. (N.53°E.) when the Channel Beacons by Fort Moultrie are in range, proceed as before directed.

Rattlesnake Shoal. *This shoal 1½ miles long ¼ mile wide, with 7 feet on it at mean low water lies 3 miles S.E. of the South end of Long Island. On the shoalest spot Moultrie Hotel bears W.¼N. (W.7°N.) Charleston Harbor Light W.S.W.¾S. (W.23°S.) To clear it on the East side bring Charleston Light to bear W.S.W. (W.20°S.) There is good water 3½ fathoms inside but strangers should never attempt the inner Channel.*

Fort Moultrie bearing W.¾N. (W.9°30'N.) clears the Rattlesnake Shoal to the Southward.

The shifting character of the sands which compose Charleston Bar prevents any thing like permanence in the Channels which are subject to frequent and very considerable changes in depth and location, particularly after a South Easterly gale.

NOTE.

The Courses and Bearings without the brackets are Magnetic, those within are true, and the Distances are in Nautical miles. 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 Map. They are selected from the numerous soundings taken in the survey, so as to represent the figure of the bottom.

BUOYS.

No.	Where Situated	Color 1850	Color 1854
1	Lawford Channel	Black	Gone
2	Outer Main Ship Channel	Red & White	Black Stripes
3	Middle do. do. do.	do. do.	do. do.
4	Inner do. do. do.	Black	do. do.
5	Overall Buoy	White	Red
6	Outer North Channel	Red	Striped
7	Middle do. do.	Red & Black	Red
8	Inner do. do.	Black	Black
9	Cumming's Point	Red	Black
10	Outer Buoy at Entrance of Maffitt's Channel		do.
11, 12	Two Buoys at West End do. do. do.		Red / Black

BEACONS.

No.	Name	Where Situated	Lighted or not Lighted
1	Lawford Beacon	South of Charleston Light	Not Lighted
2	Charleston Beacon	S.E. of Charleston Light	New one (Brick) Lighted
3	Morris I. Beacons	1½ miles North of Charleston Light	Lighted
4	Two Channel Beacons	Near Fort Moultrie	do.
5	Haddrell's Point	1½ miles N.N.W. of Fort Moultrie	Not Lighted
6	Castle Pinckney Beacon	At Castle Pinckney	Lighted
7	A small Beacon	At Hog Island Point	Not Lighted
8	do. do.	On N.W. Point of Folly Island	do. do.

Latitude of Charleston Light House .... 32° 41' 54".7
Longitude of .... do. .... W. from Greenwich Observatory in arc (data to 1856) .... 79° 52' 29".0
do. .... do. .... do. .... do. .... in time 5h 19m 30s
Variation of the Magnetic Needle at the entrance of the Harbor in April 1849 .... 2° 16' E.
do. .... do. .... do. .... do. .... in April 1858 .... 1° 50' E.

The Light House is on the South end of Morris Island and shows a fixed light. The Lantern is 133 feet above the level of the sea, and in clear weather, can be seen seventeen miles. There is a Lt. Boat 1½ Miles from the S.W. end of Rattlesnake Shoal which serves as a guide for passing clear.

NOTE

The Topography of this Map was executed in 1849 & '58, the Hydrography, except that of Maffitt's Channel, between 1849 & 1856, and represent the features of the land & water at the time of the several surveys. Buoys on the Chart not mentioned in the table were placed in 1856. In the description of Buoys, P.S. signifies perpendicular stripes, H.S. horizontal do. R. red, B. black & Y. yellow.

The Triangulation was executed in 1849
The Topography .... " .... 1849 & '58
The Hydrography .... " .... 1849 '50 '51 '52 & '58
The ordinary Astronomical & Magnetic observations were made in 1849 by C. O. Boutelle Assistant.
The observations for difference of longitude from Washington, by telegraph were made in 1850, by S. C. Walker Assistant & Professor Lewis R. Gibbes.

Abbreviations used in the bottoms of this Map

Material in Capitals	Color or Shade two small letters	Other qualities three small letters
S. for Sand	wh. for white	fne. for fine
Sh. " Shells	bu. " blue	crs. " coarse
G. " Gravel	yl. " yellow	hrd. " hard
St. " Stones	bk. " black	lrg. " large
M. " Mud	rd. " red	sml. " small
Sp. " Specks	gy. " grey	brk. " broken
	dk. " dark	sft. " soft
	lt. " light	

Note. *The principal materials & their qualities are designated by larger letters than the subsidiary.*

TIDES.

Corrected Establishment of Custom-House Wharf	VIIh XXVIm
Rise of Highest Tide *observed, above the plane of reference* (Oct. 5th 1857)	7.9 Ft.
Fall of Lowest .. do. .. do. .. *below* .. do. (Dec. 23rd 1850)	2.4 "
Fall of Mean Low Water of Spring Tides *below* .. do.	0.4 "
Height of .. do. .. of Neap Tides *above* .. do.	0.5 "
Mean Rise and Fall of Tides	5.1 "
Mean .. do. .. do. of Spring Tides	6.0 "
Mean .. do. .. do. of Neap Tides	4.1 "
Mean duration of Rise (*Reckoning from the middle of one*)	6h 19m
Mean .. do. .. of Fall (*Stand to the middle of the next*)	6h 07m
Mean .. do. .. of Stand	0h 33m

CURRENTS.

Table of the direction and velocity of currents in Charleston Harbor from observations in 1850, 1851 and 1852 by Lieut. Comg. J.N. Maffitt U.S.N. Asst. U.S. Coast Survey.

General Locality	No.	Names of Current Stations	1st Quarter Direction	1st Quarter Vel.	2d Quarter Direction	2d Quarter Vel.	3d Quarter Direction	3d Quarter Vel.	4th Quarter Direction	4th Quarter Vel.	Flood or Ebb
Inside the Harbor	1	Off Northern wharves near the mouth of Cooper River	N.02°E. / S.06°W.	1.3 / 1.0	N.06°E. / S.03°W.	1.7 / 1.0	N.03°W. / S.08°E.	1.3 / 1.2	N.06°W. / S.05°E.	0.5 / 0.5	Flood / Ebb
	2	Between N. part of marsh of Castle Pinckney I. and Beacon	N.11°W. / S.28°E.	0.6 / 0.9	N.22°W. / S.19°E.	0.8 / 1.1	N.05°W. / S.11°E.	0.7 / 0.9	N.45°W. / S.22°E.	0.3 / 0.7	Flood / Ebb
	3	Between Castle Pinckney & Southern wharves ¼ mile from latter	N.25°W. / S.20°E.	0.5 / 0.6	N.20°W. / S.20°E.	1.1 / 1.4	N.11°W. / S.18°E.	1.0 / 1.4	N.18°W. / S.18°E.	0.5 / 0.7	Flood / Ebb
	4	S.W. of Castle Pinckney wharf at edge of Channel	N.63°W. / S.64°E.	0.5 / 1.0	N.70°W. / S.62°E.	1.1 / 1.6	N.76°W. / S.68°E.	1.0 / 1.2	N.84°W. / S.75°E.	0.5 / 0.5	Flood / Ebb
	5	¼ mile W.S.W. of Battery House	N.82°W. / S.36°E.	0.9 / 0.7	N.64°W. / S.40°E.	1.6 / 1.5	N.57°W. / S.51°E.	0.9 / 1.7	N.56°W. / S.38°E.	0.4 / 0.9	Flood / Ebb
	6	W.S.W. of Quarantine Buoy in Channel	N.60°W. / S.40°E.	0.8 / 0.4	N.42°W. / S.35°E.	1.0 / 1.2	N.30°W. / S.32°E.	0.9 / 1.1	N.28°W. / S.28°E.	0.6 / 0.6	Flood / Ebb
	7	Between B Beacon & Ft. Sumter ⅓ mile from former	N.45°W. / S.22°E.	0.9 / 0.5	N.34°W. / S.22°E.	0.8 / 1.0	N.60°W. / S.34°E.	0.6 / 0.9	N.45°W. / S.26°E.	0.4 / 0.6	Flood / Ebb
	8	½ mile North of Fort Johnson	N.82°W. / S.86°E.	0.3 / 0.8	N.82°W. / S.88°E.	1.4 / 2.2	N.75°W. / N.82°E.	1.2 / 0.8	N.73°W. / N.87°E.	1.5 / 0.8	Flood / Ebb
	9	N. by W.¼W.¾ mile from Ft. Sumter	N.34°W. / S.88°E.	0.6 / 0.7	N.48°W. / S.79°E.	1.0 / 1.1	N.34°W. / S.70°E.	1.5 / 1.5	N.37°W. / N.88°E.	0.9 / 0.7	Flood / Ebb
	10	⅜ mile from Ft. Johnson wharf towards B Beacon	S.88°W. / N.77°E.	0.9 / 0.6	S.82°W. / N.85°E.	1.2 / 2.0	S.70°W. / N.81°E.	0.9 / 1.2	S.84°W. / N.64°E.	0.2 / 1.8	Flood / Ebb
	11	Between Ft. Sumter & pier Nd & Wd of Ft. Moultrie ¼ M. from former	N.51°W. / S.40°E.	1.0 / 1.0	N.48°W. / S.42°E.	2.0 / 2.2	N.50°W. / S.38°E.	1.8 / 2.7	N.51°W. / S.28°E.	0.8 / 0.7	Flood / Ebb
	12	Between Ft. Moultrie & Cumming's Pt. ½ M. from latter on Flats	N.53°W. / S.40°E.	1.3 / 1.8	N.38°W. / S.42°E.	1.1 / 1.2	N.40°W. / S.45°E.	1.3 / 1.2	N.30°W. / S.39°E.	0.6 / 0.5	Flood / Ebb
	13	¼ mile S. by W. of Fort Moultrie	N.31°W. / S.63°E.	0.5 / 0.3	N.42°W. / S.60°E.	0.8 / 1.1	N.44°W. / S.50°E.	0.5 / 1.2	N.17°W. / S.53°E.	0.3 / 0.5	Flood / Ebb
	14	½ mile South of Inner Buoy N. Channel	N.76°W. / S.06°E.	0.1 / 0.7	N.29°W. / S.15°E.	0.5 / 1.3	N.56°W. / S.23°E.	0.3 / 1.4	N.76°W. / S.28°E.	0.3 / 0.5	Flood / Ebb
	15	⅜ mile West of Drunken Dick Shoal	N.67°W. / S.84°E.	0.5 / 0.7	N.72°W. / S.80°E.	1.2 / 2.0	N.70°W. / S.64°E.	1.0 / 1.3	N.64°W. / S.59°E.	0.9 / 0.5	Flood / Ebb
	16	¼ mile N. by E. of Drunken Dick Shoal	N.81°W. / N.68°E.	0.5 / 0.4	S.84°W. / N.75°E.	0.6 / 0.9	S.77°W. / N.82°E.	0.4 / 0.7	S.75°W. / N.85°E.	0.7 / 0.2	Flood / Ebb
Outside the Harbor	17	½ mile West of Outer Buoy N. Channel	N.48°W. / S.75°E.	0.3 / 0.4	N.56°W. / S.68°E.	0.9 / 1.1	N.62°W. / S.58°E.	0.6 / 0.7	N.56°W. / S.53°E.	0.2 / 0.3	Flood / Ebb
	18	⅜ mile East of Overall Buoy	N.80°W. / S.72°E.	0.4 / 0.5	S.77°W. / S.62°E.	0.5 / 0.5	N.67°W. / S.52°E.	0.4 / 0.6	N.60°W. / S.16°E.	0.2 / 0.3	Flood / Ebb
	19	1½ miles S. of Inner Buoy & 1 mile S.W. of Overall Buoy	N.41°W. / S.30°E.	0.4 / 0.9	N.83°W. / S.37°E.	0.7 / 2.1	N.78°W. / S.34°E.	1.0 / 1.8	N.69°W. / S.46°E.	0.2 / 0.8	Flood / Ebb
	20	2¼ miles South of Fort Moultrie	N.01°W. / S.18°E.	0.4 / 0.4	N.08°E. / South	0.9 / 1.1	N.03°W. / S.06°W.	1.0 / 0.3	N.06°E. / S.06°E.	0.5 / 1.0	Flood / Ebb
	21	S.E.½E. 1¼ miles from Charleston Lt.	N.08°E. / S.01°W.	0.4 / 0.6	N.10°E. / S.34°E.	0.9 / 1.2	N.25°E. / S.20°E.	0.8 / 1.3	N.40°E. / S.28°W.	0.7 / 0.5	Flood / Ebb
	22	Main Ship Channel Bar	N.08°W. / S.08°E.	0.5 / 0.7	N.11°W. / S.11°E.	1.1 / 1.2	N.15°W. / S.08°E.	1.2 / 1.4	N.26°W. / S.22°E.	0.3 / 0.7	Flood / Ebb
	23	Main Ship Channel Bar	N.75°W. / S.70°E.	0.5 / 0.7	N.62°W. / S.56°E.	0.7 / 1.0	N.34°W. / S.37°E.	0.6 / 0.8	N.08°E. / S.45°E.	0.3 / 0.4	Flood / Ebb
	24	Off Fort Moultrie	N.38°W. / E.02°S.	1.1 / 0.9	N.40°W. / E.02°S.	1.6 / 1.7	N.35°W. / E.05°N.	1.6 / 1.7	N.13°W. / E.19°N.	0.9 / 1.0	Flood / Ebb
	25	Off Fort Moultrie	N.45°W. / E.08°S.	1.1 / 1.0	N.56°W. / E.45°S.	1.6 / 2.5	N.64°W. / E.44°S.	1.6 / 2.4	N.47°W. / E.44°S.	1.0 / 1.0	Flood / Ebb
	26	Off Fort Moultrie	N.49°W. / S.35°E.	1.3 / 1.3	N.44°W. / S.45°E.	2.5 / 2.5	N.45°W. / S.40°E.	2.5 / 2.4	N.48°W. / S.40°E.	1.5 / 1.2	Flood / Ebb
	27	Pile No. 3 off Moultrie Hotel	W.15°S. / N.72°E.	0.5 / 0.3	W.09°S. / N.76°E.	0.9 / 0.9	W.06°S. / N.79°E.	1.0 / 0.8	W.04°S. / N.67°E.	0.4 / 0.3	Flood / Ebb

The observations were made as far as practicable when the influence of the wind was small. The directions are true. The rates per hour are in nautical mls. and are shown on the chart by the small figures on the .... of the current marks.

Red.d Dr.n by J.J. Ricketts & A. Boschke.

Eng.d by F. Dankworth, J. Knight, E. Yeager & G. Mc Coy.