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**VARIOUS**

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Serial No. 122

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

E. LESTER JONES, Superintendent

# INSIDE ROUTE PILOT

KEY WEST TO NEW ORLEANS

1919

SECOND EDITION



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## INSIDE ROUTE PILOT, KEY WEST TO NEW ORLEANS.

### INTRODUCTION.

This publication has been prepared for the guidance of those who desire to navigate the coast in small craft, making use of the inside passages as much as possible and, where there are none, keeping as close as practicable to the shore and avoiding long stretches of open water. For this kind of navigation, the publication is believed to contain all necessary information; but it is not to be regarded as a complete coast pilot for this section of the coast, as little attention has been given to the open waters where inside routes are available.

This volume covers the coast of the Gulf of Mexico from the Florida Keys to the Mississippi River and is a continuation of the earlier publication, the Inside Route Pilot, New York to Key West. It contains descriptions of the coast and of all navigable bodies of water on this coast, with directions for navigating them, information concerning the port facilities, places where supplies and fuel can be had, where repairs can be made and much other information usually contained in a coast pilot publication. It also contains information regarding, and directions for navigating, the shallow-water route across Florida from the Atlantic to the Gulf of Mexico.

Descriptions and general information have been separated as far as possible from the sailing directions, and only where it seemed imperative that certain facts should be brought to the attention of the navigator at that particular place has this rule been deviated from. The arrangement of subjects is such as will be most convenient for persons going from east to west. Descriptions of, and general information regarding, bodies of water, their tributaries and the towns, villages, etc., on their shores, are grouped under the name of the body of water. Directions for navigating these waters follow closely under headings "Sailing directions," and where two or more large bodies of water connect, the sailing directions are usually interrupted when the limit of the first body has been reached and continued after the description of the second. Cross-references by page numbers enable one to turn quickly from the sailing directions for one body of water to those of the next if inside navigation is continuous. The courses given herein (true and magnetic) are for going westward or for entering a port from the Gulf, but if bound in the opposite direction it is only necessary to reverse the courses, subtracting or adding 180 degrees to the true course and changing the magnetic course to the opposite point of the compass.

The charts contained in the envelope at the back of the book show the through routes which are practicable for small vessels, and are

## INTRODUCTION.

for the purpose of making the sailing directions more easily understood. No other charts are necessary for a boat of a draft well within the controlling depth of any passage, but if the draft approaches closely to the least depth a larger scale chart should be procured. A list of the charts of these waters is given at the back of the book.

The information contained herein is derived from surveys by the United States Coast and Geodetic Survey and by the Corps of Engineers, United States Army, and from special investigations by the Coast and Geodetic Survey. Much valuable information was contributed by the United States Engineers and by local pilots, fishermen, and boatmen. The information for the first edition was gathered and compiled by W. E. Parker, hydrographic and geodetic engineer, United States Coast and Geodetic Survey.

As these waters are subject to frequent and important changes, due to natural causes as well as to the agencies of man, a work of this kind can be correct only for the date of the latest survey or information received. Navigators and all persons having later information will confer a favor by notifying the Superintendent of the United States Coast and Geodetic Survey of errors which they may discover, or of additional matter which they think should be inserted.

Distances are given in nautical miles and may be converted approximately to statute miles by adding 15 per cent to the distances given.

Currents are expressed in knots, which are nautical miles per hour.

Courses and bearings given in degrees are true, reading clockwise from 0° at North through East to 360°, and are followed by the magnetic equivalents in points and fractions in parentheses.

All depths, unless otherwise stated, are at mean low water, except in the nontidal waters, where the depths are at mean water level.

### SYSTEM OF BUOYAGE ADOPTED IN UNITED STATES WATERS.

In conformity with section 4678 of the Revised Statutes of the United States, the following order is observed in coloring and numbering buoys along the coasts, or in bays, harbors, sounds, or channels, viz:

In approaching the channel, etc., from seaward, RED BUOYS, with EVEN NUMBERS, will be found on the STARBOARD side.

In approaching the channel, etc., from seaward, BLACK BUOYS, with ODD NUMBERS, will be found on the PORT side.

BUOYS painted with RED and BLACK HORIZONTAL STRIPES will be found on OBSTRUCTIONS, with channelways on either side of them, and may be left on either hand in passing in.

BUOYS painted with WHITE and BLACK PERPENDICULAR STRIPES will be found in MIDCHANNEL and must be passed close-to to avoid dangers.

All other distinguishing marks on buoys will be in addition to the foregoing, and may be employed to mark particular spots. A description of such marks is given in the Buoy List.

Perches with balls, cages, etc., will, when placed on buoys, be at turning point, the color and number of the buoy indicating on which side it shall be passed.

Nun buoys, properly colored and numbered, are usually placed on the starboard side, and can buoys on the port side, of channels.

Day beacons (except such as are on the sides of channels, which will be colored like buoys) are constructed and distinguished with special reference to each locality, and particularly in regard to the background upon which they are projected.

#### GENERAL REMARKS ON TIDES, CURRENTS, AND WEATHER.

**Tides.**—Along the Gulf coast of Florida, from Cape Sable to Apalachee Bay, high water occurs at about the time of the moon's upper or lower transit (meridian passage). In this region there are usually two high waters and two low waters daily, even at the time of extreme declination. The high water occurring near the time of an upper transit is the higher high water of the day, the moon's declination being north. The high water occurring near the time of a lower transit is the higher high water of the day, the moon's declination being south. The low water occurring about six hours after the time of an upper transit is the lower low water of the day, the moon's declination being north. The low water occurring about six hours after the time of a lower transit is the lower low water of the day, the moon's declination being south. By north declination is meant that the moon is north of the Equator and so runs high in its apparent diurnal course; by south declination that the moon is south of the Equator and so runs low.

Between Apalachee Bay and the Passes of the Mississippi River but one high water and one low water occur daily when the declination of the moon is considerable.

The rise and fall of tide is greater when the moon is far from the Equator, either north or south, and if the moon's greatest declination occurs at full and change the range will be greatest. About the time that the moon's declination is zero the rise and fall is less, and if the moon's zero declination occurs in its first and last quarter the range will be least. When the moon is near the Equator there are sometimes four small tides in 24 hours; this may be expected when new or full moon occurs at that time. With north declination a high water generally follows the moon's lower transit, and with south declination it follows the moon's upper transit.

The above remarks apply when there is no disturbing action of the wind. Strong winds will nearly always retard or accelerate the tides, and at times during heavy gales the action of the tides will apparently be suspended or reversed.

**Coast and tidal currents.**—Along the coast of the United States bordering on the Gulf, the currents are almost entirely influenced by the force and direction of the winds. The normal tidal currents have little velocity except in the entrances to the bays and harbors; here, in some cases, they have a velocity of  $1\frac{1}{2}$  to 2 knots, but this velocity is decreased or accelerated greatly by the force and direction of the winds. After a norther a current of considerable velocity will be found setting over the bars into the harbors and bays. Along the coast, inside of the 50-fathom curve, it has been noticed that during the months when the prevailing winds are from southward there is generally an easterly set alongshore from the Rio Grande to the Mississippi River and to Cape San Blas, and a northerly set along



the west coast of Florida. During the months that the prevailing winds are from eastward and northward the set is generally westerly along the coast from Cape San Blas to the Rio Grande, and variable along the west coast of Florida.

Prevailing winds at most places along the Gulf coast between Key West and the Mississippi River are northerly during the fall and winter months and southerly during the spring and summer months. The following table shows the mean direction of the prevailing winds for each of the seasons at selected stations where long series of observations have been made:

*Direction of prevailing winds.*

At—	Winter.	Spring.	Summer.	Fall.
Key West.....	NE.	E.	SE.	NE.
Fort Myers.....	NE.	S.	S.	E.
Tampa.....	NW.	W.	E.	NE.
Pensacola.....	N.	SW.	SW.	NE.
Mobile.....	N.	S.	S.	N.
Biloxi.....	N.	S.	S.	S.
New Orleans.....	SE.	SE.	SE.	NE.

**Northers** are violent north winds which blow, mainly during the winter months, over Texas and the Gulf of Mexico. These winds come on after but short warning, and usually follow light southerly breezes and warm, moist weather. The indications of a norther are a thick bank of dark clouds in the north or northwest with lightning, falling barometer, and lowering temperature; it begins with a strong squall, which usually strikes the observer when the bank of clouds is at an altitude of 45° above the horizon. During this squall the temperature may drop 20° in 10 minutes. After the first squall the wind gradually increases but does not reach its maximum velocity until after the barometer has begun to rise; the temperature, however, may drop as low as 18° F. The northers are more frequent and more strongly marked along the coast of Texas than eastward, but the general characteristics of these winds are alike all over the Gulf of Mexico; their duration is from one to four days, the latter being exceptional. There are two types of northers, known locally as "dry norther" and "wet norther;" the indications are practically the same for both, except that a wet norther is usually preceded by rain, perhaps a thunderstorm; the shift of wind northward is more sudden and the squall accompanying the shift generally heavy. This type is confined mostly to the eastern part of the Gulf and is not as common as the other. Northers are not dangerous for large vessels, but small vessels are sometimes blown offshore; they affect, however, the depth of water in the harbors and on the bars by blowing the water offshore; in some cases the water will be lowered 4 feet. This should be borne in mind by vessels attempting to enter the harbors on the Gulf coast during or just after a norther.

**Southeast gales** are dangerous to shipping along the Gulf coast of the United States westward of Apalachee Bay. They are liable to occur at any time of the year, but are most dangerous in winter and early spring. During a heavy southeaster the bars at the entrance

to the harbors are made impassable for deep-draft vessels on account of the heavy sea which breaks in depths of about 4 fathoms. The usual local indication of a southeaster is a breeze freshening at ENE or E and hauling southward, accompanied by a falling barometer, a rising temperature, and an increasing swell. The lowest reading of the barometer is usually reached immediately after the wind gains its maximum velocity at SE. When the wind hauls southward of SE it is an indication that the gale is breaking, which is usually followed by heavy squalls; as it hauls westward of S first rain squalls, and then clearing weather, may be expected, unless, as is sometimes the case, the southeaster be followed by a norther. Southeast gales raise the water in the harbors along the Gulf coast, in some cases, to a height of 6 feet above the normal. Along the west coast of Florida, from Cape Romano to Apalachee Bay, southeast gales are not so dangerous to shipping; vessels well found in ground tackle can anchor in shoal water under the lee of the land and hold on until the gale abates.

**West India hurricanes.**—Occasionally during July, August, September, and October, and at rare intervals in June and November, cyclonic storms, known as hurricanes, may be encountered in the Gulf of Mexico. In addition to a motion around its center a hurricane has a progressive motion, following a track which, in the part of the Gulf of Mexico treated in this volume, usually has a direction between N and E, although some have been known to travel in a direction westward of N. This progressive motion varies in velocity, but is said to average about 300 miles in 24 hours; the diameter of a hurricane may vary from 100 to 300 miles, the diameter of its center being also variable. Shipping and property in or near the center of a hurricane seldom escape without damage or destruction, as, in addition to the force of the wind, it may be that a wave, moving forward like a tidal wave at the rate of the hurricane's progress, accompanies the hurricane in its track; this causes sudden inundations along the low shores of the Gulf of Mexico lying in the track of the hurricane, and endangers shipping and property. During the hurricane season the mariner should note every change in the weather signs and carefully watch the barometer for indications of a hurricane, so as to take every precaution to avoid it when at sea, or to make preparations for riding it out in safety when at anchor in port.

#### TIDES FROM KEY WEST TO MISSISSIPPI DELTA.

Tropic tides are those high and low waters which occur near the times when the moon attains its greatest declination either north or south. The tropic lunitidal intervals are marked *a* and *b*.

*a* indicates that an upper transit (that is, upper culmination or meridian passage) is to be used when the declination is north or a lower transit when the declination is south.

*b* indicates that a lower transit is to be used when the declination is north or an upper transit when the declination is south.

The plane of reference referred to in the table is the plane to which soundings on United States Coast and Geodetic Survey charts are reduced, commonly termed the plane of mean low water.

At places where the tides are chiefly diurnal (that is, where there is but one high water and one low water per day, when the moon's declination is considerable) the semidaily portion of the tide becomes apparent and controls the tide when the moon is upon or near the Equator. The intervals and ranges of these semidaily tides are inclosed in brackets.

Excepting a period extending from two days before the time of the moon's crossing the Equator to two days after such time, tropic intervals are usually preferable to mean intervals for ascertaining the times of the tides from the times of the moon's transits.

Lunital interval is the number of hours and minutes after the meridian passage of the moon to the following high or low water.

Station.	Lunital interval.					
	Mean tide.		Tropic tides.			
	High water.	Low water.	Higher high water.	Lower high water.	Lower low water.	Higher low water.
	H. m.	H. m.	H. m.	H. m.	H. m.	H. m.
Key West Harbor.....	9 52	3 08	9 160	10 280	3 540	2 220
Northwest Passage Light.....	11 19	5 05	11 000	11 380	5 330	4 370
Dry Tortugas.....	10 00	3 37	9 030	10 570	4 300	2 440
Content Key.....	11 28	5 37	11 200	11 360	6 060	5 090
Cape Sable.....	1 05	7 26	0 560	1 140	7 550	6 580
Shark River (mouth of).....	0 55	7 17	0 470	1 030	7 450	6 490
Lossman River entrance.....	0 46	7 08	0 380	0 540	7 240	6 420
Round Key.....	0 25	6 46	0 170	0 330	7 140	6 180
Coon Key.....	0 20	6 40	0 100	0 300	7 100	6 100
Punta Haza, San Carlos Bay.....	12 19	6 12	12 060	0 070	6 550	5 290
Fort Myers.....	1 16	8 00	2 000	0 320	9 500	6 100
Captiva Pass.....	0 40	6 20	0 250	0 550	7 100	5 300
Cape Haza, Charlotte Harbor.....	1 20	7 00	1 050	1 350	7 800	6 100
Mouth of Peace River, Charlotte Harbor.....	2 00	7 40	1 470	2 130	8 250	6 550
Sarasota.....	12 15	5 38	11 190	0 450	6 080	5 080
Egmont Key, Tampa Bay.....	11 32	5 07	10 330	0 060	5 390	4 330
Tampa (Hillabero Bay).....	1 20	8 50	0 330	2 070	9 150	8 250
Anclote Anchorage.....	12 20	6 05	11 210	0 440	6 520	5 280
Bayport.....	0 34	7 36	0 120	1 200	8 010	7 110
Chambers Island, Withlacoochee River.....	0 45	7 31	0 000	1 300	7 550	7 070
Cedar Keys (Way Key).....	0 55	7 26	0 100	1 400	7 800	7 020
St. Marks Light.....	1 29	7 46	0 300	2 280	8 030	7 290
Dog Island (west end).....	12 15	5 55	10 450	1 200	9 140	2 850
St. Vincent's Island, West Pass.....	12 09	5 54	10 250	1 250	9 420	2 050
St. Josephs Point.....	12 12	5 47	10 300	1 200	9 320	2 020
Warrington Navy Yard, Pensacola.....	12 09	5 01	10 100	1 430	9 230	0 390
Pensacola (Jefferson Street).....	12 21	5 11	10 300	1 470	9 190	1 030
Bohemia, Escambia Bay.....	12 54	5 42	10 550	2 280	10 020	1 230
Mobile Point (Fort Morgan).....	11 48	3 44	10 000	1 110	9 050	10 480
Mobile (St. Francis Street Wharf).....	11 47	7 02	12 250	8 340	10 580	8 050
Horn Island.....	12 00	5 40	10 100	1 250	9 350	1 450
Biloxi.....	10 57	5 35	10 500	3 290	8 040	3 480
East Island.....	10 40	7 01	10 500	3 130	8 530	5 080
East Rigolet Lighthouse, Lake Borgne.....	12 10	8 45	11 000	5 450	12 050	5 250
Port Bads.....	11 25	5 12	8 450	1 400	7 340	2 800
Carrillon, Mississippi River (annual fluctuations).....	(1)	(1)				

<sup>1</sup> About Apr. 20.

<sup>2</sup> About Nov. 25.