Chart Coverage in Coast Pilot 4—Chapter 6
NOAA's Online Interactive Chart Catalog has complete chart coverage
http://www.charts.noaa.gov/InteractiveCatalog/nrnc.shtml
80°W
79°30'W
79°W
78°30'W
78°W
33°30'N
33°N
NORTH CAROLINA
SOUTH CAROLINA
Southport
Cape Fear
LITTLE RIVER INLET
Myrtle Beach
LONG BAY
MURRELLS INLET
INTRACOASTAL WATERWAY
NORTH INLET
Georgetown
WINYAH BAY
Cape Romain
BULLS BAY
CAPERS INLET
DEWEES INLET
Charleston
ATLANTIC OCEAN

Cape Fear to Charleston Harbor

(1) This chapter describes the coast of North and South Carolina from Cape Fear to Charleston Harbor.

(2) Also discussed are the deepwater ports of Charleston and Georgetown, SC; several smaller ports of which Wando and Mount Pleasant are the more important; Winyah Bay and its tributary rivers; the waters of Ashley, Wando and Cooper Rivers and their tributaries; several of the minor rivers; and the shallow inlets that make into this section of the coast, including Shallotte, Little River, Dewees, North, Price and Capers.

(3) The section of the Intracoastal Waterway from Cape Fear River to Charleston Harbor is described in chapter 12.

(4) There are numerous wrecks along this section of the coast; the most dangerous are marked.

(5)

COLREGS demarcation lines

(6) The lines established for this part of the coast are described in **33 CFR 80.530** through **80.710**, chapter 2.

(7)

Weather

(8) This stretch of coast lies close to one of the main winter storm tracks while tropical cyclones are infrequent but dangerous visitors. Along with rough seas, fog can be a problem in winter.

(9) During December, January and February, extratropical cyclones from the Gulf of Mexico often move across northern Florida and then northeastward, just off the South Carolina coast on their way to Cape Hatteras. While these storms, and frontal systems from more northerly storms, produce gale force winds that occur less than 5 percent of the time, wave heights of 8 feet (2.4 m) or more occur 20 to 30 percent of the time and wave heights of 25 feet (7.6 m) have been recorded. Weather conditions can also get rough in April when warm air from the Gulf of Mexico collides with cold arctic air.

(10) Occasionally warm tropical air blows across the cooler waters that lie shoreward of the Gulf Stream in this area. Visibilities below 0.5 mile (0.9 km) are reported about 1 to 3 percent of the time in winter, compared to less than 1 percent farther out. These poor visibilities are most likely from December through March.

(11) Tropical cyclones are most likely along this coast from June through October. Although a few have occurred in May, November and December, the peak threat is in September and October. On the average about one or two storms threaten this coast each year. Many of these tropical cyclones have recurved and are heading northward or northeastward at about 15 to 18 knots. Hurricane force winds are most likely when the storm is over open water.

(12)

North Atlantic Right Whales

(13) Endangered North Atlantic Right Whales often occur within 30 miles of the North Carolina and South Carolina coasts from November through April. (See **North Atlantic Right Whales**, indexed as such, in chapter 3 for more information on right whales and recommended measures to avoid collisions.)

(14) All vessels 65 feet or greater in length overall (LOA) and subject to the jurisdiction of the United States are restricted to speeds of 10 knots or less in a continuous 20-nm Seasonal Management Area between November 1 and April 30. The area is defined as the waters contained by the following points:

(15)

North Atlantic Right Whale Management Area
From Wilmington, NC to beyond Savannah, GA

Point	Latitude	Longitude
A	34°10.5'N.	77°49.2'W.
B	33°56.7'N.	77°31.5'W.
C	33°36.5'N.	77°47.1'W.
D	33°28.4'N.	78°32.5'W.
E	32°59.1'N.	78°50.3'W.
F	31°50.0'N.	80°33.2'W.
G	31°27.0'N.	80°51.6'W., thence due west to the shore.

See **50 CFR 224.105** in chapter 2 for regulations, limitations, and exceptions.

(16)

ENC - US3SC10M
Chart - 11520

(17) From Cape Fear the coast curves gradually westward and southward for 80 miles to Winyah Bay Entrance. This section of the coast is a sand beach, with numerous sand dunes, separated from the heavily wooded mainland by small streams and marshes. From offshore, the woods appear to extend to the outer beach. The coast is clear, and a depth of 3 fathoms can be taken to within a mile of the beach, except at Murrells Inlet where, about 2 miles offshore, there is a 16-foot spot. The 10-fathom curve is from 11 to 25 miles offshore, and inside it the water shoals gradually as the shore is approached.

(18) The character of the coast changes from Winyah Bay to Charleston Harbor. Here the coastline trends southwestward for about 45 miles and is a border of sandy barrier islands with off-lying shoal areas that include Romain Shoal, Bull Breakers and Rattlesnake Shoal. These shoal areas should be given a wide berth. The 10-fathom curve along this section of the coast extends from 11 to 21 miles offshore.

(19)

Lockwoods Folly Inlet to Tubbs Inlet

(20) **Lockwoods Folly Inlet** is entered over a shifting bar 11 miles westward of Cape Fear River. Strangers should not attempt it as the inlet is enclosed by breakers at virtually all stages of tide and wind. Due to frequent changes, mariners are advised to seek local knowledge before entering the inlet. The approach to the inlet is marked by a lighted whistle buoy. The buoys marking the inlet are not charted, because they are frequently shifted in position to mark the best water. There are three charted wrecks, all showing at low water, near the entrance to the inlet; two are at the mouth, and the other is about 0.3 mile to the westward 200 yards offshore. A high sand dune is east of the inlet.

(21) **Lockwoods Folly River** is navigable from the ocean to the Intracoastal Waterway, at the head of the marshes inside the inlet, and thence to a fixed highway bridge at **Supply**, which is at the practical head of navigation 16 miles above the waterway. The channel is narrow, bordered on both sides by oyster bars covered at high water, and not maintained. The river channel is marked by daybeacons to a pier at **Varnumtown**, about 1.6 miles northward of the Intracoastal Waterway where gasoline and water can be obtained. The river is used by commercial shrimp boats to Varnumtown.

(22) An **explosives anchorage** is centered about 3.5 miles southwestward of Lockwoods Folly Inlet. (See **33 CFR 110.170**, chapter 2, for limits and regulations.)

(23) **Shallotte Inlet**, 19 miles westward of Cape Fear River, is entered over a shifting bar and has a winding entrance.The bar channel is subject to continual change, and the buoys marking it are shifted frequently to mark the best water and therefore not charted. The inlet, used only by local fishermen and not recommended to strangers, provides an access from the sea to the Intracoastal Waterway and to **Shallotte River**. The river is navigable to the town of **Shallotte**, about 8 miles above the inlet. The river from the Intracoastal Waterway to Shallotte is shoal to bare in several areas; extreme caution is advised. The mean range of tide is about 3 feet at Shallotte.

(24) Berthage, electricity, gasoline, water, ice and wet and dry storage are available at the marina on the west bank of Shallotte River, about 0.6 mile above the Intracoastal Waterway. Hull and engine repairs can be made. The facility at Bowen Point is also described with the Intracoastal Waterway in chapter 12.

(25) **Tubbs Inlet**, 6 miles westward of Shallotte Inlet, is seldom used. It is unmarked and not recommended to strangers.

(26)

Little River Inlet to Murrells Inlet

(27) **Little River Inlet**, 28 miles westward of Cape Fear River, is entered between **Waties Island** on the west and **Bird Island** on the east. A lighted buoy is off the entrance and several dangerous wrecks are south and west of the entrance. The entrance is protected by jetties, each marked on the outer end by a light. The bar channel is subject to continual change and the buoys marking it are shifted frequently to mark the best water and therefore not charted. Once past the jetties, a marked channel leads northwestward for about 1.8 miles to a junction with the Intracoastal Waterway. There is a large sand bar centered at 33°51'25"N., 78°32'50"W. Extreme caution is advised when entering and leaving the inlet. The mean range of tide at the inlet is about 5 feet.

(28) Three fish havens, marked by a buoy, are about 2.5 miles southeastward of Little River Inlet in about 38°48.9'N., 78°30.2'W.

(29) Between Little River Inlet and Murrells Inlet are many piers, most of which are marked by lights and extend out some 400 to 1,000 feet into the ocean.

(30) **Myrtle Beach**, a summer resort, is on the outer beach nearly 20 miles southwestward of Little River Inlet and 32 miles north-northeastward from Georgetown Light. Numerous tanks in the area are conspicuous. Hotels and motels along the beach are also prominent. Several radio antennas close-to, marked by red lights, can be seen seaward.

(31) **Murrells Inlet**, 12 miles southwest of Myrtle Beach and 20 miles north-northeastward of Georgetown Light, connects with **Main Creek** and **Oaks Creek**, which drain a considerable area of marsh between the mainland and the outer beach. The entrance to the inlet is protected by jetties. A lighted buoy is off the entrance, and lights mark the outer ends of the jetties. The dredged entrance channel and the channel through Main Creek to a turning basin about 2.9 miles above the entrance are marked by lights and daybeacons. Safe passage is marked by aids to navigation to about 33°32'00"N., 79°02'05"W. Inside the inlet, where the channel turns sharply to northward into Main Creek, the tide rips are strong at full ebb or flood current. Local fishermen use this inlet, but strangers should not enter without local knowledge. An unmarked shoal area to 6 feet was reported in 2023 just southwest of the entrance channel; caution is advised.

(32) There are three marinas on Main Creek; two are at the landing, and the other is eastward of the landing on the west side of the barrier beach. Berthage, electricity, gasoline, diesel fuel, water, ice, launching ramps and some marine supplies are available at all facilities; hull repairs can be made at all the facilities. Depths in the approaches and alongside the piers at the marinas are

(37)

Winyah Bay Entrance, South Carolina
Image courtesy of United States Coast Guard (2014)

reported to be about 3 feet. Restaurants and motels are available.

(33) Three fish havens, marked by buoys, are about 3.8 miles east-southeastward, about 10 miles southeastward and about 5.3 miles southward of Murrells Inlet.

(34)

Winyah Bay to Great Pee Dee River

(35) **North Inlet**, about 14 miles southward of Murrells Inlet and 6 miles northward of Georgetown Light, connects with Winyah Bay by way of both **Town Creek** and **Jones Creek**. Some local fishermen use the inlet, but strangers should not. In 2010, the controlling depth over the bar was 3.3 feet. The inlet and the creeks are unmarked. There is little water on the Winyah Bay side, and navigation is restricted to shallow-draft craft. In 1983, Jones Creek, the southerly of the two, was found to bare in places, and numerous oyster bars were reported.

(36) **Winyah Bay** is the first harbor southward of Cape Fear River, a distance of 70 miles, that is navigable for vessels drawing up to 18 feet. It is entered between **North Island** and **South Island.** The entrance is protected by jetties. The entrance is not safe for small craft except in favorable weather. Heavy tide rips prevail near the ends of the jetties, and heavy seas run in moderate weather. The south jetty is visible only at low water.

(38) **Georgetown**, 14 miles above the entrance to Winyah Bay, is on the north bank about 1.5 miles above the entrance to Sampit River. It is 392 miles south of Norfolk and 247 miles north of Jacksonville by coastwise routes. It has schools, banks, motels, markets, restaurants, a hospital and many landmarks of historical interest.

(39)

Prominent features

(40) **Georgetown Light** (33°13'21"N., 79°11'06"W.), 85 feet above the water, is shown from a white cylindrical tower on the north side of Winyah Bay entrance. Four 400-foot stacks, at a generating plant west of Winyah Bay and about 4 miles southwestward of Georgetown, have prominent strobe lights at the tops. There are few other prominent objects in the vicinity, and the land is low on both sides of the entrance.

(41)

COLREGS demarcation lines

(42) The lines established for Winyah Bay are described in **33 CFR 80.703**, chapter 2.

(43)

Channels

(44) Federal project depth is 27 feet from the sea to South Island Bend; thence 27 feet to Range C; thence 27 feet to Range D; thence the project provides for a depth of 27 feet to the turning basin off the three deepwater terminals on Sampit River. The channel is well marked by

lighted ranges, buoys and other aids. South Island Bend Channel is subject to shoaling and the buoys marking it have been shifted to mark the best water. (For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts. Surveys and channel condition reports are available through a USACE hydrographic survey website listed in Appendix A.)

(45) An unmarked dredged side channel leads from the main river channel along the easterly and northerly sides of the horseshoe-shaped bypassed portion of Sampit River fronting the city of Georgetown to the north end of another turning basin on the westerly side of the horseshoe. Mariners are advised to exercise caution to avoid submerged pilings along the east side of the channel. The turning basin, marked by lights and buoys, can also be entered from the main river channel. (For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts. Surveys and channel condition reports are available through a USACE hydrographic survey website listed in Appendix A.) The channel has a tendency to shoal between dredgings.

(46)

Anchorages

(47) There are no anchorages in Winyah Bay or Sampit River for deep-draft vessels. The recommended anchorage, as reported by the local pilots, is 0.5 mile northeast of the sea buoy (Winyah Bay Lighted Whistle Buoy WB) in about 6 fathoms, sand and mud bottom.

(48)

Dangers

(49) The principal dangers in the approach to Winyah Bay are **East Bank**, covered 6 feet and marked by a buoy, about 2 miles south of the end of the south jetty; an unmarked shoal, with a least depth of 14 feet, about 4 miles southward of East Bank; **Hector Wreck**, cleared to a depth of 9 feet and marked by a lighted buoy, about 12 miles southward of the sea buoy (Winyah Bay Lighted Buoy WB); a wreck, with 19 feet over it and marked by a lighted bell buoy, about 13 miles southeastward of the sea buoy; a fish haven marked by private buoys about 5 miles northeast of the sea buoy; and obstructions, reported covered 26 feet, 300 yards northward of the sea buoy. Vessels approaching the entrance at night should remain in the vicinity of the sea buoy until the pilot boards. Some vessels, mistaking Winyah Bay Range B Lights for Range A Lights, have approached the entrance too closely at night and only with difficulty have cleared the outer end of the south jetty. Mariners are advised to familiarize themselves with the characteristics of these ranges before making the approach.

(50) The local pilots report that at high water the north jetty at the entrance to Winyah Bay is partially submerged and only the three rock mounds along the south jetty are visible. At low water, parts of the south jetty just inshore of the outermost mound remain submerged. Extreme caution is advised. The pilots also report that the southwest tip of North Island just inside the jetties is building up and is encroaching southward to near the easterly edge of the channel; caution is advised.

(51)

Current

(52) The tidal currents are affected by variations in the flow of the tributary rivers. The velocity is greatest between the jetties where the average is between 2 and 3 knots. Tidal ebb currents were reported in the area from 6 to 7 knots, most notable in Range C and South Island Bend; the sets of which are along axis to the channels. The set is alongshore at the entrance close to Lighted Bell Buoy 4. During freshets in the rivers, also with westerly winds, the velocity of the ebb current between the jetties is reported to be very strong at times and the channel buoys between the jetties are nearly towed under. In the channel in Winyah Bay, from the entrance to Georgetown, the tidal current averages about 2 knots, but during freshets the ebb current is considerably stronger and the flood weaker. Near the mouth of Sampit River, the tidal current averages about 1 knot with somewhat stronger ebb current velocities during freshets. When approaching the turning basin from Sampit Point Channel, it has been reported that the flood current sets towards South Carolina State Ports Authority Terminal Pier 31 with considerable velocity and the ebb current sets towards the small island northeast of State Pier 31. Outside the jetties, with fresh to strong northeast winds, a strong southerly current is reported to set across the entrance channel and with southerly and southwesterly winds a northerly set is experienced. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(53)

Weather, Myrtle Beach and vicinity

(54) The climate is usually mild and except in severe winters little ice is seen and then only along the banks. The channels are never obstructed. Fog is observed during the fall and spring and usually sets in during southwesterly weather, when it may persist for several days. Nighttime fog, due to a large drop in temperature, usually burns off in the forenoon. Sea fog sometimes hangs offshore or in the entrance when it is clear inside.

(55) Winter temperatures average near 60°F (15.6°C) during the day and in the upper 30's (2.8° to 3.9°C) at night. Temperatures drop to freezing or below only on about 28 days per year; a 4°F (-15.6°C) temperature was recorded one February. Precipitation averages about 3 to 4 inches (76 to 102 mm) per month during the winter and falls on 4 to 6 days per month; snow is rare and about one-half inch (13 mm) is recorded annually.

(56) Summer maximum temperatures usually climb to the upper 80's (30.6° to 31.7°C), while minimums range

in the 70's (21.7° to 22.8°C). Temperatures reach 90°F (32.2°C) or higher on about 55 days annually; a reading of 104°F (40°C) was recorded in both June and August. June through August is generally considered the rainy season; about half of the 50-inch (1,270 mm) annual average occurs during these months.

(57) Since 1842, 55 tropical storms have come within 50 miles (93 km) of Myrtle Beach, South Carolina, 18 of these storms since 1950. The most noteworthy likely was Hurricane Hazel, which made landfall just north of Myrtle Beach near the border with North Carolina around mid-day on October 15, 1954. With a forward speed of nearly 50 mph (80 km/h), Hazel destroyed nearly everything in its path. Making landfall north of Myrtle Beach lessened damage to the local area, but damage was catastrophic at the nearby North Carolina communities.

(58)

Routes

(59) Vessels from the northward usually make for the sea buoy from Frying Pan Shoals Lighted Buoy 16. When coming from the southward, they should stay outside Cape Romain Shoal Buoy 6CR and Hector Wreck Lighted Buoy WR4, shaping for the entrance, taking care to avoid the wreck, marked by a lighted bell buoy, about 9 miles east-northeastward of Hector Wreck Lighted Buoy WR4. Some vessels in closing the entrance have mistaken the ranges and come too close to the south jetty; they should remain in the vicinity of the sea buoy until the pilot boards.

(60)

Pilotage, Georgetown

(61) Pilotage is compulsory for all foreign vessels and for U.S. vessels under register in the foreign trade. Pilotage is optional for U.S. vessels in the coastwise trade that have on board a pilot licensed by the Federal Government. Pilotage is limited to vessel drafts of 21 feet or less.

(62) Georgetown Bar & Harbor Pilots, P.O. Box 594, Georgetown, SC 29440; telephone 843–527–4136, FAX 843–527–4177; serve the entrance through the bar, Winyah Bay and vicinity.

(63) The pilot boat, WINYAH BAY, is 48 feet long and has a black hull and white superstructure. The alternate pilot boat, PILOT FISH, is 31 feet long and has a black hull and white superstructure. The pilot boats monitor VHF-FM channel 16 and use channel 9 as a working frequency. Vessels are requested to contact the pilot boat approximately 2 hours before scheduled inbound transit for pilot boarding information. Pilots will board day or night from the pilot boat just east of the sea buoy, Winyah Bay Lighted Whistle Buoy WB in 33°11'37"N., 79°05'11"W.

(64) Arrangements for pilots should be made in advance by telephone and/or fax, by radiotelephone or through ships' agents.

(65)

Towage

(66) Tugs up to 2,000 hp are available in Georgetown, and up to 4,000 hp are available with 24-hour notice. Tugs are required for docking and undocking large oceangoing vessels; tugs meet vessels just below Georgetown. Arrangements for such services are usually made well in advance through ships' agents.

(67)

Quarantine, customs, immigration and agricultural quarantine

(68) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(69) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.) There is a county hospital at Georgetown.

(70) Georgetown is a **customs port of entry.**

(71)

Coast Guard

(72) Georgetown Coast Guard Station is on the west bank of the Great Pee Dee River about 0.25 mile south of U.S. Route 17 highway bridge.

(73)

Harbor regulations

(74) The South Carolina State Ports Authority exercises jurisdiction over the port facilities through the manager of the State Ports Authority Terminal at Georgetown. The manager's office is at the terminal.

(75)

Wharves

(76) Only the major port facilities at Georgetown are described. The wharves have highway connections, and most have railroad connections and water and electrical shore power available. General cargo is handled at the port by ship's tackle; special handling equipment, if available, is mentioned in the description of the particular facility. The alongside depths given for each facility described are reported depths. (For information on the latest depths, contact the manager.) There are several seafood-handling and small-craft service wharves along the city waterfront.

(77) **Georgetown Terminal Pier 32** (33°22'00"N., 79°17'30"W.): northwest side of bypassed portion of Sampit River; marginal wharf with 600-foot face; 712 feet usable with dolphins; 27 feet alongside; deck height, 15 feet; cranes to 90 tons; handles scrap metal, ore, charcoal, and steel products; owned by South Carolina State Ports Authority and operated by Georgetown Steel Corp.

(78) **Georgetown Terminal Pier 31, Berth 2** (33°21'47"N., 79°17'19"W.): south-southwest side of bypassed portion of Sampit River; 700-foot face; 27 feet alongside; deck height, 10 feet; handles conventional general cargo, salt, lumber, and steel; operated by South Carolina State Ports Authority and International Salt Co.

(79) **Georgetown Terminal Pier 31, Berth 1** (33°21'35"N., 79°17'15"W.): north side of turning basin;

marginal type wharf with 500-foot face; 27 feet alongside; deck height, 12 feet; handles conventional general cargo, lumber, steel, and paper products; operated by the South Carolina State Ports Authority and Marine Contracting and Towing Co.

(80) **Pier 31 Cement Berth**: on north side of turning basin just west of Pier 31, Berth 1 92-foot face; 192 feet of berthing space with dolphins; 27 feet alongside; deck height, 11 feet; handles cement; operated by Delta Cement Co.

(81) **International Paper Co., Ship Dock:** north side of turning basin, about 350 yards westward of Pier 31: marginal type wharf with 475-foot face; 27 feet alongside; deck height, 10 feet; handles paper products.

(82) **International Paper Co., Upper Wharf:** north side of Sampit River about 0.9 mile westward of Pier 31; 350- and 153-foot faces, 1,653 feet usable berthing space with dolphins; 10 feet alongside; deck height, 10 feet; mooring barges.

(83)

Supplies

(84) Marine supplies and provisions can be obtained at Georgetown. Diesel fuel is trucked to the deepwater piers or barged in from Charleston.

(85)

Repairs

(86) There are no facilities available at the port of Georgetown for making major repairs or drydocking large, deep-draft vessels; the nearest such facilities are at Charleston, SC. The International Paper Co. has two marine railways at its marine repair piers on the north side of Sampit River, about 0.3 mile westward of the State Ports Authority Terminal. These facilities are for maintaining and repairing company-owned floating equipment but are available to the public in an emergency or by prior arrangement. Each railway can handle vessels up to 95 tons.

(87) There are machine repair shops in Georgetown; minor above-the-waterline hull and engine repairs can be made.

(88)

Small-craft facilities

(89) There are several facilities on the east side of the bypassed portion of the river along the city waterfront. Gasoline, diesel fuel, berthage with electricity, water, ice, provisions, marine supplies, pump-out station and wet and dry storage are available. A 7½-ton lift and hull and engine repairs are available. Another marina is at **Belle Isle Garden** on the west side of Winyah Bay, about 3.3 miles below Georgetown. Berths, electricity, pump-out station, gasoline, diesel fuel, ice, water, a launching ramp and marine supplies are available. In 2011, the reported approach depth was 4 feet.

(90)

Communications

(91) Georgetown is served by several good highways and by the Class II railroad.

(92) Above Georgetown the principal landing on **Sampit River** is at **Sampit** about 10 miles above the river mouth. U.S. Routes 17 and 701 highway bridge crossing the river at Georgetown has a fixed span with a clearance of 65 feet. The overhead power cable about 0.9 mile above the bridge has a clearance of 61 feet. In 1975, the reported controlling midchannel depth from the bridge to **Sampit Landing** was 7½ feet. Sampit River above Georgetown is not marked.

(93) **Waccamaw River** rises at Lake Waccamaw, NC, and flows southwestward into Winyah Bay just above Georgetown. The river is little used, except for that section that is a part of the route of the Intracoastal Waterway described in chapter 12. The route of the waterway leaves Waccamaw River near Enterprise Landing, about 24 miles above the mouth.

(94) From Enterprise Landing to near Conway, 36 miles above the mouth, the river is marked by daybeacons. Above Conway the river is obstructed by logs, snags and sandbars. The head of the tidal reach is at Bellamys Landing, 80 miles above the mouth. The freshet range at Conway is about 13.5 feet.

(95)

Bridges

(96) About a mile below Conway, the US 501 Bridge, a fixed bridge with a clearance of 35 feet, crosses the Waccamaw River. The US 501 (business) Bridge, at Conway, is a fixed bridge with a clearance of 36 feet.

(97)

Cables

(98) An overhead power cable with a clearance of 76 feet crosses the Waccamaw River about 3 miles above Enterprise Landing. An overhead cable of unknown clearance crosses the river about 0.8 mile below the US 501 Bridge. An overhead cable of unknown clearance crosses the river at Savannah Bluff, about 400 yards below the US 501 Bridge. An overhead power cable with a clearance of 59 feet crosses the river just above the US 501 Bridge.

(99) **Great Pee Dee River** rises in the North Carolina mountains and flows generally southeastward into Winyah Bay just westward of Waccamaw River. A marina at **Georgetown Landing** on the west side of the Great Pee Dee River, just below the U.S. Route 17 fixed bridge, provides berths, electricity, gasoline, diesel fuel, water, ice, pump-out station, wet storage and marine supplies. In 2011, the reported approach depth was 12 feet. U.S. Route 17 fixed highway bridge over Great Pee Dee River just above the mouth at Georgetown has a clearance of 20 feet. About 300 yards north, the fixed portions of the former Route 17 swing bridge remain on both sides of the channel as fishing piers. The channel between the piers is marked by daybeacons. The velocity of the current at the former bridge is about 1 knot. At **Yauhannah**, 28 miles above the mouth, the river is crossed by U.S. Route 701 fixed highway bridge with a clearance of 25 feet.

(100) The railroad bridge near**Poston**, about 62 miles above the mouth, is the head of commercial navigation. The river is unmarked.

(101) **Black River** empties into Great Pee Dee River from northward about 3 miles above the mouth of the latter and is navigable for a distance of 44 miles. The river is unmarked. The bridges over Black River have minimum channel widths of 16 feet and minimum clearances of 1 foot. (See **33 CFR 117.1** through **117.49**, chapter 2, for drawbridge regulations.) The mean range of tide in Great Pee Dee River is 3.3 feet at the mouth and 0.2 feet at the mouth of Little Pee Dee River, 33 miles above. **Mingo Creek** flows into Black River about 22 miles above the mouth of the latter. When last ascertained, the controlling depth in this creek was 8 feet. The mean range of tide is 2 feet, and the freshet range is 4.5 feet.

(102)

Santee River to Bulls Bay

(103) Between Winyah Bay and Charleston Harbor are several rivers and inlets that are changeable in character, and local knowledge is essential to enter even under favorable conditions. Some dry at low water, and in the others the depths range between 1 and 6 feet. Suitable anchorages for small craft can be found inside these inlets or in their tributary waters. At most entrances, the channels trend in northerly directions, and shoals and breakers generally mark the channel edges inside the bars. Entrances to North Santee River and Bulls Bay are less difficult of navigation than the other entrances in this locality, but these should be entered only at high water under favorable weather conditions.

(104) Between Winyah Bay entrance and Cape Romain, broken ground, with depths of less than 5 fathoms, extends 11 miles offshore. In addition, East Bank, Hector Wreck and a 14-foot spot about 6 miles offshore, all previously mentioned as dangers in the approach to Winyah Bay, should be avoided.

(105) **Santee River**, formed by the confluence of **Congaree River** and **Wateree River**, flows generally southeast and enters the ocean between Winyah Bay and Cape Romain. Its two mouths, known as **North Santee River** and **South Santee River**, are both obstructed by shifting bars with little depth. In the tidal reach are several privately owned landings that are used infrequently. The river is closed to navigation at Wilson Landing, 75 miles above the mouth, by the Santee Dam.

(106) Vessels bound for Santee River are advised to enter by way of Winyah Bay and the Intracoastal Waterway. Navigation between the coast and points on Santee River above the dam is possible by way of Cooper River and the Santee-Cooper project. The U.S. Route 17 twin fixed highway bridges over North and South Santee Rivers, about 12 miles above the mouths, have clearances of 29 feet over North Santee River and 15 feet over South Santee River.

(107) **Cape Romain**, the southeasterly extremity of Cape Island, is about 14.5 miles southwestward of the entrance to Winyah Bay. **Cape Romain National Wildlife Refuge**, a Marine Protected Area (MPA), extends about 20 miles along the coast from Cape Romain to Bull Island.

(108) **Cape Romain Shoal**, with depths of 4 to 18 feet over it, extends 4 miles southeastward from Cape Romain. The outer end of the shoal is marked by a buoy. The twin towers of an abandoned lighthouse, the taller 165 feet high, stand on the east end of **Lighthouse Island**, northwestward of Cape Romain. A 335-foot microwave tower and a 108-foot lookout tower at McClellanville, about 6 miles inland, are also conspicuous from seaward.

(109) **Cape Romain Harbor**, with depths of 1 to 2 feet, is an unimportant cove indenting the western shore of **Cape Island**. The harbor, used only by small local fishing craft, is approached from northward through a narrow, crooked, unmarked channel leading from sea around the north end of Cape Island. In 1983, the reported controlling depth was 3 feet. In 1983, the approach leading from the south between Cape Romain and Lighthouse Island to Cape Romain Harbor was reported closed. **Casino Creek** is one of several creeks and connecting passages that lead from inside of Cape Island to the Intracoastal Waterway; in 1983, the reported controlling depth was 1½ feet in Casino Creek. The use of the creeks requires local knowledge; the chart is the best guide.

(110) **Five Fathom Creek**, about 4.2 miles westward of the southwestern extremity of Cape Island, is entered westward of **Sandy Point** at the western end of **Raccoon Key**.The creek, narrow and crooked at its upper end, is marked by a light and daybeacons. In 2014, the entrance to Five Fathom Creek from Bulls Bay had a reported controlling depth of 4 feet; thence in 1983, a reported controlling depth of 3½ feet to the Intracoastal Waterway. In 1985, shoaling to an unknown extent was reported just north of Sandy Point. The outer bar is subject to change; caution and local knowledge is advised.

(111) A dredged channel just northeast of Sandy Point at **Sandy Point Beach** connects to Five Fathom Creek through **Clark Creek**. The channel is marked by buoys.

(112) **Bulls Bay**, southwest of Raccoon Key, is entered between Sandy Point on the north and **Northeast Point** on the south. The bay is broad and shallow and has numerous shoals, many of which are bare at low water. A 56-foot steel skeleton fire lookout tower west of the bay is conspicuous from seaward. In 1983, the narrow channel into **Bull Creek**, at the southwest side of the bay, had a reported controlling depth of about 7 feet over the bar, thence 2 feet from **Northeast Point** to **Bull Narrows**. In 1983, it was reported that shoaling to bare extends 1.1 miles eastward from Northeast Point. The creek is used occasionally as an anchorage. Local knowledge is advised. **Bull Breakers** extend 4 miles southward from **Bull Island**, on the southwest side of the entrance to Bulls Bay, and are marked at their outer end by a buoy. The 131-foot steel skeleton lookout tower of the former Bull Island Lifeboat Station is prominent.

(125)

Charleston Harbor Entrance, South Carolina
Image courtesy of United States Coast Guard (2014)

(113)

Price Inlet to Breach Inlet

(114) **Price Inlet** (32°52.5'N., 79°39.1'W.), between Bull Island and **Capers Island**, had a reported depth of about 3 feet over the bar in 1983. The channel is unmarked, and breakers have been observed across the entire area. The controlling depth in **Price Creek** from the inner edge of the bar to the Intracoastal Waterway was reported to be 5 feet in 1983. The inlet, the best between Bulls Bay and Charleston, is used by local fishermen. With average weather conditions, there are heavy breakers on the shoal on the eastern side of the channel and small breakers on the west side. Good anchorage is available in Price Creek. An overhead power cable with a clearance of 85 feet crosses Price Creek about 0.5 mile above the mouth.

(115) **Capers Inlet**, between Capers Island and **Dewees Island**, in June 1983, had a reported depth of about 1½ feet over the bar, and breakers extended across the entire entrance. In June 1983, the reported controlling depth was 8 feet in **Capers Creek** from the inner edge of the bar to the Intracoastal Waterway. The channel is narrow and unmarked. Because of the shoal that extends eastward on the south side of the inlet and breaks the southwesterly seas, the channel can be entered when the wind is southwest. A shoal bare at about half tide extends southward along the eastern side of the inlet. There are numerous stumps and snags outside the high waterline in Capers Creek. An overhead power cable over Capers Inlet has a clearance of 86 feet.

(116) **Dewees Inlet**, between Dewees Island and Isle of Palms, had a depth of about 2 feet over the bar in 1983, thence deeper water inside to the Intracoastal Waterway via **Dewees Creek**. The channel is narrow, unmarked and seldom used. Breakers extend across the entrance to the inlet. An overhead power cable over Dewees Inlet has a clearance of 87 feet.

(117) A water tower at the pleasure resort near the southwest end of the Isle of Palms and a lookout tower on Dewees Island are prominent. An unmarked fishing pier projects seaward from the resort. Two wrecks, about 0.35 mile apart, are off the eastern shore of the Isle of Palms about 1.5 miles 107°30', and 1.6 miles 120°30' respectively, of the water tower. The wrecks are believed to be the remains of Confederate ships that were apparently sunk by Union forces as they sought to slip into blockaded Charleston Harbor; they are unmarked and are covered 6 feet and 4 feet, respectively. An obstruction, covered 9 feet and unmarked, is about 2.55 miles 125° from the water tower. Caution is advised in this area.

(118) **Breach Inlet** is between Isle of Palms and Sullivans Island. There is very little water over the bar, and breakers extend entirely across the entrance under almost all weather conditions. Currents are extremely strong in this

inlet. A highway bridge over the inlet has a fixed span with a clearance of 5 feet.

(119)

Charleston Harbor

(120) **Charleston Harbor**, 264 miles southwestward of Cape Hatteras and 65 miles northeastward of Savannah River, is the approach to the city of Charleston and to the Cooper, Wando and Ashley Rivers. The harbor is easy of access day or night in clear weather and is one of the best harbors of refuge on the South Atlantic coast. **Charleston Harbor Wildlife Sanctuary** is a Marine Protected Area (MPA).

(121)

Caution

(122) The areas generally to the east and southeast of Charleston Harbor are used extensively by the U.S. Navy and other military services to conduct various types of surface, subsurface and aircraft training exercises. Fleet Area Control and Surveillance Facility (FACSFAC), Jacksonville, FL, exercises cognizance of the operating areas, makes area assignments, ensures promulgation of firing notices, issues schedules and prescribes necessary additional regulations.

(123) The entrance to Charleston Harbor is between converging jetties. The north jetty is almost completely submerged at MHW. There are no lights on the jetties, and smaller craft approaching from the north close to shore at MHW should exercise extreme caution not to confuse the south jetty for the north jetty. It is recommended all vessels align seaward of Lighted Buoy 18 before final approach to the jetty entrance.

(124) **Charleston**, the largest port in South Carolina, is at the confluence of Cooper and Ashley Rivers. The distance from the end of the jetties to the southernmost wharves at Charleston is about 7 miles. The city is a center of a rich agricultural district for which it is the distributing point. Numerous manufacturing plants are in and near the city. The principal wharves are along the west bank of Cooper River and the east bank of the Wando River. Imports are building cement, plywood, wool, bananas, nonferrous ores, chemicals, fertilizer, frozen meats, automobiles, steel products, naval stores and petroleum products. Exports are soybeans, clay, paper products, corn, woodpulp, lumber, heavy machinery, chemicals, fertilizer, textiles, automobiles and general cargo.

(126)

Prominent features

(127) The entrance to Charleston Harbor is between converging jetties that extend nearly 3 miles seaward. Prominent to the northward of the entrance are several tanks on Sullivans Island and one on Isle of Palms and the Charleston Light.**Fort Moultrie** and the town of **Sullivans Island** are on the north side of the entrance; the 155-foot conical tower of the abandoned old Charleston Lighthouse on Morris Island is south of the entrance; **Fort Sumter** is on the southwest side of the channel just inside the entrance.

(128) The twin diamond-shaped towers of the (U.S. Route 17) Ravenel fixed bridge are reported to be 575 feet tall and clearly visible to the mariner before entering the channel. The bridge is brightly lit at night. Lighted buoys mark the west and east sides of the channel, respectively.

(129) **Charleston Light** (32°45'29"N., 79°50'36"W.) 163 feet above water, is shown from a triangular tower, upper half black, lower half white, on Sullivans Island.

(130)

COLREGS demarcation lines

(131) The lines established for Charleston Harbor are described in **33 CFR 80.710**, chapter 2.

(132)

Charleston Harbor Navigational Guidelines

(133) In recent years, a substantial number of oceangoing vessels of increased size and draft have begun calling at the Port of Charleston. Although the waterways of Charleston Harbor compare favorably with other ports of the same approximate volume of shipping, the maritime interests of the port have prudently considered the publication of a number of safe navigational practices and procedures that have evolved in recent years. These practices and procedures are known as the Charleston Harbor Navigational Guidelines.

(134) It is recommended that all vessels, particularly those that must navigate in the channel because of draft constraints, hereafter referred to as deep-draft vessels, strictly adhere to these guidelines. Nothing in them shall supersede nor alter any applicable laws or regulations. In construing and complying with these guidelines, regard shall be had to all dangers to navigation and collision and to any special circumstances, including the limitations of the vessels involved, that may make a departure from the guidelines necessary to avoid immediate danger.

(135) For purposes of these guidelines, **poor-handling vessels** are those that, because of their configuration, history of loss of controllability or steering characteristics or low power, are unable to consistently navigate within the channel half width or cannot maintain a speed of 8 knots through the water. If an adequate number of tugs are made fast to provide maneuverability, power and a capable speed through the water of at least 8 knots, the assisted vessel will not be considered a poor handling vessel. Tandem tows, except for small scows and nondescript vessels that operate outside the main channel, should not be attempted.

(136) For the purposes of these guidelines, the inbound approach to the (U.S. Route 17) Ravenel fixed bridge spans over Hog Island Reach commences at Lighted Buoy 28 on Rebellion Reach. Inbound vessels intending to transit the Cooper River upstream of the fixed bridge should give a security call on VHF-FM channel 13 upon entering Mount Pleasant range (32°44.4'N., 79°50.7'W.).

(137) Commercial vessels outbound from piers above the fixed bridge should give a similar security call when

unmoored or beginning the downbound transit. Poor-handling vessels intending to transit reaches of the Cooper River above Rebellion Reach should be prepared to delay their transit to allow other vessels to clear outbound or to allow full-powered and more maneuverable vessels to precede them.

(138) Inbound poor-handling vessels should not proceed in Rebellion Reach past Buoy 28 but rather should anchor or heave-to out of the channel to await the passage of outbound vessels or more maneuverable inbound vessels.

(139) Outbound poor-handling vessels should not depart their berths until inbound vessels have passed clear of their berths or until other vessels scheduled to depart have left their berths and have preceded them down the reaches of the Cooper River.

(140) The maritime interests at the Port of Charleston construe that the navigation safety regulations contained in Title 33, Code of Federal Regulations, **33 CFR Part 162.65**, exist to preserve the safety of the port and waterways of Charleston. These regulations are supported by these local interests, and reports of violations of those regulations on the part of noncomplying vessel operators will be reported to Coast Guard authorities.

(141)

Draft limitations

(142) While the project depths for Charleston Bar and Charleston Harbor are published as 47 feet and 45 feet, respectively, private dredging operations and natural influences have normally permitted vessels of slightly greater draft than 45 feet to transit the main channels of Charleston Harbor. Tidal ranges average 5.2 feet in most harbor locations. Bar and harbor pilots at Charleston consider actual depths based upon recent soundings, the state of the tide and the need for under-keel clearances to allow for both static and dynamic hydraulic effects between harbor bottom, hull and the ship's propeller(s). The pilots generally require a four-foot margin for clearance between the lowest point on the vessel's hull and the harbor bottom for vessels transiting Charleston's waterways at normal harbor speeds. The pilot office provides guidance on all vessel movements in which the vessel's deepest draft is greater than 36 feet and for tank vessels with deepest drafts over 34 feet.

(143)

Low visibility

(144) Not infrequently, portions of Charleston Harbor are affected by poor visibility. This occurs during line squalls of heavy rain accompanying the passage of frontal systems, rare snow squalls and fog. Fog associated with a generalized weather pattern occasionally settles over the entire port area including the fairways offshore. Fog over only a part of the harbor, however, is a reasonably frequent occurrence. Vessels, having unmoored in good visibility, may find during their transit that visibility has become reduced to a few yards. Similarly, vessels proceeding inbound from the sea buoy may commence the transit in good visibility only to lose it while transiting the Charleston Harbor.

(145) These aforementioned reduced visibility conditions may last for only several hours or they may extend to several days. The purpose of these guidelines is not to amend or negate the application of the Rules of the Road and good navigational practice but to assist vessels underway in transiting the harbor expeditiously and with minimum risk to themselves and to the port. The Commissioners of Pilotage for the Port of Charleston have issued policy guidance to pilots that whenever visibility is less than 1,000 yards, pilots should not knowingly get a vessel underway outbound, or proceed inbound inshore of Lighted Buoys 27 and 28 on Rebellion Reach, unless an emergency or other special circumstance exists. The pilots licensed by the Commissioners are required to comply with such policy.

(146) During periods of low visibility, the Charleston Branch Pilots provide information to Navy Port Services Division and the National Weather Service on actual visibility conditions experienced at the Pilot Office, located on the Battery (32°46.4'N., 79°55.5'W.), on board the Association pilot boats, and on board oceangoing vessels being piloted by Charleston Branch Pilots. The pilot office monitors VHF-FM channels 13, 14, 16 and 18A on a continuous basis.

(147) The Charleston Branch Pilots Office provides information on visibility and vessel movements to mariners when requested and when such information is available. The Charleston Branch Pilots do not accept responsibility for financial losses resulting from information that is provided by their office, nor do they accept liability in the event that deaths, injuries and/or property damages may result from the use or misuse of information provided by the pilot office. The pilot office is, however, in the best position to determine when reduced visibility exists in the Lower Harbor. At times when reduced visibility exists, regulatory action by the Coast Guard Captain of the Port may be necessary. The Charleston Branch Pilots Association may contact the Captain of the Port and recommend such action as may be necessary consistent with the policy guidance of the Commissioners of Pilotage.

(148) At no time shall the Navigation Rules, International-Inland be abridged or amended by these low-visibility navigational guidelines. These guidelines are intended to enhance safety under conditions wherein navigation is not otherwise constrained.

(149)

Areas of particular concern

(150) Four areas in the Cooper River are considered to be particularly troublesome. These areas are listed in order of ascension when proceeding from sea.

(151) (1) **Intracoastal Waterway** (32°45.7'N., 79°52.3'W.). This represents the eastern conjunction of this waterway with Rebellion Reach. Westbound vessels proceeding on the waterway into Charleston Harbor are

not readily visible to vessels inbound from sea until they are clear of the northernmost part of Sullivans Island. This waterway is extensively used by tows, and its junction with the harbor of Charleston is subject to strong and unpredictable crosscurrents at various stages of the tide. Westbound tows intending to enter Charleston Harbor from the Intracoastal Waterway should give a security call on VHF-FM channel 13 15 minutes prior to entry or upon clearing the Ben Sawyer Bridge (32°46.3'N., 79°50.5'W.) and adjust speed so as to enter the harbor when the channel is clear. Every effort, including holding, should be made to avoid unduly restricting deep-draft vessels transiting the main ship channel and to allow them to clear this area when either inbound or outbound.

(152) (2) **Drum Island Turn** (32°48.8'N., 79°54.9'W.). Navigation of this turn is complicated by (a) poor visibility caused by Drum Island blocking the view of vessels approaching one another, (b) close proximity, 700 yards, to the fixed bridge span over Hog Island Reach, and the vulnerability of the bridge to collision in the event vessel control is lost and (c) crosscurrents on ebb tide from the confluence of the Cooper and Wando Rivers. Vessels should make every effort to avoid meeting at this turn, which includes Hog Island Reach above Lighted Buoy 41, north of the Ravenel Bridge. Commercial vessels should give another Security call on VHF-FM channel 13, 15 minutes prior to arriving at this turn. The vessel with the fair tide should initiate a proposal for meeting or passing and the vessel stemming the tide should hold as necessary. Any departure from this procedure should be agreed to by both vessels in a timely manner. Poor-handling vessels should not attempt to navigate this turn, except when a suitable number of tugs are immediately available for assistance, because such vessels are likely to become unmanageable, raising a substantial risk of collision with the bridge abutments and, thereby, becoming a threat to the lives of persons in the vehicles on the bridge. Local knowledge is necessary to predict current effects as they tend to set across the channel on both the flood and ebb.

(153) (3) **Shipyard Creek Junction** (32°49.7'N., 79°55.8'W.). This junction is complicated by the movement of vessel traffic in and out of Shipyard Creek and by ebb currents of unusually high velocity. Upbound low-powered vessels, particularly tugs with deep-draft tows, should not attempt transit of this area, except on flood tide, as their speed over the ground will be so slow that they will effectively restrict the main channel for hours. Tankships moored at the oil terminal facing on the lower portion of Daniel Island Reach are susceptible to current surges and suction from passing deep-draft vessels. Tankships mooring at that facility should employ an array of suitable mooring lines including wire ropes and winches with manually or hydraulically set brakes. It is recommended that a listening watch be maintained on VHF-FM channel 13 so that mooring lines can be tended during the passing of deep-draft vessels whose security broadcasts have announced their intention to transit the upper Cooper River. In addition, vessels so moored may advise the Office of the Charleston Branch Pilots Association of their working frequencies so that such VHF communications between piloted vessels and moored vessels may be facilitated.

(154) (4) **North Charleston and Filbin Creek Reaches** (32°52.2'N., to 32°53.8'N., 79°57.9'W.). The main channel in these reaches is immediately adjacent to the pier heads of a number of oil terminals that receive tank vessels. The channel in these reaches is minimally 500 feet in width, thus the passage of deep-draft vessels often occurs in close proximity to moored tank vessels transferring bulk liquid inflammable, combustible and hazardous cargoes.

(155) The presence of the Route I-526 highway bridge and its vertical structures that are surrounded by a "rip-rap" protective fender system further restricts navigation. When tank vessels are moored at any of these facilities, the situation becomes complicated by the wake effect and suction from passing vessels upon cargo hose and mooring lines of moored tank vessels and the possible loss of visibility of the bridge structure owing to the disbursement of large quantities of water vapor into the atmosphere from a nearby industrial plant.

(156) To provide the maximum distance between moored and passing vessels, the area encompassed by these reaches should be limited to one- way traffic with respect to the transit of deep-draft vessels past any tank vessel moored at one or more of the several oil terminal docks. Likewise, no deep-draft vessel should overtake and pass another vessel in these reaches in the vicinity of moored tank vessels.

(157) Deep-draft commercial vessels intending to transit these reaches should make a security call on VHF-FM channel 13 — 15 minutes prior to the intended transit and shall adjust speed so as to avoid a meeting or passing situation in the vicinity of moored tank vessels. While passing moored tank vessels, transiting deep-draft vessels shall give due regard for the wake and suction effects upon the moored vessels. Local knowledge is necessary to predict current effects as they tend to set across the channel on both flood and ebb.

(158) Poor-handling vessels should be assisted by a suitable number of assist tugs when transiting these reaches to avoid collision with tank vessels moored at the oil terminals. It is recommended that moored tank vessels maintain a listening watch on VHF-FM channel 13 to be alert to the intentions of deep-draft vessels to transit these reaches, and thereby have line handlers prepared to tend mooring lines during the transit. In addition, vessels so moored should advise the Office of the Charleston Branch Pilots Association of their working frequencies so that such VHF communications between piloted vessels and moored vessels may be facilitated.

(159) To prevent problems that might arise from failure to exchange information necessary for safe meeting and passing on the river, the Coast Guard Captain of the Port conducts spot check monitoring of VHF-FM channel 13.

(159.001) (5) **Pier Bravo to Snow Point** (32°55.6'N., 79°56.1'W. to 32°56.8'N., 79°55.7'W.)

(159.002) The Cooper River portion of the Charleston Harbor Federal Project, which contains provisions for quarterly condition surveys and regular maintenance dredging, terminates at the northern edge of the Ordnance Reach turning basin. North of this point, the length of river between Pier Bravo and the Department of Defense facility in the vicinity of Snow Point, constitutes an area of increased navigational risk due to a combination of variable hydrographic data, fixed structures, and critical military assets. To promote safe navigation, ships that are 10,000 gross tons or more, or ships with a draft exceeding 25 feet, should employ a tethered two-tug escort while transiting this segment of the river. The two-tug escort should be tethered to the satisfaction of the Charleston Branch Pilots in a safe location well prior to entering this area. Once well clear, the tethered two-tug escort may be released, also to the satisfaction of the pilots.

(160)

Seagoing tugs and barges

(161) Seagoing tugs and barges arriving at or departing Charleston Harbor should, upon arrival, make a **security call** 15 minutes prior to entering Fort Sumter Range or, upon departing a dock or anchorage, make a security call 15 minutes before getting underway. Such security calls should be made on VHF-FM channel 13. It is recommended that such vessels further call the Charleston Branch Pilots' Association on VHF-FM channel 16 to ascertain the presence and movement of other vessels on the bar and in the harbor.

(162)

Small-craft precautions

(163) Small craft should comply with the Federal Regulations of **33 CFR 162.65(b)**, chapter 2. Small craft should take precautions whenever anchoring or mooring in close proximity to the main shipping channels by always maintaining a proper lookout, displaying proper navigational lights and exercising good seamanship. Such small craft are subject to the hydraulic and hydrodynamic effects generated by deep-draft vessels passing in the main shipping channels even when such deep-draft vessels are proceeding at minimally slow speeds necessary to maintain steerageway. These effects can cause extreme surging and, in shallow water, can generate high waves. Vessels anchored in shallow water seeing the approach of a deep-draft vessel should get underway and meet these potential hydraulic and dynamic effects in a safe and seamanlike manner. Small craft should never anchor by the stern nor should they moor to the rock jetties, aids to navigation or bridge abutments.

(164)

Procedures for docking and undocking in Charleston Harbor

(165) The procedures for docking and undocking deep-draft vessels in Charleston Harbor have been developed by the Charleston Harbor Navigation Safety Committee. These procedures were developed with conventional vessels in mind; they do not preclude case-by-case consideration of other vessels representing the application of advanced technology in vessel controllability systems or any other mitigating circumstances. The general rules regarding vessels moored at commercial vessel berths are:

(166) (1) Vessels to be docked must have a 50-foot horizontal clearance at both bow and stern from vessels already docked at berths adjacent to the intended berthing space.

(167) (2) The South Carolina State Ports Authority Terminal Tariff No. 8, Rule 34-170, requires calling at Authority berths to use tugs.

(168) (3) The following mooring assist tug guidelines are recommended for vessels calling at Charleston Harbor Terminals:

(169) **Columbus Street Terminal**: Vessels calling at all berths at the SCSPA Columbus Street Terminal present a risk of allision with the U.S. Route 17 Arthur Ravenel Bridge span over Town Creek, which is situated less than 1,400 feet from the furthest inland berth at that Terminal, if the movements of those vessels are not safely arrested and controlled during docking and undocking maneuvers. Therefore, an appropriate number and capability of tugs should be employed to assist with the movement of the vessels of various dimension and draft with due consideration to the tidal currents and the direction of vessel movement, i.e., inbound or outbound. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(170) (a) For docking or undocking, vessels over 50,000 Dead Weight Tons (DWT) should employ two tugs:

(171) 1. A tractor tug as an escort tug capable of rendering assistance through its influence on the speed and direction of travel of the vessel in the event of a casualty, steering or propulsion failure, and thereby reducing the possibility of an allision. The tractor tug should not be less than 4,000 hp; and

(172) 2. A tug employed to control the vessel's head. The tug should not be less than 3,300 hp, unless the vessel is fitted with a fully functional bow thruster, in which case a 3,000-hp tug may be used.

(173) Vessels over 50,000 DWT should not moor starboard side to on ebb tide.

(174) (b) For docking or undocking, vessels between 30,000 DWT and 50,000 DWT should employ two tugs:

(175) 1. Either a tractor or conventional tug, not less than 3,300 hp, as an escort tug;

(176) 2. A second tug capable of assisting the vessel's head.

(177) Vessels between 30,000 DWT and 50,000 DWT should not moor starboard side to on ebb tide.

(178) (c) For docking or undocking, vessels less than 30,000 DWT should employ a tug, not less than 3,300

hp, as an escort and a second tug capable of assisting the vessel's head.

(179) (d) Tugs employed to the guidelines as escort tugs shall meet up with inbound vessels not later than Rebellion Reach.

(180) **Allied Terminal:** Vessels over 40 feet in draft, when docking, shall arrive at the terminal in such time so as to complete mooring operations prior to the commencement of ebb tide. There are no undocking restrictions. Vessels with a draft of 34 feet or less may dock at any time.

(181) **Shipyard River Coal Terminal, Chevron, Braswell and Detyens Shipyards, Salmons:** There are no undocking restrictions at these facilities. Docking shall be accomplished on flood tide only (off mouth of Shipyard Creek).

(182) **McCalloy:** Docking shall be accomplished at flood tide only (off mouth of Shipyard Creek). Vessels over 535 feet in length shall undock only during daylight. The maximum length of vessels that can be accommodated is 580 feet. There are no other undocking restrictions.

(183) **Navy Facilities:** Former Naval Station Pier "K"; north side; docking and undocking of vessels shall be during slack water or flood tide. South side; docking and undocking of vessels shall be on slack water only. Navy small craft are exempt from this restriction. Naval Weapons Station (NWS), Pier "A," 950'"Bob Hope"–class, flood tide only.

(184) **South Carolina State Ports Authority North Charleston Terminal ("Port Terminal"), Grain Dock and the Navy Weapons Station "TC" Dock:** There are no undocking restrictions. There are no docking restrictions on vessels less than 700 feet in length. Ships 700 feet and over should not be docked starboardside-to during ebb tide.

(185) **Koch, Alcoa, Fina, North Hess, Marathon, Shell:** No restrictions on docking or undocking, except that deep loaded tankships shall not be docked starboardside-to during ebb tide.

(186) There are no restrictions at any other commercial terminal in Charleston Harbor (i.e., Amoco, Westvaco) provided that adequate depths of water are maintained at dockside.

(187) In construing and complying with these docking restrictions, regard shall be had to all special circumstances that may make a departure from these guidelines necessary to avoid danger.

(188) Tidal conditions at certain selected locations are available from the Tidal Current prediction service at *tidesandcurrents.noaa.gov*. Links to a user guide for this service can be found in chapter 1 of this book. For specific tidal conditions at the various berths, mariners are urged to consult the docking tug companies.

(189)

Channels

(190) The entrance to Charleston Harbor is between converging jetties, the inner portions of which are submerged. The north jetty is almost completely submerged at MHW from offshore to about 32°44'28"N., 79°49'56"W., thence submerged to shore; caution is advised. Mariners should align seaward of Lighted Buoy 18 on their final approach. An opening in the south jetty is marked by buoys and had a reported controlling depth of 20 feet in 2009. For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts. Surveys and channel condition reports are available through a USACE hydrographic survey website listed in Appendix A.

(191) A federal project provides for a channel 47 feet deep over the Bar (Ft. Sumter Range) and through the Harbor entrance and thence 45 feet deep into the major reaches of Cooper River, Wando River and Town Creek to Goose Creek, 13.6 miles above the mouth; and a connecting channel into Shipyard Creek 32 feet deep. A 35-foot Navy-maintained channel extends from the head of the federal project in Cooper River to a turning basin at a naval facility, about 2.6 miles above Goose Creek; thence 30 feet for another 0.8 mile. The channels require constant dredging to maintain them at or near project depths, due to the silting of Cooper River. (For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts. Surveys and channel condition reports are available through a USACE hydrographic survey website listed in Appendix A.) **South Channel,** from the main channel to off the Battery, is no longer maintained.The channels are well marked by lighted ranges and other aids to navigation. Charleston Entrance Lighted Buoy C (32°35'39"N., 79°32'16"W.) is about 15 miles southeast of Charleston Light and is equipped with a racon.

(192)

Anchorages

(193) The principal anchorage for deep-draft vessels is in the triangle westward of the junction of Rebellion Reach of the main channel with South Channel. (See **33 CFR 110.173**, chapter 2, for limits and regulations.)

(194)

Dangers

(195) A dangerous submerged obstruction with a least depth of 9 feet is southeast of the outer end of the south jetty located at 32°42'43"N., 79°48'37"W.; caution is advised.

(196) **A regulated navigation area** extends northeastward and southeastward along the northern side of the entrance channel from Charleston Entrance Channel Lighted Buoy 16. (See **33 CFR 165.714**, chapter 2, for limits and regulations.)

(197)

Marine Protected Area (MPA)

(198) **Charleston Bump Closed Area-Highly Migratory Species**, portion of Exclusive Economic zone (EEZ) extends from southern north carolina to southern Georgia near Jeckyll Island.

(213)

METEOROLOGICAL TABLE – COASTAL AREA OFF CHARLESTON, SOUTH CAROLINA
Between 32°N to 34°N and 75°W to 81°W

WEATHER ELEMENTS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEARS OF RECORD
Wind > 33 knots [1]	4.3	4.8	4.1	2.0	0.9	0.5	0.3	0.6	1.3	3.1	3.1	4.0	2.4
Wave Height > 9 feet [1]	8.9	9.6	8.7	4.7	3.0	2.3	1.1	1.7	4.3	7.6	7.3	7.9	5.5
Visibility < 2 nautical miles [1]	1.4	1.5	1.1	0.6	0.8	0.6	0.8	0.9	0.8	0.8	0.8	1.0	0.9
Precipitation [1]	7.0	6.5	6.1	3.6	4.7	5.0	5.1	6.0	5.5	5.8	5.1	6.1	5.5
Temperature > 69° F	11.5	11.7	18.4	40.9	79.9	98.0	99.8	99.7	98.5	77.1	42.5	18.7	59.1
Mean Temperature (°F)	59.9	60.5	63.4	68.4	73.8	78.4	81.5	81.5	79.3	73.8	67.8	62.4	71.1
Temperature < 33° F [1]	0.4	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Mean RH (%)	74	74	73	73	76	80	80	80	77	74	72	72	76
Overcast or Obscured [1]	32.1	31.8	28.0	18.9	19.4	19.5	17.3	18.5	20.2	21.5	21.6	28.2	23.0
Mean Cloud Cover (8^{ths})	5.2	5.1	4.8	4.0	4.3	4.5	4.6	4.7	4.7	4.6	4.6	5.0	4.7
Mean SLP (mbs)	1019	1018	1017	1017	1017	1016	1018	1017	1017	1017	1018	1019	1018
Ext. Max. SLP (mbs)	1045	1045	1044	1040	1039	1036	1037	1038	1036	1042	1044	1044	1045
Ext. Min. SLP (mbs)	980	977	980	985	991	995	998	996	995	988	987	983	977
Prevailing Wind Direction	N	N	N	SW	SW	SW	SW	SW	NE	NE	N	N	SW
Thunder and Lightning [1]	1.0	1.3	1.7	1.6	2.9	3.1	3.9	4.3	2.7	1.9	1.3	0.9	2.2

[1] Percentage Frequency

(199)

Caution

(200) Vessels approaching Charleston Harbor must guard against an inshore set which may amount to a knot or more due to indraft of current into the various inlets. In this area, preceding a northeasterly or following a southerly gale, a hazy atmospheric condition may be encountered, that results in low visibility of lights even in fine weather when it is clear overhead. During the periods when this condition prevails, it is reported that excessive inshore sets have been experienced.

(201) **Rattlesnake Shoal**, 3 miles offshore and the same distance east-northeastward of the north jetty at the entrance to Charleston Harbor, is about 2 miles long east and west; its least depth is 10 feet. A buoy is east of the outer end of the shoal.

(202) Two unmarked rectangular drill minefields are about 8 miles northward and 5 miles north-northeastward of the sea buoy (Charleston Entrance Lighted Buoy C). Depths of 30 feet were reported in the northern minefield in 1969. A lighted buoy is about 1.5 miles southeastward of the northern minefield and marks a wreck and fish haven area. There are several drill minefields westward and southwestward of the sea buoy. There are also several unmarked charted dangers inside the sea buoy; caution is advised in this area.

(203)

Routes

(204) From northward, the safer approach to Charleston Harbor, and the one generally used by deep-draft vessels, is outside Frying Pan Shoals Lighted Buoy 16. The course should be shaped west-southwesterly to pick up Cape Romain Shoal Buoy 6CR and then the Charleston sea buoy. From southward, a northeast course, from a point about 3 miles southeastward of Savannah Light, will lead to the Charleston sea buoy.

(205)

Current

(206) Off the entrance to Charleston Harbor the tidal currents are rotary with velocities of about 1 knot. Near the entrance to the jetties the current sets fair with the channel at strengths of flood and ebb and can be expected to set across the channel with a velocity of about 0.2 knot about 3 hours after strength of flood and ebb, setting northeastward and southwestward, respectively. See the Tidal Current prediction service at *tidesandcurrents.noaa.gov* for specific information about times, directions, and velocities of the current at numerous locations throughout the area. Links to a user guide for this service can be found in chapter 1 of this book.

(207) It is reported that tide rips, hazardous to small craft, may be encountered off the jetties when wind and current are opposed.

(208) It is reported that with a west-northwesterly storm the ebb current off Fort Sumter and north of Drum Island attains a velocity of about 4 knots.

(209) In the channel between the west end of the south jetty and the submerged jetty, the average velocities of the current at strengths of flood and ebb are about 1.2 knots and 2.8 knots, respectively.

(210) Daily predictions for Charleston Harbor, off Fort Sumter, are available from the Tidal Current prediction service at *tidesandcurrents.noaa.gov.* Predictions for a number of other locations in the harbor and tributaries can also be obtained through the prediction service. Tidal Current Charts are available for Charleston Harbor, including the entrance thereto, and Wando, Cooper and Ashley Rivers. Links to a user guide for this service can be found in chapter 1 of this book.

(211)

Weather, Charleston and vicinity

(212) The temperate climate is modified by its exposure to the ocean. This is most noticeable in winter, when

minimum temperatures are often 5° to 10°F warmer on the peninsula than at the airport. Summers are warm and humid although sea breezes keep 100°F (37.8°C) readings a rarity. This is the rainiest season but most of the precipitation falls as brief, heavy showers or thundershowers. Prevailing winds are generally southerly in summer and spring, compared to the more frequent northerlies of fall and winter. Gales are infrequent and are most likely associated with local spring storms or hurricanes, which may also produce severe thunderstorms and tornadoes. From late September through early November weather is often sunny and pleasant except for the threat of a hurricane, which also exists in summer.

(214) The average temperature at Charleston is 66°F (18.9°C) with an average high of 76°F (24.4°C) and an average low of 56°F (13.3°C) based on the 1981–2010 climate normals. January is the coolest month with an average high of 59°F(15°C) and an average low of 38°F (3.3°C). July is the warmest month with an average high of 91°F (32°C) and an average low of 73°F (22°C). The warmest temperature on record is 105°F (40.6°C) recorded in August 1999, and the coolest temperature on record is 6°F (-14.4°C) recorded in January 1985. May, June, July and August have each recorded temperatures in excess of 100°F(37.8°C),while eachmonth November through April has recorded temperatures below freezing. Temperatures above 90°F (32.2°C) can be expected on 57 days during any given year while temperatures below 32°F (0°C) can be expected on 31 days during any given year. The local climate varies significantly between the coast and the airport region. The lessening Atlantic influence further inland results in almost twice as many 90°F (32.2°C) days in summer and nearly three times as many freezing nights in winter, as compared to the Charleston peninsula

(215) The average annual precipitation of Charleston is 51 inches (1,295 mm). August is the wettest month with 7.15 inches (181.6 mm) on average. November is the driest month averaging, about 2.43 inches (61.7 mm). In general, the airport receives about 6 to 7 more inches (152 to 178 mm) of precipitation annually than the peninsula. Precipitation is largely from afternoon thunderstorms, although substantially higher amounts are seen with tropical systems. Snowfall is rare in Charleston, averaging less than one inch (25.4 mm) in any given year. However snow has fallen in each month November through March. The greatest snowfall in a 24-hour period was 6 inches (152.4 mm) in December 1989.

(216) Charleston Harbor offers few of the characteristics of a haven during hurricane force winds. The following recommendations along with more detailed information can be found in the **Hurricane Havens Handbook for the North Atlantic Ocean** mentioned in chapter 3. Large ships should evade at sea or seek shelter elsewhere when a hurricane threatens. During a severe tropical storm (50–63 knots), some moorings along the Cooper River, Shipyard Creek and Town Creek may be adequate unless the vessel has a large sail area. While anchorage for deep-draft vessels is available in the triangle westward of the confluence of Rebellion Reach (of the main channel) with South Channel, use of this anchorage is not recommended because of the restricted scope while riding at anchor, the hazards of collision and the difficulty of leaving if necessary.

(217) The topography of the entire harbor area is nearly flat and atsea level provides little shelter from wind and tide. The highest accurate storm tide on record was 12.5 feet (3.8 m) above mean lower low water (MLLW) during Hurricane Hugo in September 1989. Smaller vessels, fishing boats and sailing craft should stay fast or seek shelter along the west side of the Cooper River, northward of the Battery.

(218) The official hurricane season runs from June through November, however the most likely time for the region to be impacted by tropical systems is from August through October. Since 1851, 56 tropical cyclones have come within 50 miles (93 km) of Charleston. The most noteworthy of recent memory was Hurricane Hugo in 1989. Hugo made landfall near Sullivan's Island, north of Charleston, early in the morning of September 22nd. Highest sustained winds in Charleston were 68 knots with gusts to 85 knots, however local reports noted gusts as high as 94 knots.

(219) The National Weather Service Office is located at the Municipal Charleston International Airport about 10 miles outside of the city. **Barometers** may be compared there.

(220)

Pilotage, Charleston

(221) Pilotage is compulsory for all foreign vessels and for all U.S. vessels under register in the foreign trade. This compulsory pilotage is regulated pursuant to 46 USC 8501 and Title 54, chapter 15 of the 1976 South Carolina Code, as amended, and chapter 136 of the South Carolina Code of Regulations. The state pilotage regulatory agency is the Commissioners of Pilotage, Port of Charleston, P.O. Box 20096, Charleston, SC 29413; telephone 843–577–8659.

(222) Pilotage is optional for U.S. vessels in the coastwise trade that have on board a pilot licensed by the Federal Government pursuant to the Federal pilotage requirements of 46 USC 8502 and **46 CFR 15**. Both federal and state pilotage is available from the Charleston Branch Pilots Association, 6 Concord Street, Charleston, SC 29401, telephone 843–577–6695, FAX 843–577–0632. The Association maintains four offshore pilot boats, the FORT SUMTER, FORT MOULTRIE, FORT JOHNSON and FORT RIDLEY. They also have two boats, the SIS and the PALMETTO STATE, used primarily as a shuttle and for other harbor work. These four boats have black hulls and aluminum superstructures and have the word "PILOT" on their sides.

(223) Pilots board vessels day or night from the pilot boats in the vicinity of the sea buoy Charleston Entrance Lighted Buoy C (32°35'39"N., 79°32'16"W.) for PILOT

AREA "A", in the vicinity of Charleston Entrance Lighted Buoy 2 (32°36'37"N., 79°34'18"W.) for PILOT AREA "B" and in the vicinity of Charleston Entrance Lighted Buoy 6 (32°39'23"N., 79°40'02"W.) for PILOT AREA "C." Vessels are requested to maintain a speed of 8 to 10 knots and provide a ladder 2 meters above the water on the leeward side. The pilot boats are equipped with radar and maintain radiotelephone communications on VHF-FM channels 13, 14, 16 and 18A. The pilot office at Charleston monitors these channels on a 24-hour basis. Pilots may be obtained directly by telephone, FAX (above), through the Charleston Marine Operator or by prior arrangement through ships' agents. The usual practice is for ship agents to fax orders directly to the pilot office, at 843–557–0632. At least 3 hours advance notice for orders of arrival at the sea buoy and departure from the port is required.

(224) Public vessels such as Navy and Coast Guard ships are exempt from pilotage requirements but their commanding officers frequently request pilots in an advisory capacity. When pilots are taken, naval vessels may use either federally licensed civilian employees of the Navy or pilots from the Charleston Branch Pilots Association as pilots on their vessels. The Port Services Division of U.S. Naval Station, Charleston, coordinates pilotage for naval vessels through the two groups of pilots.

(225)

Towage

(226) Tugs are required for docking and undocking. Tugs up to 5,100 hp are available at all hours by arrangements through ships' agents. They usually meet vessels bound for Charleston proper at or near the Customhouse Reach and vessels bound for North Charleston at or near North Charleston Reach. Tugs can also be engaged for salvage or deep-sea towing.

(227)

Quarantine, customs, immigration and agricultural quarantine.

(228) (See chapter 3, Vessel Arrival Inspections, and Appendix A for addresses.)

(229) **Quarantine** is enforced in accordance with regulations of the U.S. Public Health Service. (See Public Health Service, chapter 1.) The quarantine office is in the federal building. There are several large public and private hospitals in Charleston.

(230) Charleston is a **customs port of entry.**

(231)

Coast Guard

(232) A **Sector Office** is at the Coast Guard Station (32°46.4'N., 79°56.6'W.) on the east side of the Ashley River. (See Appendix A for address.)

(233)

Harbor regulations

(234) The Coast Guard exercises jurisdiction over the Port of Charleston through the Captain of the Port. The South Carolina State Ports Authority exercises jurisdiction over the authority's facilities through its Executive Director at the headquarters building, located at 176 Concord Street. The ports authority berthing office is manned at all times and can be reached at 843–557–8659. The Commissioners of Pilotage, Port of Charleston, have issued policy guidelines for safe vessel movement to the pilots regulated by that state agency in the Commissioners of **Pilotage Policies** and **Procedures Manual**. Chapter 136 of South Carolina State Code of Regulations contains regulations concerning vessel traffic restrictions, docking and undocking.

(235)

Wharves

(236) Only the major facilities at Charleston and North Charleston are described. These facilities are all northward of the Battery along the west side of Cooper River and Town Creek and in Shipyard Creek and the east bank of the Wando River. All of the berths have highway connections and most have either direct or beltline rail connections with the Class I or Class II railroad system. Water is also available at most berths. General cargo at the port can be handled by ship's tackle or special equipment, which is available at most facilities. Special equipment, if available, is mentioned in the description of the particular facility.

(237) There are many smaller facilities in Charleston that are used by barges and small vessels and as vessel-repair berths; these are not described.

(238) **Facilities at Charleston proper, along the west side of Cooper River and Town Creek, northward of the Battery** (32°46'08"N., 79°55'44"W.):

(239) **State Pier 2, Union Pier**: 0.75 mile north of the Battery; 2,620 feet of berthing space with dolphin off of the south end; 35 feet alongside; deck height, 12 feet; passenger terminal; owned and operated by South Carolina State Ports Authority.

(240) **State Pier 8, Columbus Street Terminal:** about 1.4 miles north of the Battery; 3,440 feet of berthing space; 40 feet alongside; deck height, 12 feet; handles general cargo and heavy lift items; owned and operated by South Carolina State Ports Authority. Three container cranes are also available.

(241) **State Pier 9:** joining State Pier 8 to the northward; marginal type wharf with 437-foot face and 30-foot apron; 35 feet alongside; deck height, 12 feet.

(242) **Allied Terminal Wharf and Barge Dock:** 3.4 miles northward of the Battery, just below the entrance to Shipyard Creek; offshore wharf with 78-foot face, 1,000 feet of berthing space with mooring dolphins; 40 feet alongside; deck height, 10 feet; handles asphalt and petroleum products; bunkering vessels.

(243) **Facilities in Shipyard Creek, on the west side of Cooper River about 3.8 miles northward of the Battery**:

(244) **Kinder-Morgan Bulk Terminal**: south side of Shipyard Creek, just inside the entrance; marginal wharf with 390-foot face; 44 feet alongside; deck height, 14

feet; one 16-ton electric crane; handles miscellaneous liquid and dry bulk commodities including coal and stone.

(245) **Kinder-Morgan Bulk Terminal**: west side of Shipyard Creek about 400 yards westward of Shipyard River Terminal Wharf; 130-foot face, berthing for 660-foot vessels with dolphins; 44 feet alongside; deck height, 13 feet; handles petroleum products and bunkering vessels.

(246) **Facilities at North Charleston, along the west side of Cooper River, northward of the Battery**:

(247) **Thomas Cement Terminal:** (32°52'47"N., 79°58'05"W.): L-shaped offshore wharf with 250-foot face, 550 feet with dolphins; 40 feet alongside; deck height, 11.5 and 16.5 feet; handles petroleum products.

(248) **AlcoaTerminal Wharf**: about 250 yards of northward of Koch Terminal Wharf; 520-foot face, 700 feet of berthing space with dolphins; 40 feet alongside; deck height, 14 feet; handles liquid chemicals and alumina.

(249) **Shell Oil Wharf**: about 550 yards northward of Koch Terminal Wharf; offshore wharf with 142-foot face, 257 feet of berthing space with dolphins; 40 feet alongside; deck height, 13 feet; handles petroleum products.

(250) **Marathon Petroleum Co. Wharf**: about 300 yards northward of Texaco Wharf; offshore wharf with 50-foot face, 275 feet with dolphins; 40 feet alongside; deck height, 14 feet; handles petroleum products .

(251) **Buckeye:**about 200 yards northward of Marathon Petroleum Co. Wharf; offshore wharf with 68-foot face, 600 feet of berthing space with mooring dolphins; 40 feet alongside; deck height, 12 feet; handles petroleum products.

(252) **Amerada Hess Corp. North Terminal**: about 200 yards northward of Marathon Petroleum Co. Wharf; offshore wharf with 68-foot face, 600 feet of berthing space with mooring dolphins; 40 feet alongside; deck height, 12 feet; handles petroleum products.

(253) **Westvaco Corp. Wharf**: about 0.65 mile northward of Amerada Hess Corp. North Terminal; marginal-type wharf with 480-foot face; 655 feet usable with dolphins; 40 feet alongside; deck height, 12 feet; handles paper products.

(254) **State Pier 15, South Carolina State Ports Authority North Charleston Terminal**: joining Westvaco Corporation wharf to the northward; marginal wharf with 2,460-foot face; 40 feet alongside; deck height, 12 feet; six container cranes, container handlers and toploaders; handles general cargo, RO/RO, and frozen products; owned and operated by South Carolina State Ports Authority.

(255) **South Carolina State Ports Authority Grain Wharf**: about 0.4 mile northward of State Pier 15; marginal type wharf with 380-foot face; 40 feet alongside; deck height, 12 feet; handles dry bulk cargo; operated by South Carolina Farm Bureau Marketing Association.

(256) **Naval Weapons Station TC Dock**: about 0.2 mile northward of the South Carolina State Ports Authority Grain Wharf: marginal type wharf with a 1,500-foot face; 40 feet alongside. (For further information contact the operator.)

(257) The piers at the former Navy Base and Navy Yard are now under the operation of other government agencies and private corporations. The Maritime Administration uses several of these piers as lay berths for their ships. The U.S. Coast Guard also berths vessels at these piers. Pier "Zulu" is used by commercial vessels for cargo handling. Detyens Shipyard operates drydock facilities and berths at the former Navy Yard.

(258) **Cargo facilities on east bank of Wando River, east of Cooper River**:

(259) **Wando Welch Terminal**: about 1.7 miles north of Drum Island; 3,800-foot face; 45 feet alongside; deck height, 15½ feet; twelve 40-long ton container cranes, container handlers and toploaders; handles containerized general cargo; operated by South Carolina State Ports Authority.

(260)

Supplies

(261) All types of marine supplies and provisions can be obtained in Charleston. Water is available at most of the berths; diesel fuel is available by barge or truck.

(262)

Repairs

(263) Detyens Shipyard, Inc., offers drydocking services at its facilities at the former Navy Yard. Another commercial repair facility with a 1,000-ton capacity marine railway is on the south side of Stono River on the Intracoastal Waterway at Mile 476.4. This facility is discussed in chapter 12.

(264) Several shops, on and off the waterfront, can make above-the-waterline hull repairs and repairs to gasoline and diesel engines and electronic equipment anywhere in the harbor; the largest shafts that can be produced are 30 feet by 48 inches.

(265) Wrecking and salvage gear is available at Charleston for normal operations, and special equipment can be brought in.

(266) Repair facilities for small craft are on the Wando and Stono Rivers.

(267)

Communication

(268) The port of Charleston is served by a Class I and a Class II railroad system, which connect with most of the wharves either directly or through three beltline railroads. A number of steamship lines connect the port with principal foreign ports; frequent sailings are maintained by most of the lines. The Municipal Airport 12 miles northwestward of the Battery is served by four commercial airlines. Truck and bus lines serve the port. There are excellent highway connections with Interstate Route 26 and U.S. Routes 17, 701, 52, 52A and 78.

(269)

Ashley River to Cooper River

(270) **Ashley River** empties into Charleston Harbor from the northwestward on the southwest side of Charleston.

(271)

Channels

(272) A dredged channel in Ashley River leads from a point about 1 mile southeastward of the Battery (32°46'08"N., 79°55'44"W.) to a turning basin 5.8 miles above the Battery. About 1 mile above the U.S. Route 17 bascule bridges, trestle ruins extend from the west side of the channel to about midchannel; extreme caution is advised. Local knowledge is advised for vessels navigating above the turning basin. The river is marked lights and buoys to the first bridge and by daybeacons to the fixed highway bridge 8.4 miles above the Battery. For detailed channel information and minimum depths as reported by the U.S. Army Corps of Engineers (USACE), use NOAA Electronic Navigational Charts. Surveys and channel condition reports are available through a USACE hydrographic survey website listed in Appendix A.

(273) **Coast Guard Sector Charleston** is on the east side of Ashley River, about 0.9 mile above the Battery.

(274) A municipal marina is on the northeast side of the Ashley River 1.3 miles above the Battery and 0.3 mile north of the entrance to **Wappoo Creek**, which is a part of the Intracoastal Waterway. Electricity, gasoline, diesel fuel, water, ice, pump-out station, launching ramp, marine supplies and wet storage are available. In 2003, depths of 13 feet were reported alongside the berths. A marina, about 600 yards northeast of the municipal marina, has electricity, gasoline, diesel fuel, water, ice, pump-out station, marine supplies, wet storage and engine repairs available. In 1983, good anchorage for small craft was reported on the east side of the river just northward of the municipal marina.

(275) A **special anchorage area** is across the river from the municipal marina. (See **33 CFR 110.1** and **110.72d,** chapter 2, for limits and regulations.)

(276) **A slow, no-wake speed zone** is marked by a buoy just south of the municipal marina.

(277)

Bridges

(278) Several bridges cross the Ashley River above the Battery. A fixed bridge with a clearance of 56 feet crosses about 1.5 miles above the Battery. The two U.S. Route 17 highway bascule bridges, 100 yards apart, cross about 2 miles above the Battery. The first has a clearance of 18 feet and the second, 14 feet. State Route 7 highway fixed bridge, 6.2 miles above the Battery, has a clearance of 50 feet at the center span. The overhead power cable 0.4 mile above the bridge has a clearance of 70 feet at the two main spans. The fixed highway bridge about 8.4 miles above the Battery has a clearance of 35 feet. The railroad bridge, 10 miles above the Battery, has a bascule span with a clearance of 3 feet. The overhead power cable just below this bridge has a clearance of 74 feet. (See **33 CFR 117.1** through **117.59** and **117.915**, chapter 2, for drawbridge regulations.)

(279) An overhead power cable with a clearance of 70 feet crosses the Ashley River about 0.6 mile below Greggs Landing.

(280) **Shem Creek**, on the lower east side of Charleston Harbor, is entered through a dredged channel leading from **Mount Pleasant Channel**. The channel, marked by lights and daybeacons, leads west and then north to a terminal basin just below the Route 17 highway bridge at **Mount Pleasant**. Shem Creek can be approached from westward via unmarked Hog Island Channel, used by local boatmen only at high water. A marina about 1.2 miles above the dredged channel entrance has gasoline, water, ice and a launching ramp. Other wharves on the creek are used by fishing vessels. U.S. Route 17 highway bridge has a 38-foot fixed span with a clearance of 12 feet.

(281) **Cooper River** enters Charleston Harbor from northward on the eastern side of Charleston; the main channel of the harbor extends several miles up this river. **Drum Island** is 2 miles above the mouth of the river. The channel on the westerly side of this island is known as **Town Creek.**

(282) A **restricted area** crosses the channel between Shutes Folly Island and Charleston, about 0.3 mile northward of the Battery. (See **33 CFR 334.470**, chapter 2, for limits and regulations.)

(283)

Bridges

(284) Two fixed bridges, about 5.7 miles above the mouth and parallel to each other, span Town Creek, Drum Island and Cooper River on the east side of Charleston. The clearances for both bridges are Town Creek, 65 feet for a width of 250 feet; Cooper River, 186 feet for a width of 1,000 feet.

(285) The I-526 fixed highway bridge has a clearance of 155 feet and crosses Cooper River, at Filbin Creek Reach, about 6.7 miles above the two fixed bridges. An overhead power cable crosses Cooper River just north of the highway bridge with a least clearance of 104 feet. The I-526 fixed highway bridge over the Wando River has a vertical clearance of 138 feet and crosses the Wando River about 3.5 miles abut the junction of the Cooper and Wando Rivers. Reference PORTS® (Physical Oceanographic Real-Time System) for real-time water levels, current and other oceanographic and meterological data at tidesandcurrents.noaa.gov/ports.html.

(286) **Shipyard Creek** joins Cooper River from the west 3.8 miles above the Battery. There is considerable traffic in oil, bulk fertilizer materials and ore on this waterway.

(287) **Facilities of the U.S. Government** extend along the west side of the Cooper River from 4 to 8 miles above the Battery. The large water tank, red and white, is conspicuous at the facility.

(288) **Restricted areas** are in the northern portion of Shipyard Creek and in the Cooper River at the U.S. Government facility. (See **33 CFR 334.460** and **334.470**, chapter 2, for limits and regulations.)

(289) **North Charleston**, just north of the government facility, is the site of several oil wharves, a general cargo terminal, several bulk commodity wharves and the U.S. Army Storage Activity; these facilities have been described earlier under Wharves.

(290)

Cooper River

(291) Depths of 20 feet or more are generally available in the Cooper River from the upper limit of the Navy-maintained channel about 3.4 miles above Goose Creek to **The Tee**, 26 miles above the Battery. There is ship traffic to and from the Amoco Terminal about 14 miles above the Battery, ship movement is subject to certain restrictions by the Pilots' Association. There is daylight-only ship traffic upstream as far as the Nucor Steel Terminal about 18.5 miles above the Battery. These ships are limited in size to 580 feet long with a 25 foot draft and subject to certain tidal and current restrictions by the Pilots' Association. This section of the river is bordered by marshland, with occasional bluffs 15 to 20 feet high. A **restricted area** is off the U.S. Naval Ammunition Depot, on the west side of Cooper River about 10 miles northward of the Battery. (See **33 CFR 334.460**, chapter 2, for limits and regulations.)

(292) An overhead power cable with a clearance of 75 feet crosses Cooper River about 21.1 miles above the Battery.

(293) In **East Branch** the channel is narrow and follows the ebbtide bends to **Pompion Hill Chapel**, 6 miles above The Tee. In **West Branch**, the first bend west of The Tee is a bad spot; deep water is on the inner side of the bend. The railroad bridge has a bascule span with a clearance of 10 feet. (See **33 CFR 117.1** through **117.59** and **117.925**, chapter 2, for drawbridge regulations.) Extreme caution is necessary at the bridge; the current is strong, and about 40 minutes is needed to open the draw. An overhead power cable at the bridge has a clearance of 85 feet. The mean range of tide at the bridge is 4.2 feet.

(294) Light-draft vessels can navigate to Columbia, SC, by way of the West Branch, Lake Moultrie, Lake Marion and the Congaree River. The last 18 miles are treacherous because of the twisting channel and varying water levels caused by a dam above Columbia. The lakes are fouled by submerged trees; navigation should not be attempted by strangers.

(295)

Wando River

(296) **Wando River** empties from the northeast into Cooper River eastward of Drum Island.

(297) Wando River Terminal, previously described, is on the east side of Wando River about 1.7 miles above Drum Island. The channel to the facility is marked by lighted buoys.

(298) A fixed highway bridge with a clearance of 138 feet is about 3.5 miles above Drum Island.

(299) **Nowell Creek** empties into the west side of Wando River, about 4.5 miles above Drum Island. The creek, about 5.5 miles above its mouth, joins **Beresford Creek**. Together they form a connection between Wando River and Cooper River. In 1973, shoaling to 2 feet was reported on the east side of the entrance to Nowell Creek.

(300) An overhead power cable with a clearance of 145 feet crosses Wando River about 8.9 miles above Drum Island.

(301) **Cainhoy** is a town on Wando River about 9 miles above Drum Island. Depths of about 17 feet can be taken to Cainhoy and thence, with local knowledge, 11 feet to the mouth of Guerin Creek 1.5 miles above State Route 41 highway bridge at Cainhoy, thence 8 feet for another 3.4 miles, thence 2 feet to Ward Bridge. The channel is marked as far as Cainhoy by buoys and unlighted ranges.

(302) State Route 41 bridge about 0.4 mile above Cainhoy and has a fixed span with a vertical clearance of 55 feet. An overhead power cable with a clearance of 85 feet is at the bridge.

(303) Wando River continues for about 7 miles to **Ward Bridge** at the head of navigation. An overhead power cable crossing the river about a mile south of the bridge has a clearance of 30 feet. **Guerin Creek** flows into Wando River from the northeast about 2 miles above Cainhoy. **Guerin Bridge**, a fixed structure at the head of navigation, is some 3 miles above the mouth of the creek.