

**Commissioners of Pilotage  
Lower Coastal Area**

**POLICIES AND PROCEDURES MANUAL**

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(a) The MPX Card should be given to the vessel master at the time of the initial conference and it should be used as the basis for discussion during the conference.

(b) The card should supplement, not substitute for, the master-pilot information exchange.

(c) There should be a separate card for inbound and outbound movements, also for shifting operations, where appropriate.

(d) The card should include information or instructions specific to navigation in the local pilotage area; subjects to be addressed are:

(1) Radio channels to be monitored.

(2) Posting of anchor watch/lookout (beyond the requirements of the Rules of the Road.

(3) Local navigation requirements or restrictions (ie., tug escorts, speed limits, one-way traffic areas, etc.)

(4) The card should also include instructions or requests concerning what the pilot needs from the master and crew; for example:

(i) Information about the vessel, its characteristics and condition.

(ii) Crew to fix position of vessel.

(iii) Only English is to be spoken on the bridge.

(5) The card should have a blank space for the pilot to add own items.

(6) Cards should be available to agents for transmission to vessels.

## **J. UNDERKEEL CLEARANCES**

1. The Commissioners take notice of the standards for underkeel clearances published in ANNEX A. Draft shall mean "deep-draft". These standards are presented for INFORMATION ONLY and should not be deemed to be a substitute for the exercise by the pilots, at all times, of their professional judgement.

2. Pilots shall not apply these standards blindly. Factors to be considered are vessel speed/squat, list and heel, sea state that may cause plunging, etc. Pilots are expected to apply the depths reported by the latest USACE and/or NOAA surveys for the main shipping channels and the adjacent water areas. Pilots are also expected to notice changes in vessel handling which make indicate shoaling taking place before the results of a bottom survey are received.

3. Tank vessels must always have sufficient underkeel clearance that if they are forced to anchor in the channel, they will have at least 1.7 feet underkeel clearance at MLLW using USACE "Project Depth" as the criteria.

4. Pilots shall not pilot any vessel to any dock or anchorage where the known depth at MLLW is not adequate to enable the vessel to float off the bottom. Terminals shall provide to the pilots reports of depths at each terminal berth at least quarterly. In the event such reports are not received, the pilots shall

advise the Captain of the Port that it is their conclusion that the depth of water at the delinquent terminal is the USACE "Project Depth", unless the USCG has information to the contrary.

#### **K. PILOTS' BEST SKILL AND JUDGEMENT**

1. Pilots shall always apply and use their best skill and judgement in conducting and piloting every vessel. Nothing contained in this chapter shall be used by any pilot as an excuse or reason for not using his or her best skill and judgement.

#### **L. PILOT WATERS**

1. The waters defined in 46 CFR 7.60, 7.65, 7.70 (Boundary Lines) are considered by the Commissioners to be State-regulated "Pilot Waters" with respect to pilotage for the Lower Coastal Area. These boundary lines follow the coastline, but at Charleston are bounded by a line drawn from Charleston Light on Sullivans Island to the "sea buoy", thence to the Folly Island Loran Tower.

2. Every vessel subject to State pilotage while navigating and transiting on pilot waters shall be conducted by a State- licensed pilot in accordance with Federal and State law and regulation. Regulation 136-070.B. describes the beginning and ending of such transits. On inbound vessels, the transit begins in the vicinity of the sea buoy ("C") and ends when the vessel puts its first line on the dock or anchors at a designated anchorage. On outbound vessel, the transit begins when the last line is off the dock or when the anchor is aweigh. An outbound transit ends when the pilot is discharged by the vessel master, the vessel having arrived at such place on the bar where the adjoining depths of water are sufficient for safe navigation. The "bar" is defined in Regulation 136-003.B. as "... the entrance to any port at such place in the Atlantic Ocean where the U. S. Army Corps of Engineers is authorized to commence harbor maintenance. " The determination for adjoining depths being sufficient for safe navigation means that the depths of water adjacent to the maintained channel meet at least the PIANC criteria published in ANNEX A of this Chapter; to wit, a depth equal to 1.2 times vessel deep draft. For example, for a draft of 30 feet, the depths of water adjacent to the channel should be at least 36 feet. Due consideration must be made for the possibility of plunging in a seaway, etc.

3. Every pilot assigned to any vessel requiring State pilotage is responsible and accountable to the Commissioners for the navigational safety of the vessel whenever said vessel is operating on pilot waters. This applies even if the vessel master has discharged the pilot after reaching the place where the adjoining depths are sufficient for safe navigation. The pilot, therefore, prior to disembarking the vessel, must be assured that the intended course of the vessel to its next destination, upon departing the pilot waters, will not cross shoals that are within or adjacent to the designated pilot waters. The pilot shall be guided by Part I. of this Chapter (Pilot - Vessel Master Conference).

4. There are exceptional circumstances wherein a pilot may believe that he or she should depart an outbound vessel prior to its reaching the place on the bar where the adjoining waters are sufficient for safe navigation. These circumstances must be based upon safety considerations. They shall not be based solely upon the desires of vessel personnel to increase speed or gain other convenience that an early disembarkation of the pilot would generate. Despite the implementation of these exceptional circumstances, the assigned pilot is not relieved of his or her responsibility and/or accountability to the Commissioners for the safe navigation of the vessel. It may be necessary to apply unusual measures to ensure the safe navigation of such vessels under these exceptional circumstances, including but not limited to providing detailed navigations instructions pursuant to Part I. (Pilot - Vessel Master Conference) of this Chapter, providing a pilot boat escort, requesting assistance from pilots on other vessels. Whenever the pilot has disembarked any vessel subject to State pilotage before that vessel reaches the place on the bar where the adjoining depths of water are sufficient for safe navigation, he or

## ANNEX A to Chapter Twelve

### Safe Vessel Movement Technical Information

Reference: Background Paper of the Technical Panel on Ports, Harbors, and Navigation Channels of the Committee on National Dredging Issues, 1985, Marine Board, Commission on Engineering and Technical Systems, National Research Council.

The following is provided to the pilots for information only:

1. A summary of the U. S. Army Corps of Engineers (USACE) width guidelines contained in the aforementioned Report is as follows:

	One-way Traffic	Two-way Traffic
Straight Channel	5.0 X Vessel Beam	8.0 X Vessel Beam
Bend 26+ Degrees	7.2 X Vessel Beam	12.4 X Vessel Beam
Bend 40+ Degrees	7.9 X Vessel Beam	13.8 X Vessel Beam

These 1985 guidelines are now considered obsolete by the USACE. In specific waterways applications, the USACE prefers simulation studies conducted by its Waterways Experimental Station (WES).

2. The USACE Engineer Manual (EM 1110-2-1613, 31 August 1995) dedicates a Chapter 8 to "Channel Width". Part 8-4 addresses "Channel Variability". It lists three generalized channel variables:

(a) Shallow Water - Wide unrestricted waterways without channel banks, near the ocean end of entrance channels ... substantial bottom effects but negligible bank forces ... strong ship yawing forces from cross current effects and wave action. This is applicable to Ft. Sumter Range.

(b) Canal - Fully restricted channels with clear and visible banks. This is not applicable at Charleston.

(c) Trench - Dredged or open-type restricted channels ... with submerged banks on either side, usually provided with range markers and channel edge buoys or beacons ... magnitude of yawing forces dependent upon on overbank depth on each side ... and cross currents, waves and winds. This applies to the inshore part of Ft. Sumter range and all other waterways in Charleston Harbor.

- (d) The following is excerpted from Table 8-2:

#### One-Way Ship Traffic Channel Width Design Criteria (1.5 to 3.0 knots maximum current)

##### *Constant Cross Section, Best Aids to Navigation*

<i>Shallow</i>	<i>5.0 times design ship beam</i>
<i>Trench</i>	<i>4.0 times design ship beam</i>

##### *Variable Cross Section, Average Aids to Navigation*

<i>Shallow</i>	<i>5.5 times design ship beam</i>
<i>Trench</i>	<i>5.0 times design ship beam</i>

(e) The following is excerpted from Table 8-3:

Two-Way Ship Traffic Channel Width Design Criteria (1.5 to 3.0 knots maximum current)

*Constant Cross Section, Best Aids to Navigation*

*Shallow*            *8.0 times design ship beam*  
*Trench*            *6.5 times design ship beam*

(No data is provided for "variable cross sections")

2. Various international groups have addressed the issue of underkeel clearances general criteria, including PIANC (Permanent International Association of Navigation Congresses), TERMPOL (Canadian Coast Guard), and Japan. The USACE has not quantified a factor, however the other groups recommend certain factors plus allowances for wind, waves, currents, type of bottom, etc.

Summary of Water Depth Criteria

PIANC	TERMPOL	Japan
1.20 X draft, exposed waters	1.15 X draft	1.10 X draft
1.15 X draft, exposed waiting areas, berthing with exceptions. plus allow.		
1.07 X draft, calmest area, least ship's speed, berthing.		

The minimum PIANC underkeel clearance is 1.7 feet (0.5 meters).

**ANNEX A of Chapter Twelve (Continued)**

3. Using 40' draft as the normal deep-draft upper limit at high water, the following would be the recommended depths at high water under the various published criteria.

Factor	Charleston Bar	Charleston Harbor
1.20	48' (PIANC for exposed waters)	na
1.15	46' (TERMPOL - Canada and PIANC when anchored in exposed waters)	46'(TERMPOL)
1.10	44' (Japan, plus allowances for waves, etc.)	44' (Japan)
1.07	na (PIANC, calmest area)	42.8'(PIANC)