

Standards of Care Practiced by the Lake Charles Pilots

19 June 2007

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Revisions of these Standards of Care are anticipated as required by research and practical experience of pilots.

It is the mission of the Associated Branch Pilots for the Port of Lake Charles, Louisiana, a.k.a. the Lake Charles Pilots, to safely navigate vessels to and from the ports of Southwest Louisiana as authorized by Louisiana Statutes and U.S. federal regulations. The following Standards of Care are essentially the “best practices” that have been developed over time by the pilots and are published as a guideline to the shipping industry of the Pilots’ general practices and recommendations for safely handling vessels upon the Calcasieu Ship Channel. Nothing in these Standards of Care is meant to limit the discretion of the on-scene pilot or master of a vessel to determine the best course of action when navigating a vessel.

Definitions

PORTS®: The Physical Oceanographic Real Time System installed and operated by NOAA.

Calcasieu Intersection: The point where the Gulf Intracoastal Waterway crosses the Calcasieu Ship Channel at Light 92.

Handysize: A vessel between 10,000 and 35,000 deadweight tons.

Handymax: A vessel between 35,000 and 55,000 deadweight tons.

Panamax vessel: A vessel between 55,000 and 70,000 deadweight tons. (Source: Intertanko)

Aframax tanker: A tanker between 75,000 and 120,000 deadweight tons. (Source: Intertanko)

Suezmax tanker: A tanker between 120,000 and 200,000 deadweight tons. (Source: Intertanko)

Conventional LNG Carrier: A membrane or spherical (Moss) tank LNG carrier with a capacity of 125,000m³ to 155,000m³ of LNG with a typical maximum length of 294 meters (965 feet) and typical maximum beam of about 46 meters (151 feet).

Q-Flex LNG Carrier: A membrane LNG carrier with a capacity of 210,000m³ to 216,000m³; a maximum length of 315 meters (1050 feet) and a maximum beam of 50 meters (164 feet).

Q-Max LNG Carrier: A membrane LNG carrier with a capacity of approximately 266,000m³; a maximum length of 345 meters (1132 feet) and a maximum beam of 53.8 meters (177 feet).

Outer Bar: That portion of the Calcasieu Ship Channel extending seaward from the head of the Cameron Jetties (Lights 47 & 48).

Inner Bar: That portion of the Calcasieu Ship Channel extending inland from the head of the Cameron Jetties (Lights 47 & 48).

Draft: Vessel's draft in fresh water

Assist Tug: A tug that may or may not be secured to a vessel to assist in berthing and/or speed reduction.

Active escort tug: A tug that is secured to a vessel that is capable of retarding the vessel's speed to reduce surge to an acceptable level when passing moored vessels or any area of concern; and capable of exerting steering forces on the vessel at low speeds to assist in maneuvering if necessary, and to mitigate the risks of allisions in the event of a loss of steering or propulsion.

Passive escort tug: A tug that is running alongside, in close proximity to, but not secured to a ship, in order to provide a ship with emergency assistance in the event of a loss of propulsion or steering.

1. General Practices

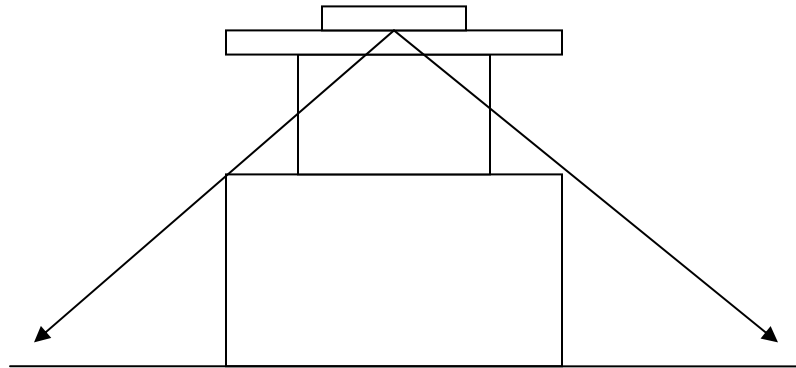
1.1 Transit Speeds

- 1.1.1 Transit speeds are variable throughout the passage upon the Calcasieu Ship Channel, and vary greatly from ship to ship depending upon a particular ship's displacement, draft, available engine speeds, weather, etc.
- 1.1.2 The Pilots strive to reduce the effects of ship wakes and water displacement caused by moving vessels to moored vessels, small recreational vessels, private land, fishing vessels, etc. to an acceptable and safe level.
- 1.1.3 Escort or assist tugs are normally utilized on large or loaded ships when passing moored ships above the Calcasieu Intersection.
- 1.1.4 Escort or assist tugs *may* also be utilized to assist in maneuvering ships in various parts of the channel and to assist in controlling a ship in the event of an engine or steering casualty.
- 1.1.5 The use of escort or assist tugs is at the pilot's discretion, but the general practices of pilots are outlined in the section entitled "Tug Standards".

2. Vessel Requirements

2.1 Visibility

- 2.1.1 Vessels must have, from the conning position on or near the centerline of the ship, a generally unobstructed view straight ahead, and from directly ahead to 90 degrees on either side and down to the water as viewed across the upper deck as illustrated below.



- 2.1.2 Vessels not meeting these criteria will be evaluated by the Pilots and may be subject to mitigating measures, such as daylight transits, double pilots and/or escort tugs.

2.2 Maximum Dimensions

- 2.2.1 Ships exceeding any of the dimensions in this section will be evaluated by the Pilots on a case-by-case basis to determine suitability for transit upon the Calcasieu Ship Channel.
- 2.2.2 The maximum size of ships transiting the Calcasieu Ship Channel up to the Calcasieu Intersection and east to the Industrial Canal basin shall not exceed 320 meters (1050 feet) in length, 50 meters (164 feet) in beam or 12.19 (40.0 feet) of draft.
- 2.2.3 The maximum size of ships transiting the Calcasieu Ship Channel, above the Calcasieu Intersection, shall not exceed 280 meters (918 feet) in length, 46 meters (151 feet) in beam or 12.19 (40.0 feet) of draft.

- 2.2.4 The maximum size of ships above the Port of Lake Charles City Docks (Mile 34) is restricted to 230 meters (754 feet) in length, 32.3 meters (106 feet) in beam and 36.0 feet of draft.
- 2.2.5 The maximum size of ships berthing at PPG shall not exceed 214 meters (702 feet) in length and 32.3 meters (106 feet) in beam.

2.3 Main Engine Recommendations

- 2.3.1 Loaded ships with drafts of greater than 34 feet are advised to utilize their high sea suction intake, if equipped, for main engine cooling to reduce the possibility of overheating due to the intake of muddy water, which could result in failure of the main engine.
- 2.3.2 Vessels must be capable of stopping their main engines at all times when transiting the Calcasieu Ship Channel, therefore; the use of heavy fuel is not recommended if the engine cannot be stopped indefinitely and restarted on demand.

2.4 Minimum Clearance on I-210 Bridge

- 2.4.1 With the PORTS[®] information now available; the Pilots have set a minimum safety margin on all vessels passing under the I-210 Bridge of 1 meter (3 feet) of calculated clearance by subtracting the air draft of the ship from the PORTS[®] air gap sensor reading. *(This is an increase in maximum air draft from the old method of calculating maximum air draft).*
- 2.4.2 If a reading from the PORTS[®] air gap sensor is not available; maximum air draft will be calculated using a clearance an of 139 feet minus the tide reading at the PORTS[®] tide gauge located at Bulk Terminal #1. *(This is essentially the old method of calculating maximum air draft).*

3. Maximum Draft and Deep-Draft Operations

- 3.1.1 With the present project dimensions of the Inner Bar Channel, the maximum recommended draft will never exceed 40 feet in fresh water
- 3.1.2 The maximum recommended draft will change as channel conditions change.
- 3.1.3 The current maximum draft recommended by the Pilots is available at www.lakecharlespilots.com or by email at dispatch@lakecharlespilots.com
- 3.1.4 Vessels with drafts in excess of 34 feet will be boarded in accordance with the estimated Inbound Deep Draft Boarding Windows published on the Pilots' website.
- 3.1.5 The published Inbound Deep Draft Boarding Windows are *estimates* based on predicted tides and currents and may be modified without notice due to weather conditions.
- 3.1.6 Outbound Deep-Draft Windows are not published, but determined on a case-by-case basis due to the sporadic nature of outbound deep draft transits.
- 3.1.7 Depending upon channel conditions; deep draft vessels (inbound or outbound) may be scheduled for transit to take advantage of the highest water level possible in certain locations.

4. Meeting Guidelines

4.1 Inner Bar

- 4.1.1 On the Inner Bar; under normal environmental conditions, two vessels whose combined draft equals 60 feet or less and whose combined beam is equal to or less than one-half the width of the project channel, ($400/2=200$) feet, may meet.
- 4.1.2 On the Inner Bar; lighter draft vessels exceeding the beam criteria above *may* meet if the pilots of both vessels agree to the maneuver.

4.2 Outer Bar

- 4.2.1 On the Outer Bar, generally all vessels may meet at any time, with a few exceptions.
- 4.2.2 On the Outer Bar; two vessels of maximum recommended draft may meet if the combined beam is less than one-half the width of the project channel ($800/2=400$ feet).
- 4.2.3 Vessels generally do not meet within $\frac{1}{2}$ mile north or south of the mouth of the Cameron Jetties (Lights 41 & 42).
- 4.2.4 Meeting situations on the Outer Bar are timed by the pilots involved to ensure the vessels meet in an acceptable location, i.e. not in turns or in other areas of concern.

4.3 LNG Carriers

- 4.3.1 LNG carriers are regulated by a USCG-mandated moving safety zone which extends 2 miles ahead and 1 mile astern of an LNG ship to the edges of the channel. No vessels may meet an LNG ship in the channel without specific approval of the Captain of the Port.
- 4.3.2 LNG vessels may meet another vessel on the Outer Bar *if one of the vessels exits the buoyed channel*. The ability to exit the buoyed channel is determined by a vessel's draft at the meeting area.

5. Tug Standards

The table below is designed to clarify tug descriptions and escort recommendations without having to repeat the descriptions in the individual standard. They are modeled after the classification system used in Houston and adapted to the existing tugs working on the Calcasieu Ship Channel.

	Approximate	Approximate
Class of Tug	Bollard Pull Ahead	Bollard Pull Astern
C Conventional Twin Screw	32-37 Tons	20-24 Tons
T Medium Tractor (incapable of performing indirect maneuvers)	50 - 70 Tons	50 - 60 Tons
E High-Speed Escort Tractor (capable of performing indirect maneuvers)	50 - 80 Tons	50- 75 Tons

A Class T tug may substitute for a Class C tug;

A Class E tug may substitute for a Class C or Class T tug;

In some instances, at pilot discretion, two Class C tugs may substitute for one Class T or E tug.

Ships with drafts greater than 34 feet are considered “loaded” for the purposes of the escort standards.

5.1 Active Escorting

- 5.1.1 A minimum of one Class E tractor tug shall actively escort all LNG ships inbound and outbound between the Cameron Jetties and any LNG terminal.
- 5.1.2 A minimum of two Class E tractor tugs shall actively escort all Q-Flex Class LNG ships inbound and outbound between the Cameron Jetties and any LNG terminal.
- 5.1.3 Under normal environmental conditions; a minimum of one Class T tractor tug and one Class C tug shall actively escort all loaded Aframax and larger ships above the Calcasieu Intersection.

- 5.1.4 All loaded Panamax and larger (>55,000 dwt) ships shall be actively escorted by a minimum of one Class T tractor tug past the Cameron LNG terminal, whether inbound and outbound, when an LNGC is moored at the Cameron LNG facility. *(Comment: This is about two miles farther down river from the existing tethered escort area).*
- 5.1.5 Loaded Handymax vessels (35,000 to 55,000 dwt) may require an active escort past the Cameron LNG terminal, when an LNGC is moored at the facility, based on the situational. The decision will be at the discretion of the passing ship pilot. *(At this time, it is not anticipated that active escorts will be recommended on most Handymax ships past the Cameron LNG terminal).*
- 5.1.6 Handymax or larger vessels (>35,000 dwt) passing through the I-210 Bridge shall have a minimum of one Class T tug or two Class C escort tugs in order to mitigate the risks of allision with the bridge. The use of a tethered tractor tug is recommended by the U.S. Coast Guard. (MSIB LC01-2008)
- 5.1.7 Vessels less than 35,000 dwt passing through the I-210 Bridge may be required to have a minimum of one Class C escort tugs in order to mitigate the risks of allision with the bridge. The use of a tethered tractor tug is recommended by the U.S. Coast Guard. (MSIB LC01-2008)
- 5.1.8 Aframax and larger ships in ballast may be required to have active escort tugs until the ship has cleared moored ships above the Calcasieu Intersection. *(At this time, it is not anticipated that active escorts will be recommended on Aframax and larger ships in ballast past the Cameron LNG terminal).*

5.2 Passive Escorting

5.2.1 The Pilots have requested a passive escort on all piloted vessels passing the Cameron LNG terminal to help protect the moored LNGC in the event of a steering or mechanical failure on the passing vessel. Cameron LNG has agreed to provide this passive escort tug through their tug provider, Moran Towing of Lake Charles. The Pilots have agreed that the passive escort tug will be called upon to assist a passing vessel *only* when the pilot on the passing vessel requests assistance due to a situation that threatens a moored LNGC, and that the obligation to provide the passive escort tug ends when the passing vessel no longer poses a threat to the moored LNG vessel.

5.3 Anchoring, Docking, Sailing

5.3.1 The number of and type of tugs required for anchoring, docking or sailing of vessels not otherwise specified in this section, will be recommended by the on-scene pilot and agreed upon with the vessel's master, if possible.

6. Multiple Pilot Requirements

- 6.1 Vessels that do not meet the visibility criteria listed in 1.1.1 may require two pilots at the sole discretion of the Lake Charles Pilots.
- 6.2 All LNG carriers shall require two pilots on the Inner Bar if any portion of transit upon the Inner Bar of the Calcasieu Ship Channel is expected to occur during hours of darkness.
- 6.3 All vessels above 300 meters (984 feet) in length shall require two pilots at all times during transit upon the Calcasieu Ship Channel.
- 6.4 Special movements such as drydock operations, oil rigs or heavy-lift operations will be evaluated and the number of pilots required will be specified prior to the operation.

7. Weather Guidelines

7.1 Weather Restrictions on LNG Carriers

7.1.1 LNG Carriers are generally restricted to sustained winds of approximately 20 knots, This figure may vary slightly depending on several factors such as type of LNG ship, longitudinal windage and tug availability.

7.1.2 LNG Carriers are generally restricted to a maximum of 0.7 knots of cross-current along the Outer Bar Channel, as measured by the PORTS[®] current meter located on Lighted Buoy 36. (*Comment: this is equal to holding 5 degrees of leeway at 8 knots, which is the target speed for entering the breakwater with escort tugs.*)

7.1.3 LNG Carriers are generally restricted to a minimum visibility of two nautical miles.

7.2 Suspension of Pilot Services

This section is included as a guide to assist the channel users in their planning.

7.2.1 Generally, pilot services will be suspended when winds on the Outer Bar reach 25 to 30 knots and/or seas of 10 feet or greater. This is variable depending on several factors, but is included in these Standards to assist channel users in planning.

7.2.2 Pilot services may occasionally be suspended during the approach of severe weather to avoid dangerous situations in our narrow channel.

7.3 Pre-Hurricane and Post-Hurricane Operations

This section is included as a guide to assist the channel users in their planning and applies to tropical storms as well as hurricanes.

- 7.3.1 For planning purposes; pilot services are generally suspended approximately 60 hours prior to a named storm predicted landfall in the area or passage due south of Cameron, Louisiana. This is because conditions usually become very rough and evacuation is usually ordered for Cameron Parish somewhere in this timeframe.
- 7.3.2 Vessels intending to leave port should order to sail no later than 72 hours prior to a storm's landfall in the area or passing due south of Cameron in order to clear the Outer Bar Channel prior to the suspension of pilot services.
- 7.3.3 Ships *not intending* to stay in port during a named storm *may or may not* be started inbound by the pilots later than 84 hours prior to a storm's predicted landfall in the area or passage due south of Cameron, Louisiana. This will be decided on a case-by-case basis.
- 7.3.4 Ships intending to stay in port will be boarded up until the suspension of services is enacted. The Pilots generally make every attempt to accommodate vessels' requests, if possible.
- 7.3.5 Depending upon the severity and proximity of the storm to the channel; it may take up to a week to restore even partial traffic flow.
- 7.3.6 For storms that have little impact on our immediate area; expect traffic to be restored within 24 hours after passage.
- 7.3.7 For storms that make a direct hit on our area; expect a minimum of three days after passage, for surveys to be performed and aids to navigation restored, before traffic resumes.