

XVII. INCLEMENT WEATHER: STANDARDS OF CARE FOR VESSEL MOVEMENTS

A. Purpose: Inclement weather requires heightened awareness and vigilance. This section is intended to provide clear guidance to mariners as to what is expected of them when navigating in inclement weather in the area covered by the HSP. Nothing in this section shall be construed to require the master of a vessel to commence a transit during inclement weather, nor does this section replace compliance with the COLREGS. It is recognized; however, *under certain circumstances, vessels may safely transit during inclement weather provided that equivalent safety levels are applied.*

This section defines inclement weather (both reduced visibility and high winds), provides guidance for determining whether or not to commence a vessel transit, and outlines minimum equivalent safety levels to be applied when transiting during inclement weather.

B. Background: It is important to understand the dynamics of the ports of Los Angeles and Long Beach, and their vessel traffic systems in order to anticipate what is expected from all levels of port users. Under a memorandum of agreement, vessel traffic management in the LA-LB area is divided into 3 zones handled by separate vessel traffic centers (VTC). The jointly operated Southern California Marine Exchange / Coast Guard Vessel Traffic Service functions as the VTC for traffic outside the federal breakwater, and out to 25 nautical miles from Point Fermin. Each respective pilot station (LA and LB) function as the VTC's for traffic inside the breakwater (see Ch. XI Vessel Traffic Service).

C. Definition of Inclement Weather:

1. **High Winds:** Whenever the National Weather Service issues a “small craft advisory” for sustained winds of 21 to 33 knots potentially in combination with wave heights exceeding 10 feet (or wave steepness values exceeding local thresholds).
2. **Restricted Visibility:** Whenever conditions of visibility fall below the following:
 - a. Tankers 150,000 DWT or greater: 1 nautical mile
 - b. Tankers greater than 60,000 DWT, but less than 150,000 DWT: .75 nautical mile
 - c. All other vessels 45' draft or more: .75 nautical mile
 - d. All other tankers and petroleum barges: .5 nautical mile
 - e. All other vessels: 3 times vessel's LOA

D. Guidelines For Commencing A Transit During Inclement Weather: Vessel characteristics, navigational equipment and the availability of shoreside support must be considered when a movement is undertaken during inclement weather. Conditions of visibility and wind can vary considerably throughout the port complex at any given time and may impact the decision to

proceed. While specific movement parameters are difficult, if not impossible, to define, it is recommended that mariners carefully consider commencing vessel movements inside the federal breakwater when conditions reach the defined thresholds contained in Section 3 above.

1. Piloted Vessel Guidelines:

a. General: When inclement weather exists along a vessel's intended route:

- i. The respective pilot station management will be notified, and
- ii. Prior to commencing a transit, the operating pilot (the pilot directing the movement of the vessel) will conduct a risk analysis that includes consultation with a second pilot. This expanded participation is a key risk reduction measure.

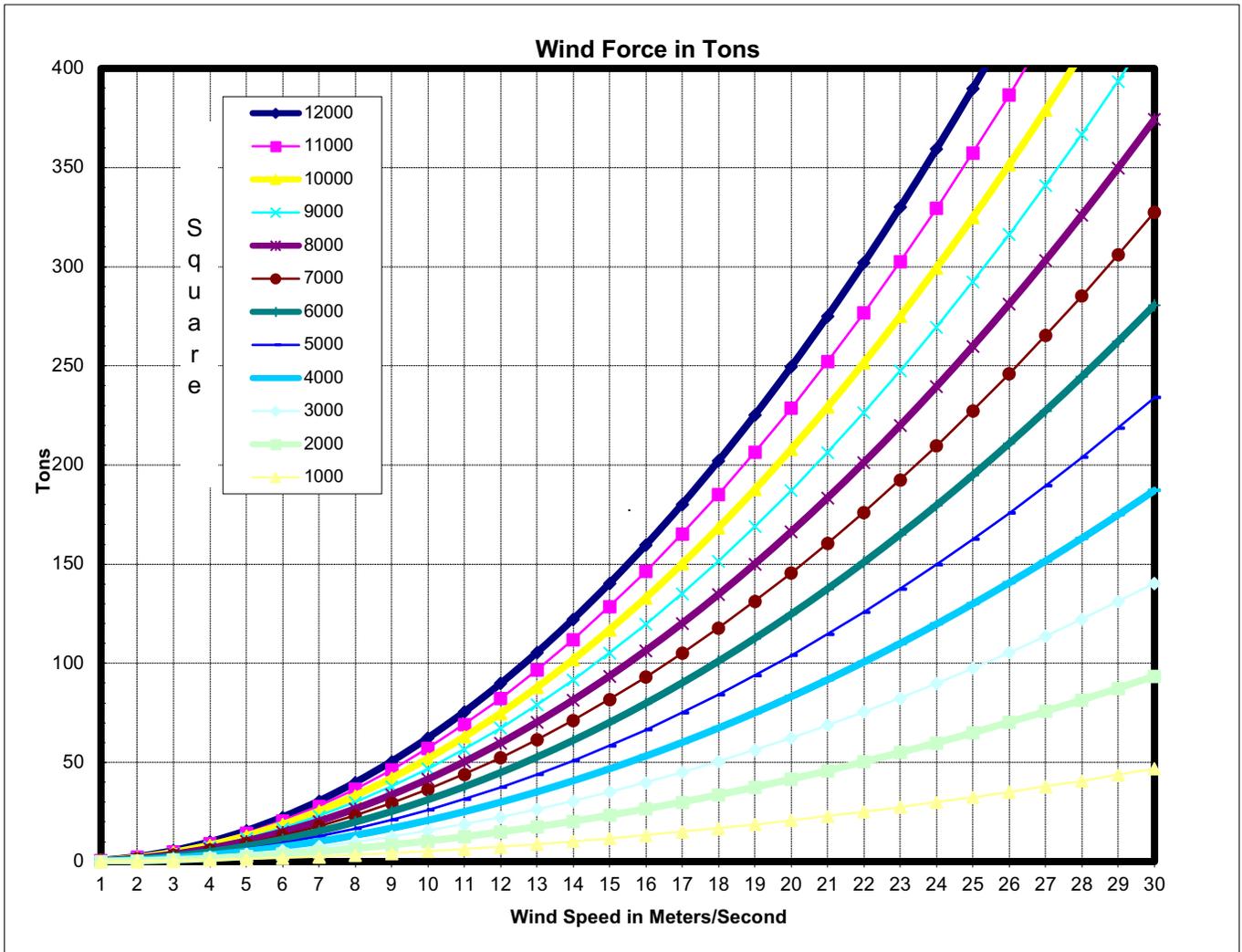
b. Reduced Visibility:

- i. When visibility inside the federal breakwater is less than 0.5 mile, the respective vessel traffic center (VTC) will impose one-way traffic restrictions when and where appropriate.
- ii. When commencing a vessel movement in reduced visibility, as defined in Section 3.b. above, shoreside radar assistance and carry-on enhanced navigational tools such as a Portable Pilot Unit (PPU) shall be readily available for use.
- iii. When reduced visibility is encountered after commencing a transit, the operating pilot should take appropriate precautions to minimize the risk of collision. Precautions may include but are not limited to continuing the transit or anchoring, reducing speed, enlisting shore-based radar support and securing additional tug assistance.

c. High Winds: Vessel movements will proceed on a case by case basis. Depending on direction and force of wind, type and characteristics of the vessel, movements requiring more than 50 tons of force to hold the vessel against a wind on the beam shall be carefully considered. Below are examples of wind velocities acting on corresponding sail areas that would require 50 tons of counter force exerted by tugs and/or thrusters [formula: $(total\ area/1000) \times (V^2/18) = wind\ effect\ in\ tons$ where "V" is the wind speed in **meters/second**]:

- i. 1,000 square meters – 60 knots
- ii. 5,000 square meters - 28 knots and
- iii. 10,000 square meters - 18 knots

iv. Wind Force Chart



v. Example calculations for determining total sail area in square meters for various vessel types:

Example 1: 9,500 T.E.U. containership at 14.5m draft
 LOA: 330m
 Height to top of containers*: 34m

330m x 34m = 11,220 sq. meters
 9 m/s (18 knots) of beam-wind exerts 50 tons of force

* The height to the top of the container stack can be estimated from "Height of Eye" or by estimating the container stack height and adding it to the freeboard.

Example 2: Panamax bulk carrier or tanker in ballast

LOA: 250m

Freeboard: 9m

$250\text{m} \times 9\text{m} = 2,250$ sq. meters

20 m/s (40 knots) of beam-wind exerts 50 tons of force

Example 3: RORO ship

LOA: 200m

Height of Eye: 30m

$200\text{m} \times 30\text{m} = 6,000$ sq. meters

12 m/s (24 knots) of beam-wind exerts 50 tons of force

Example 4: Large passenger vessel – QEII

LOA: 344m

Height of Eye: 41m

$344\text{m} \times 41\text{m} = 14,100$ sq. meters

8 m/s (16 knots) of beam-wind exerts 50 tons of force

2. **Non-Piloted Vessel Guidelines:** It is recommended that all vessels develop, and follow, their own internal operating guidelines for inclement weather transits, including a provision for second opinion consultation.

E. Application of Equivalent Safety Levels: When a vessel master intends to commence a transit during inclement weather, at a minimum, the following equivalent safety levels should be adhered to:

1. **Vessels 1600 GT or greater while operating inside the federal breakwater:**
 - a. Be under the control of a USCG licensed pilot with the appropriate endorsement for the vessel and area of operation, and
 - b. Have shore-based radar immediately available to assist the vessel.
2. **All vessel masters and pilots** (if employed) should make a positive evaluation of the following:
 - a. The number of vessels transiting within the harbor and expected traffic concentrations,
 - b. Planned transit speeds appropriate for the prevailing conditions,

- c. The maneuvering characteristics of the vessel,
- d. The quality of the vessel's radar and navigation systems
- e. The vessel's size and draft in relation to the area to be transited,
- f. Number, type and power of assist tugs,
- g. Number and power of bow/stern thrusters available,
- h. Maneuvering room at various stages of the transit,
- i. Quality of the vessel's bridge team
- j. Special circumstances to be encountered (e.g. dredging projects, obstructions).
- k. Wind direction in relation to planned maneuvers.

F. COTP Notification of intention to move in inclement weather without applying equivalent safety levels: Vessels 1600 GT or greater, that intend to commence a vessel transit during inclement weather without complying with Section E, above (including shore based radar support), shall make the following broadcast to the VTS on VHF Channel 14 at least 15 minutes prior to getting underway:

1. *“Vessel name/call sign, making our inclement weather COTP notification, as per guidance within the Harbor Safety Plan, that we intend to transit from vessel location to intended destination.”*
2. In addition a safety broadcast will be made on Channel 13 and the vessel will coordinate its movement with the appropriate vessel traffic center.

G. Summary of other existing measures: The following are non-encompassing examples of regulations or internal standards of care already followed by entities within the port during inclement weather:

1. When winds are forecasted and/or observed at 35 knots or greater in the VTS AOR (including wind gusts), vessels shall ensure their propulsion plant is placed on immediate standby and a 2nd anchor, if installed, is made ready to let go.
2. When winds are forecasted and/or observed at 35 knots and greater, VTS LA-LB will maintain a heightened awareness for dragging anchors in the federal anchorages.

3. VTS LA-LB will make an hourly broadcast on VHF Ch. 14, advising vessels when Restricted Visibility has been reported in the VTS AOR (<1nm) and recommend vessels maintain at least 1/2nm separation.
4. The following organizations have their own internal guidelines for inclement weather:
 - a. VTS LA-LB: Internal Operating Procedures outline protocols for inclement weather, including measures for restricted visibility and heavy weather conditions.
 - b. Pilots: Pilot Operations Manuals prescribe a variety of criteria specific to vessel size and berth / port area.
 - c. Ferry operators: High Speed Craft Operations Manuals contain guidance on wave heights.
 - d. Small passenger vessels: some of these vessels have internal guidelines to curtail operations in heavy winds.
 - e. Facilities regulated under 33 CFR Part 154 have wind criteria in their individual operations manuals for ceasing cargo operations and disconnecting cargo transfer equipment. In addition, the state of California has specific Marine Oil Terminal Engineering and Maintenance Standards (MOTEMS) which include inclement weather guidelines.