VESSEL OPERATING PROCEDURES (Best Maritime Practices)

The LA/LB Harbor Safety Plan (HSP) contains operating procedures for vessels. All of the procedures are considered Best Maritime Practices, but some are Regulations (either Local, State or Federal) while others are non-regulatory "Standards of Care" **(Regulations are shown in bold).** These Vessel Operating Procedures have been extracted from the main text of the HSP in order to create a helpful "Quick Reference Guide" containing the most important information necessary for safe, reliable and environmentally sound vessel movements in and around the port area. These Vessel Operating Procedures list only the basics; additional and more detailed information can be found in HSP Chapters addressing each topic. Port Tariffs also contain requirements for vessels operating in and around the port. Familiarization and compliance with the Harbor Safety Plan and the Port Tariff(s) are a must! An electronic copy of the HSP and other useful links are available on the Marine Exchange home page at: HTTP://www.mxsocal.org. Nothing in these procedures precludes a master and/or pilot from taking necessary and prudent actions to avoid or mitigate unsafe conditions.

Topics Covered in this Quick Reference Guide:

IMPORTANT GENERAL INFORMATION

Pilot Requirements: **Local Port Tariffs require vessels of greater than 300 gross tons to use a federally-licensed pilot whenever navigating inside the breakwater.** In most circumstances, vessels employ the services of a federally-licensed local pilot from Jacobsen Pilot Service (for Port of Long Beach) or the Los Angeles Pilot Service (for the Port of Los Angeles). In instances where the master of any vessel that is subject to pilotage wishes to decline the use of a local pilot, before entering, leaving or shifting within the Ports of Los Angeles or Long Beach, the master shall obtain prior permission from the United States Coast Guard Captain of the Port. Any vessel having received such permission from the Captain of the Port must notify the VTS and the appropriate pilot station before arrival or before commencement of any movement within the Harbor, and must abide by all local rules and regulations.

Equipment Failures: **Vessels are required by law to report navigational equipment, propulsion, steering or other vital system failures as soon as possible to the Coast Guard via the COTP office or the Captain of the Port representative at VTS on channel *14*.** The COTP will require appropriate "equivalent levels of safety" which may include:

1. Directing vessels to outside anchorage pending verification of repairs;
2. Restricted speeds with suitable tug escort/assist;
3. Second licensed navigation officer on the bridge for radar plotting, etc.
4. Sea Trials performed to the satisfaction of the Master, Pilot and the COTP.

VESSEL TRAFFIC SERVICE (Chapter XI)

Vessel traffic in the ports of and approaches to Los Angeles and Long Beach is managed by three entities:

1. Vessel Traffic Service - for the port approaches (25 nm from Point Fermin to the Federal Breakwater)
2. Jacobsen Pilot Service - for the Port of Long Beach
3. Los Angeles Pilot Service - for the Port of Los Angeles

Vessel Traffic Service (VTS):

A VTS is in operation on the approaches to Los Angeles and Long Beach Harbors. Operated jointly by the U.S. Coast Guard and the Marine Exchange, the VTS provides information about commercial, other vessel traffic and navigation safety. **Covered vessels are required to participate in the VTS. The following are considered "Covered Mandatory Full Participant" vessels:**

1. **Every power driven vessel of 40 meters (131 ft.) or more in length, while navigating.**
2. **Commercial vessels 8 meters (26 ft.) or more in length that are towing alongside, astern or by pushing ahead.**
3. **Every vessel certificated to carry 50 or more passengers for hire, while engaged in trade, under sail or power.**

The following are considered "Mandatory Passive Participants":

Every power driven vessel 20 meters (65 ft.) or more in length, every vessel 100 gross tons or more carrying one or more passengers for hire and every dredge or floating plant are required to monitor Channel 14 VHF/FM when operating in the VTS area.

Notes of Interest:

1. The outer limit of the VTS Area Of Responsibility (AOR) is defined by a 25 nm arc from Point Fermin (LAT 33 42.3'N, LONG 118 17.6'W).
2. There is no speed restriction between the 25 mile arc and the Precautionary Area.

However, ships are required to be at 12 knots or less upon entering the Precautionary Area. There is a voluntary Air Quality Compliance zone from a 40 nm arc from Point Fermin Light, within which vessels are requested to observe a 12-knot speed limit.

3. **A minimum vessel separation of 1/4 nm is required in the Precautionary Area.**
4. **Code of Federal Regulations, CFR 33, Part 165, Subsection 165.1152, identifies portions of the Precautionary Area as a Regulated Navigation Area.**

Arriving Vessels Upon Entering the 25 Mile Outer Limit:

Call "San Pedro Traffic" on VHF/FM Channel 14 and provide the following information:

1. **Vessel Name/Call Sign.**
2. **Position, course and speed.**
3. **Vessel destination.**
4. **State whether or not taking a pilot.**
5. **Estimated time of arrival to the breakwater/anchorage.**
6. **Tank vessels report their displacement.**
7. **All required engine checks have been satisfactorily conducted.**
8. **Any navigational discrepancies onboard the vessel.**

Contact Los Angeles Pilots on Channel 73 or Long Beach Pilots on Channel 12 to arrange pilot service.

Limit their speed to 12 knots or less upon entry to the Precautionary Area.

Upon Entering the Precautionary Area:

Call " San Pedro Traffic" and provide the following information:

1. **Confirm vessel speed is 12 knots or less.**
2. **Confirm master is on the bridge.**
3. **Confirm vessel is in hand steering.**
4. **Maintain a minimum vessel separation of 1/4 nm.**

Departing Vessels from Inside the Breakwater:

15 minutes prior to getting underway, contact Los Angeles Pilots on Channel 73 or Long Beach Pilots on Channel 74 (depending on which harbor the vessel is in) to check into the traffic system. Provide vessel name, type, departure point, destination and intended route.

15 minutes prior to the breakwater entrance, call "San Pedro Traffic" on VHF/FM Channel 14. Breakwater entrances include Los Angeles Gate (LA), Long Beach Gate (LB) and Anaheim Bay, (Naval Weapons Support Facility, Seal Beach). Provide the following:

1. **Vessel Name/Call Sign.**
2. **Destination and route upon departure.**
3. **Acknowledge VTS traffic report.**
4. **Report departure from Precautionary Area to VTS.**
5. **If outbound, ETA to 25 nm from Point Fermin.**
6. **Report departure from VTS at 25 nm limit.**

Sea Approaches – CAUTION

The Master's attention is directed to NOAA Chart nos. 18746 & 18749 or BA 1063 & 1082 regarding regulations for:

1. Passage of Los Angeles and Long Beach sea buoys.
2. Transit of Los Angeles and Long Beach Pilot Boarding Areas.
3. Anchorage G, outside the breakwater.

VESSEL SPEED LIMITS

These speeds restrictions reflect favorable circumstances and conditions and shall be adjusted for safety based on weather and tidal conditions, vessel maneuvering characteristics, traffic density, construction/dredging and other possible conditions and circumstances.

Tank Vessels:

Precautionary area (approach to port): ……..… 12.0 kts

Between the seaward limits of the applicable tank vessel escort zone and anywhere inside the Federal Breakwater (except where lower speed limits apply):

Displacements less than 60,000 metric tons: ……..…… 8.0 kts
Displacements of 60,000 metric tons and more: …….…….. . 6.0 kts

Other than Tank Vessels:

Precautionary area (approach to port): ……...… 12.0 kts

Long Beach (LB Port Tariff):

Within the Main Channel between the breakwater entrance and light 6 ……. . 10.0 kts

Everywhere else in the harbor: ……..…… 6.0 kts

Los Angeles (LA Port Tariff):

Outer Harbor (between the breakwater and Reservation Point) if draft greater than 1.5 meters: ……..……. …… 10.0 kts

West Channel, Fish Harbor, marinas, yacht anchorage …….. 4.4 kts
Everywhere else in the harbor……..… 6.0 kts

See, Port Tariff for speed limits for vessels that have drafts of 5 feet (1.5 meters) or less.

TUG ESCORT/ASSIST FOR TANK VESSELS (Chapter XII)

Overview: "Tug Escort" refers to stationing tugs in proximity to a vessel during port transits to provide immediate assistance should a steering or propulsion failure occur. "Tug Assist" refers to positioning tugs alongside a vessel and applying force to assist making turns, reducing speed, providing propulsion and docking.

Tug Escort Applicability: **State regulations require escort tug(s) to meet inbound, laden tank vessels (carrying 5,000 or more metric tons of oil in bulk as cargo) at the seaward limit of the applicable Tank Vessel Escort Zone. Also, all tank vessels shifting within the harbor(s) (including dock to anchor, anchor to anchor and dock to dock) must comply with the escort requirements**. Assist tugs, in addition to the prescribed escort tugs, may be required during port transits. Outbound laden tank vessels are not required to use escort tugs once they have safely cleared the breakwater. Arrangements should be made via the vessel agent, tug company, or appropriate pilot service to ensure compliance with these regulations.

Except for tank barge/primary towing units that have total displacements of 20,000 metric tons or less, escort tugs must be tethered.

Inbound, laden Oil and Chemical Tank Vessels shall not proceed closer than the seaward limit of the applicable Tank Vessel Escort Zone, as described in 851.22(c), unless the prescribed escort tug(s) are in position at the seaward limit of the applicable Tank Vessel Escort Zone. Masters shall also ensure that anchors are ready for letting go prior to entering the applicable Tank Vessel Escort Zone.

Prior to commencing an escorted transit, the tank vessel master/pilot shall hold a "pre-escort conference" that should at a minimum include:

1. contacting the escort tug operator to confirm the number and position of the escort tug(s); and
2. establishing the radio frequency to be used; and
3. establishing the destination of the tank vessel; and
4. discussing any other pertinent information that the master/pilot and escort tug operator deem necessary.

TANK BARGE AND TUG MATCHING CRITERIA

Refer to Chapter XII of the Harbor Safety Plan

TANKER FORCE SELECTION MATRIX

TANKER FORCE SELECTION MATRIX	
Tanker Displacement	**Forces For Tug(s) Tethered at the Stern (See Notes Below)**
Metric Tons	**Short Tons**
0 to < 60,000	10
60,000 to < 100,000	20
100,000 to < 140,000	30
140,000 to < 180,000	40
180,000 to < 220,000	50
220,000 to < 260,000	62
260,000 to < 300,000	75
300,000 to < 340,000	87
340,000 to < 380,000	105
380,000 to < 420,000	128

Note 1: Ahead forces for tugs using stern lines (e.g., Voith-Schneider propeller - VSP tugs). Astern forces for tugs using headlines (e.g., azimuth stern drive – ASD tugs)

Note 2: The “Forces For Tugs” described in the Tanker Force Selection Matrix were evaluated in a water depth equal to 1.2 times the tanker's deep draft for tankers with a displacement of less than 260,000 metric tons, and in a water depth equal to 1.1 times the tanker's deep draft for tankers with a displacement equal to or greater than 260,000 metric tons.

Only tractor type tugs may be employed to meet the requirements of the Tanker Force Selection Matrix.

Any escort tug(s) employed to meet the "Forces For Tug(s)" requirements in the Tanker Force Selection Matrix shall have a pulling power as follows:

1. Laden tankers with displacements less than 180,000 metric tons must employ at least one tractor tug that has sufficient power to satisfy the "Forces-For-Tug(s)" requirements in the Tanker Force Selection Matrix.

2. Laden tankers with displacements equal to or greater than 180,000 metric tons may employ two tugs that have sufficient combined power to satisfy the "Forces-For-Tug(s)" requirements in the Tanker Force Selection Matrix, provided that:

    - both tugs have bollard pull ratings of 45 short tons or more, and
    - a team towing configuration is used. A "team towing configuration" is the practice of running two tugs in tandem on aft leads.

All the escort tugs required to satisfy the Tanker Force Selection Matrix shall be tethered on the tanker's stern.

The force requirements contained in this subchapter reflect favorable circumstances and conditions. The tanker master/pilot shall arrange for additional escort tug(s) should adverse weather conditions, unusual port congestion, the contemplated movement of the vessel or other conditions or circumstances so require.

Tugs Employed in LA/LB

Crowley Marine Services, Inc. *

Name	Ahead Bollard Pull		Astern Bollard Pull	
	Kips	Short Tons	Kips	Short Tons
SCOUT	104.00	52.00		
MASTER	104.60	52.30	87.66	43.83
LEADER	117.88	58.90		
ADMIRAL	108.80	54.40		
GOLIAH	110.08	55.04	103.56	51.78

Foss Maritime *

Name	Ahead Bollard Pull		Astern Bollard Pull	
	Kips	Short Tons	Kips	Short Tons
CAMPBELL FOSS	126.94	63.47	137.18	68.59
ALTA JUNE	133.52	66.76	129.52	64.76
CAROLYN DOROTHY	128.00	64.00	125.40	62.70
ARTHUR FOSS			109.31	54.66
LYNN MARIE			149.80	74.90

Millennium Maritime*

Name	Ahead Bollard Pull		Astern Bollard Pull	
	Kips	Short Tons	Kips	Short Tons
MILLENNIUM MAVERICK	103.40	51.70	99.60	49.80
ROBERT FRANCO	178.00	89.00	182.00	91.00
TIM QUIGG	100.00	50.00	105.24	52.62
MILLENNIUM DAWN	121.29	60.65	112.61	56.31
JOHN QUIGG	98.60	49.3	91.05	45.525

Sause Brothers*

Name	Ahead Bollard Pull		Astern Bollard Pull	
	Kips	Short Tons	Kips	Short Tons
ARAPAHO	32.02	16.01	20.94	10.47
REDONDO	32.14	16.07	22.34	11.17

*** Updated tug and bollard pull information and Escort Tug Inspection Program (ETIP) information are available from the Marine Exchange of Southern California web page: www.mxsocal.org

UNDER-KEEL CLEARANCE (Chapter XIV)

Masters and pilots should use their vessel's deepest draft in still water when calculating under-keel clearance. Masters and pilots should apply a plus or minus allowance for the tide when calculating depth of water, and consider the following factors:

1. Vessel's trim and list characteristics;
2. Depth of the transit area;
3. Depth at the facility or anchorage;
4. Tide and current conditions; and
5. Weather impact on water depth.

Port of Los Angeles

1. Between Los Angeles Approach Channel Lighted Buoy #1 and Los Angeles Main Channel Buoy #11, minimum under-keel clearance before correction for roll and pitch is 10 percent of vessel's draft.
2. In the channel between Los Angeles Main Channel Buoy #11and a position off the designated berth, minimum under-keel clearance is 2.0’ (0.61 m).
3. In the final approach to the berth, and while at berth, the vessel must always remain afloat.
4. Shifts via outer harbor between Los Angeles and Long Beach, minimum under-keel clearance is 3.0’ (0.91 meters).

Port of Long Beach

1. Between the Long Beach sea buoy and the Long Beach Channel Buoy #3, minimum under-keel clearance before correction for roll and pitch is 10 percent of vessel's draft.
2. In the channel between the Long Beach Channel Buoy #3 and position off the designated berth, minimum under-keel clearance is 2.0’ (0.61 m).
3. In the final approach to the berth, and while at berth, vessel must always remain afloat.
4. At anchorages inside the breakwater, minimum under-keel clearance is:
   a. 4.0’ (1.22 m) for Anchorages B-7 and B-11 when vessel's draft is 50’ (15.24 m) or more, and
   b. 2.5’ (0.76 m) for all other anchorages.
5. Shifts via outer harbor between Los Angeles and Long Beach, minimum under-keel clearance is 3.0’ (0.91 m).

Tank vessel masters and operators should also be guided by the under-keel clearance regulations for tank vessels contained in 33 CFR 157.455. Chapter XIV of the Harbor Safety Plan includes formulas for calculating the increase in draft due to pitch or list.

ANCHORING PROCEDURES (Chapter IV)

In addition to observing all port tariffs and U.S. Coast Guard regulations, the Master of any commercial vessel at anchor shall implement the following Standards of Care:

1. Maintain a 24-hour bridge watch by an English speaking licensed deck officer monitoring VHF-FM Channel 16.
2. Make frequent checks to assure vessel is not dragging anchor.
3. When winds exceed 40 knots, put the propulsion plant on standby ready to bring on line on short notice and make another anchor ready to let go. Accurate wind speed can be determined by contacting either VTS or the appropriate pilot station.
4. Provide 15-minute advance notice to the Long Beach pilot station (for inside anchorages) or to VTS (for outside anchorages) before heaving anchor to get underway.

General Anchoring Guidelines for Santa Catalina Island:

1. The three federal anchorages offshore of Santa Catalina Island "A", "B," and "C" will be assigned by the Vessel Traffic Service (VTS)

General Anchoring Guidelines OUTSIDE the federal breakwater:

1. All anchorages outside the federal breakwater will be managed and monitored by the Vessel Traffic Service (VTS).
2. Any vessel desiring to use one of these anchorages must advise their intentions to VTS on VHF-FM Channel 14 and receive clearance to do so from VTS.
3. VTS will not assign an anchorage to tankers or vessels exceeding 200 meters length overall (LOA) in the first row of anchorage sites closest to the breakwater (G-1 to G3 and F-1 to F-4).
4. VTS will not provide shoreside radar direction during anchoring; however, ranges and bearings from either the Angel's Gate or Queen's Gate Light to the center of a particular anchorage site will be offered, if requested.
5. Pilot or tug assistance outside the federal breakwater is not required for anchoring.

General Anchoring Guidelines INSIDE the federal breakwater:

1. All anchorages inside the federal breakwater will be managed and monitored by the Long Beach pilot station.
2. All vessels with a draft of 15.2 meters or greater must use a minimum of one tug to ensure proper placement of the anchor and chain, as well as to assist in turning the vessel at the anchorage site. Tank vessel masters shall refer to the tug escort/assist standards.

COMMUNICATIONS (Chapter VIII)

Operational communications in the LA/LB Harbor area are conducted by marine VHF radio and commercial telephone and originate from five principle sources: VTS, Los Angeles Pilots, Long Beach Pilots, Port of Long Beach Security and the US Coast Guard Sector LA/LB. All VHF radio users are encouraged to minimize voice traffic on all channels, maintain circuit discipline and broadcast on "low power" whenever possible.

SMALL CRAFT (Chapter X)

The Harbor Safety Plan defines “small craft” as pleasure vessels, commercial fishing vessels, and sportfishing boats.

Small craft should follow the below Standards of Care to ensure the safe operation of their vessels while in and around the port. Small craft operators should be sensitive to the fact that large commercial vessels are severely limited in their ability to stop or alter course and many times are limited in their ability to sight small vessels due to their size. COLREGS Rule 9 applies to the waters outside the federal breakwater, including the deep-water ship channel, and Inland Rule 9 applies to all navigable waters inside the federal breakwater. Small craft should not loiter in the pilot boarding areas outside of each of the breakwater entrances.

1. Ensure your vessel is safe before getting underway
2. Ensure your vessel is seaworthy
3. Keep flares and distress calling equipment readily accessible
4. Comply with the Rules of the Road – especially Rule 9
5. Avoid passing larger vessels close aboard
6. Pass tugs with caution
7. Know where the Traffic Lanes and the Regulated Navigational Area are
8. Know how and when to monitor VHF Channels 16, 14 and 13
9. Know your vessel's position
10. Be an informed mariner
11. Practice man overboard procedures

Small craft operating in restricted visibility should:

1. Take additional navigating precautions
2. Use a radar reflector
3. Maintain an accurate position
4. Reduce your speed to match existing conditions
5. Maintain a listening watch on VHF radio

INCLEMENT WEATHER: STANDARDS OF CARE FOR VESSEL MOVEMENTS (Chapter XVII)

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.*

B. 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. For tankers 150,000 DWT or greater: 1 nautical mile

b. For tankers greater than 60,000 DWT, but less than 150,000 DWT: 0.75 nautical mile

c. For all other vessels 45' draft or more: 0.75 nautical mile

d. For all other tankers and petroleum barges: 0.5 nautical mile

e. For all other vessels: Three (3) times vessel's LOA

C. 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 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 2.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.

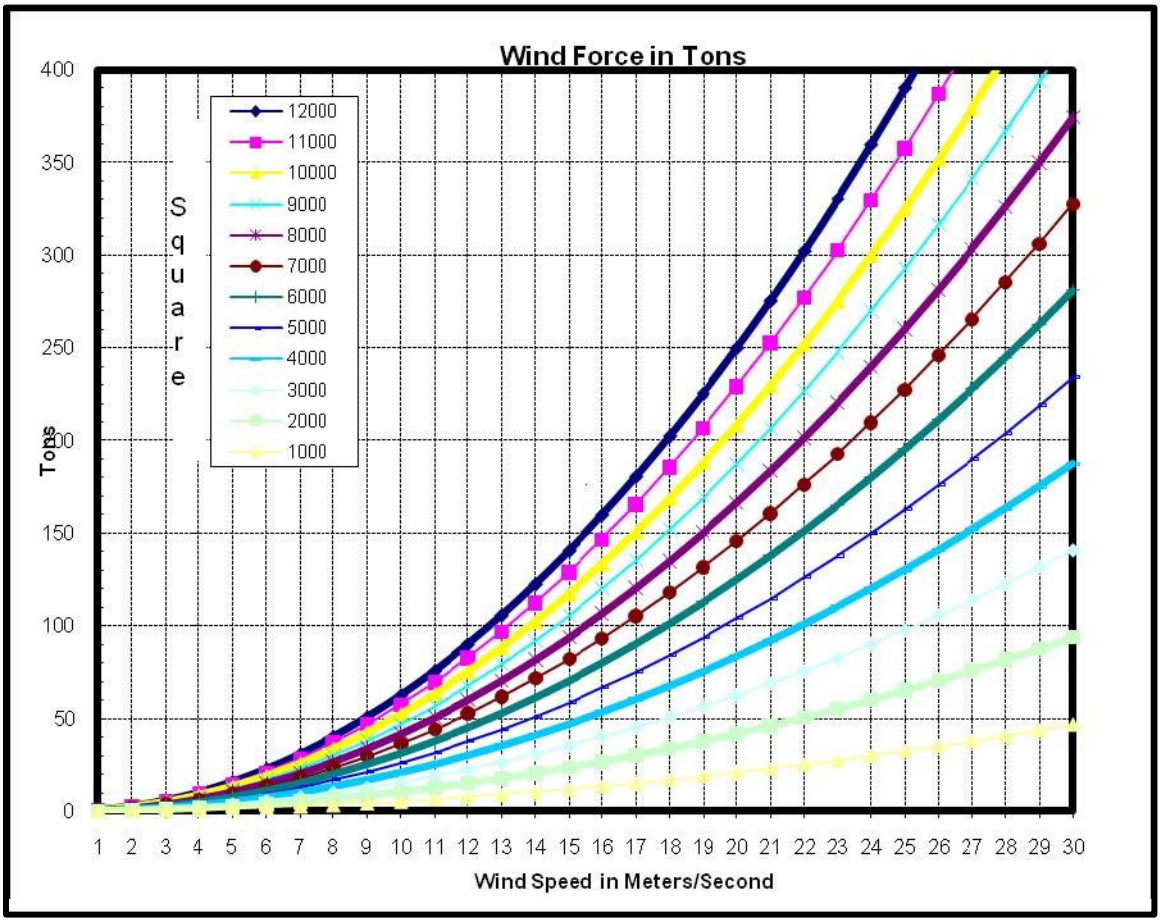
[formula: *(total area/1000) x* $(V^2/18)$ *= wind effect in tons* where "V' is the wind speed in **meters/second**]:

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



2. Non-Piloted Vessel Guidelines:

a. 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.

D. 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:

a. When operating inside the federal breakwater 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.

E. 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 item 4 (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 pilot station and the VTS.