

JUNE 2010

PORT TARANAKI

HARBOUR MASTERS GENERAL DIRECTIONS



Port Taranaki Limited
PO Box 348
New Plymouth 4615
New Zealand
Tel: (06) 751 0200
Fax: (06) 751 5051
www.porttaranaki.co.nz

OVERVIEW

This document contains information for ship's masters regarding general navigational directions for vessels transiting Port Taranaki.

Port Taranaki Ltd. accepts no responsibility for any errors or omissions contained in this document and the parameters and information outlined in this document should be regarded as guidelines only and may be varied at any time for any reason at the discretion of the Harbourmaster.

The Statutory Authority for safety and Navigation over the waters of Port Taranaki is the Taranaki Regional Council as prescribed under the Maritime Transport Act 1994, through its harbourmaster or his deputies.

Port Taranaki Ltd pilots are licensed by Maritime New Zealand (MNZ). Pilotage Exemption Certificates are issued to Masters or First Mates by the MNZ after having been examined by and have and met the requirements of the Taranaki Regional Council Harbourmaster.

Port Taranaki Ltd is the operating company for Port Taranaki.

Port Taranaki Ltd provides, and is responsible for, the maintenance of all navigation aids and provides communications and traffic control/advice through New Plymouth Harbour Radio which keeps continuous watch on V.H.F.

1. PILOTAGE AREA

The area of jurisdiction for The Taranaki Regional Council at Port Taranaki lies to seaward and within a circle of radius 2.5 nautical miles centred at Mt Moturoa trig point.

1.1. Changes to Pilotage Directions

These Directions may be varied from time to time at the discretion of the Taranaki Regional Council Harbour Master. He may also issue Special Directions to vary specific pilotage navigational requirements in the interests of safety.

1.2. Compulsory Pilotage

All vessels of more than 100 gross tons when underway are subject to compulsory pilotage within the Port Taranaki pilotage area. (Underway is defined as being not at anchor, made fast to the shore or aground.)

1.3. Pilot Boarding and Disembarking Areas

1.3.1. In Bound Vessels

Pilot Boarding Ground is 2.5 miles north of the Main Breakwater Light

Vessels bound for Port Taranaki are required to give the following minimum notice of arrival at the Pilot station:-

48 hours	Oil and Chemical tankers with details of cargo
24 hours	Vessel Arrival Information Sheet (VAIS) containing ETA, draught, LOA, cargo, dangerous goods and status of navigational equipment. (by Fax or email)
8 hours	ETA by Fax or email
2 hours	Confirmation of ETA by VHF Ch 16 or 61.

1.3.2. Out Bound Vessels

Pilot Disembarking area commences after vessel passes to seaward of the line of the Main Breakwater.

1.3.3. Outward Bound Vessels and Shifting Berth

Vessels intending to depart Port Taranaki or move within the port area are required to give initially 8 hours notice of departure and then at 2 hours prior to departure.

1.4. Pilotage Exempt Vessels

Vessels are exempt from Compulsory Pilotage under the following conditions:-

- Inward bound vessels entering the port limits proceeding to an anchorage.
- Inward bound vessels which are directed by the Pilot to proceed closer than 2.5 miles to facilitate a safe boarding.
- Outbound vessels leaving the anchorage for sea.

1.5. Sequence of Vessel Movements

The Harbour Master at all times reserves the right to arrange the sequence of vessel movements.

1.5.1. Berth Allocation Principles

The following principles are those generally used by Port Taranaki Ltd in determining berth allocations and priorities at Moturoa and Blyde Wharves. Port Taranaki Ltd reserves the right to vary these principles in particular circumstances and in the best interests of the operations of the port, at the discretion of the Operations Manager whose decision will be final.

1st Principle

Moturoa Wharf prime use : Dirty Bulk (fertiliser, coal, etc.)
Clean Bulk (grain, cement, etc.)

Blyde Wharf prime use : Containers
Heavy lifts
Dairy
Meat
General

2nd Principle

Some customer contracts give ships a berth priority.

3rd Principle

Ships set their berthage priority in order of arrival, except as varied by the 1st and 2nd principles.

4th Principle

Dirty bulks may be worked at Blyde Wharf, providing they do not interfere with other operations or introduce the possibility of contamination. The berth must be vacated for a later arriving prime user in ample time for the berth to be properly prepared.

5th Principle

Moturoa Wharf can be used for any cargo but must be vacated for a later arriving prime user in ample time.

6th Principle

Where a vessel is occupying a berth, but not working at least 12 hours per day and another vessel is waiting and could work, the former must vacate the berth losing its arrival priority.

1.6. Pilot Vessel

Pilot boats do not remain permanently on location.

When attending a transiting vessel, pilot vessels display appropriate day or night signals for pilot vessels.

The primary pilot vessel is named '**WESTGATE**' and has an orange hull, black inflatable fenders and yellow superstructure.

The alternate Pilot vessel is named '**WESTGATE RESCUE**' and has a black hull with orange superstructure.

Direct communication may be made with the pilot boat on VHF Channel 12.

1.7. Pilot Boarding Arrangements

The Master of a vessel having accepted the service of a licensed Port Taranaki Pilot is required to facilitate his boarding and disembarkation and to comply with IMO recommendations on the construction and rigging of pilot ladders and hoists.

1.7.1. Transfers Of Personnel At Sea (TOPAS)

The pilot ladder will normally be placed as close to amidships as possible, 2 metres above the water line and on the side with the best lee for vessels arriving at the pilot boarding ground.

Manropes should be rigged but are usually only used on departure.

Mooring personnel board incoming vessels once the vessel has passed through the harbour entrance. The lee side within the harbour entrance may be different to that experienced at the pilot boarding ground.

Pilots, once they have boarded the vessel at the pilotage boarding area will review the conditions expected to be experienced inside the harbour and may request that the pilot ladder be changed to the other side, prior to entry into the harbour, in order to optimise the conditions for embarking the mooring personnel.

1.7.2. Transfers Sunset to Sunrise

During the hours of darkness, only those personnel who have undertaken a Port Taranaki Ltd TOPAS course will be transferred using port company craft.

1.7.3. Transfers Sunrise to Sunset

Personnel who have not undertaken a Port Taranaki Ltd TOPAS course may only transfer from port company craft in daylight and in suitable weather conditions.

1.7.4. All Transfers

If any vessel wishes to offload/load personnel or cargo off the port and is not under the conduct of a licensed Port Taranaki Ltd Pilot then this operation must be done at a distance greater than **THREE (3)** miles from the nearest point of land.

If the prevailing weather means that the vessel must proceed towards the shoreline to provide the best lee, then the operation must commence at a distance greater than **THREE (3)** miles from the nearest point of land to take this into account so that the vessel is still beyond the three mile limit at the completion of the operation.

Tug and Launch Masters must inform the vessel's Master when they are approaching the **THREE (3)** mile range and operations are to cease until the vessel has turned and is once again beyond the limit.

In any case, transfers will not be undertaken if, in the opinion of the Tug or Launch Masters concerned, it is unsafe for any reason to undertake a transfer.

1.7.5. Alternatives to Offshore Transfer

If, for any reason, the transfer can not be undertaken outside the harbour entrance, then the option may exist for the vessel to enter port temporarily to undertake the transfer within the breakwaters either by:-

- a) Holding position mid harbour while the transfer takes place or
- b) Temporarily coming alongside a berth to transfer personnel and immediately depart afterwards. (Subject to the approval of the Harbour Master)

Note: In case a) and b) above a Marine Services Charge will be incurred.

1.7.6. Transfer Of Personnel At Sea (TOPAS) Course

Port Taranaki Ltd will, on request, conduct a TOPAS course for personnel who wish to transfer from port company pilot boats to vessels outside the harbour entrance.

Requests to undertake a TOPAS course must be given in good time and will not normally be undertaken outside normal office working hours. There is a nominal charge for this service.

1.8. Pilot Transfer Arrangements On Board Partially Or Fully Loaded Log Carriers

Chapter V regulation 19 of SOLAS 2001 sets out the requirements a ship has to meet in order to ensure that the pilot transfer arrangements are as safe as practically possible. No pilot will board or disembark from a vessel whose pilot transfer arrangements do not conform with the above regulation.

It is realised that on occasion when the vessel has deck cargo the pilot may have to traverse this. If this is so the vessel must comply with the International Timber Deck Code, in that there should be a designated stable walkway across the deck cargo which has rails each side and give the same protection as the ship side rails i.e. be a metre high and of solid construction.

The access and egress from the deck cargo should be by stairway with hand rails on each side, an extendable ladder lashed each end with rope is not acceptable.

At no time should a pilot be asked or be expected to traverse a deck cargo which does not comply with the code, all walkways should be of suitable planking securely fastened to the deck cargo.

The practice of supplying the pilot with spiked shoes or attachable crampons is not an acceptable alternative.

Mooring staff who normally go forward to assist ship's crew in making fast will only proceed forward if it is safe to do so.

1.9. Pilot/Master Information Exchange

The Master of a vessel who has accepted the services of a licensed Port Taranaki Pilot is required to declare its draught, length and beam, and to provide the Pilot with other information relating to the ship or its cargo as requested and necessary to enable the pilot to carry out his/her duties.

The Master of a vessel is required to bring to the notice of a licensed Port Taranaki Pilot any defects in, and any matter peculiar to the ship, machinery and/or equipment which might affect it's navigation.

Masters of all arriving vessels are required to complete and transmit to Port Taranaki a **VESSEL ARRIVAL INFORMATION SHEET (VAIS)**. Blank copies of the VAIS are available on the Port Taranaki Limited website and an example is attached as an appendix to this document.

Masters of all vessels are required to partake in an Information Exchange as part of the passage plan with the pilot in line with the best practices of Bridge Resource Management principles. This exchange must take place before pilotage commences and on completion the Master is required to sign the **PILOT/MASTER INFORMATION EXCHANGE FORM** (example attached as an appendix to this document) before proceeding with the transit.

1.10. Failure To Take a Port Taranaki Pilot

A ship which is being navigated within the harbour limits of Port Taranaki which is subject to compulsory pilotage under these direction's must either be under the pilotage of a licensed Port Taranaki Pilot or under the pilotage of a Pilotage Exemption Certificate holder for the area and for the ship.

If the Master of any ship navigates that ship in any part of the area of jurisdiction under the pilotage of an unlicensed person without first notifying the Taranaki

Regional Council Harbour Master that he proposes to do so, he shall be guilty of an offence.

Any person found guilty of an offence shall be liable to prosecution and/or a fine.

1.11. Reporting Misconduct of Pilots

Any incident involving misconduct or unsatisfactory performance of a licensed Port Taranaki Ltd. Pilot should be reported without delay to the Harbourmaster.

The report is to be made in writing to:-

The Harbour Master,
Taranaki Regional Council,
C/O Port Taranaki Ltd
PO Box 348
New Plymouth 4615
New Zealand

1.12. Pilotage Exemption Requirements

(a) An applicant for a Pilotage Exemption Certificate shall:

- i produce his/her certificate of competency.
- ii produce a current medical certificate, stating the general state of his/her health.
- iii produce evidence of having entered and left the Port on at least six occasions including, and if the Harbourmaster deems it necessary, at least once each way in the hours of darkness in the previous twelve months as Master or First Mate of a ship with a Pilot on board.

(b) The holder of the Pilotage Exemption Certificate shall be responsible for keeping a record of usage of the same and produce the record on request of the Harbourmaster as evidence of usage of the Certificate.

(c) Expiry

- i A Pilotage Exemption Certificate shall expire twelve months after the date of issue, unless the holder presents within one month prior to the expiration date evidence of usage of the Pilotage Exemption Certificate on at least six occasions during the preceding twelve month period.
- ii Where a Pilotage Exemption Certificate has expired the holder of that Certificate shall apply to the Harbourmaster for re-examination before being issued with a valid certificate and
- iii an applicant for such re-examination shall, if not having made six trips inward or outward within the previous twelve months, shall undertake further trips with either a Pilot, or a Pilotage Exemption Certificate holder on board, until the required six trips have been performed safely before the Pilotage Exemption Certificate is issued.

(d) Notwithstanding anything else herein contained no Pilotage Exemption Certificate shall remain valid for a period exceeding 24 months from the date of issue. Within one month prior to the expiration of such 24 month period the holder of such Certificate shall:

i produce his/her certificate of competency.

ii produce his/her Pilot Exemption Certificate

ii produce a medical certificate, stating the general state of his/her health, fitness, hearing and eyesight.

(e) Suspension of Exemption Certificate

i in the event of the holder of a Pilotage Exemption Certificate committing a breach of any rule of navigation, or any law or by-law relating to navigation, or committing any unsafe act so as to endanger navigation or harbour works, MNZ may suspend such Pilotage Exemption Certificate.

ii in the event of such suspension MNZ may, after giving the holder of the Pilotage Exemption Certificate notice in writing of the matter complained of and a reasonable opportunity of being heard, revoke the Pilotage Exemption Certificate.

(f) Notwithstanding anything else herein contained the Harbourmaster may at his/her sole discretion for reasons of safety or in the interest of all shipping, order that a Pilot be employed on a vessel, on which the Master/Mate holds a valid Pilotage Exemption Certificate.

2. COMMUNICATIONS

The following procedures will be followed by ALL vessels arriving off port irrespective of nationality and frequency of visit. Contact should be made by VHF radio at least 2 hours before arrival at Harbour Limits.

2.1. New Plymouth Harbour Radio

All radio communications should be addressed through New Plymouth Harbour Radio

All services can be obtained through this station.

2.2. Radio Frequencies

New Plymouth Harbour Radio maintains a continuous watch on the following VHF channels

Channel 16	Safety and calling
Channel 12	Port working and emergency
Channel 11	Pilots, tugs and launches
Channel 61	Long range communications (repeater channel) range @50nm

New Plymouth Harbour Radio also keeps scheduled watch on 2182 and 4125 khz

2182 khz	0000-0015, 0400-0415, 0800-0815, 1200-1215, 1600-1615, 2000-2015
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4125 khz	0015-0030, 0400-0430, 0815-0830, 1215-1230, 1615-1630, 2015-2030
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(ALL TIMES LOCAL)

2.3. Other Contact Facilities

Telephone	+64 (06) 759 9740
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Duty Pilot Mobile Number	+00274 437506
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Fax	+64 (06) 759-9844
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Email	marineservices@porttaranaki.co.nz
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Web Site	www.porttaraaki.co.nz
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2.4. Communications On Approach To The Pilotage Area

All vessels whether requiring a pilot or who are pilot exempt are required to contact New Plymouth Harbour Radio on Marine Channel VHF for instructions and information before entering the Port Taranaki Pilotage area.

3. ANCHORING VESSELS

Vessels are advised not to anchor closer than 1 nautical mile from any land. (See Appendix C)

(b) NO vessel may anchor EAST of a line bearing 197 degrees true to the Main Breakwater light. Any vessel that anchors close to the Main Leads may be requested to move.

(c) When the vessel has anchored, the time and position should be transmitted to New Plymouth Harbour Radio on VHF Ch 12. If there is any doubt as to the safety or location of the vessel, the Duty Pilot will be informed and may request further information from the vessel.

(d) Further berthing information will be given to the vessel as soon as that information is available.

4. TRANSIT REQUIREMENTS

4.1. Under Keel Clearance

The minimum Static Under Keel Clearance (SUKC) while transiting the harbour approaches and entrance shall be not less than 2.5m or 25% of deepest draft. The maximum draft a vessel may transit under this section is 10.0m.

Vessel's in excess of 10.0m draft may only transit using the Dynamic Under Keel Clearance (DUKC) system. Application to use the DUKC system must be received by Harbourmaster's office at least 24 hours in advance of the transit. An additional charge is payable for this service.

4.1.1. Static Under Keel Clearance (SUKC)

The maximum draft of a vessel while under way is not constant and may be significantly increased as a result of induced motions caused by sea, swell and wind.

The increase in draft experienced due to environmental phenomena is dependant upon a number of factors and includes the following:-

- Dimensions of Vessel Transiting
- Hydrostatic characteristics of vessel (Stability)
- Period of Sea/Swell
- Wind speed and aspect to vessel

In addition to environmental effects, a vessel's draft may be further increased due to the effect of squat caused by the "venturi" effect of passage through the water.

The Port operates a minimum Static Under Keel Clearance (SUKC) while transiting of not less than 2.5m up to a maximum draft of 10.0m. Vessel's in excess of 9.0m draft may be tide dependant to meet these requirements.

The Static Under Keel Clearance of 2.5m during vessel transit makes due allowance for the above combination of squat, heel and pitching motions that can be

experienced at the entrance of the port which is exposed to the long fetch of the Tasman Sea.

This allowance is calculated for average conditions only and in severe conditions further allowance should be made.

4.1.2. Dynamic Under Keel Clearance (DUKC)

Vessels wishing to transit at a draft greater than 10.0m may do so at the Harbourmaster's discretion and involves the use the Dynamic Under Keel Clearance (DUKC) system. Applications to use the DUKC system must be made at least 24 hours prior to the transit and involves a cost, irrespective of usage of the system, once the application has been lodged.

Full details on the usage of the DUKC system are available on the Westgate Port Taranaki Limited website at www.porttaranaki.co.nz .

4.2. Draft And Trim

The draft and trim of all vessels transiting the harbour should

- Provide sufficient propellor immersion
- Provide adequate vision ahead from the bridge
- Be sufficient to minimise leeway

4.2.1. Recommended Minimum Drafts

Vessel Deadweight	Draft Forward (m)	Draft Aft (m)
Less than 10,000	2.0	No more than 0.6m
10,000 - 20,000	2.0 - 2.5	Of the propellor
20,000 - 30,000	2.5 - 3.0	To be exposed
30,000 - 50,000	3.0 - 5.0	6.5
Greater than 50,000	5.0 - 7.0	6.5 - 7.5

Vessels should ensure that there is no excessive trim and shall ensure that the trim does not exceed 4.0m at any time while inside harbour limits, either in transit or when berthed alongside.

4.3. Transit Windows

The guidelines for assessing arrival and departure times are as follows.

4.3.1. Arrivals (Falling Tide)

The latest pilot boarding time for arriving vessels affected by a falling tide shall be not less than **one hour and thirty minutes** prior to the calculated time at which the 2.5m minimum under keel clearance remains available.

4.3.2. Departures (Falling Tide)

The latest pilot boarding time for departing vessels affected by a falling tide shall be not less than **one hour** prior to the calculated time at which the 2.5m minimum under keel clearance remains available.

4.3.3. Arrivals and Departures (Rising Tide)

Manoeuvring operations for vessels affected by tide shall not be commenced prior to the calculated time at which the minimum 2.5m under keel clearance is available.

4.3.4. Dynamic Under Keel Clearance System (DUKC)

Vessels transiting under the optional DUKC system are not subject to the above rules. Transit windows are governed by the current weather conditions as interpreted by the computerised realtime calculations which will generally result in a wider operating transit window than that under the SUKC rules. In severe weather conditions, however, the operating window may well be reduced to the extent that no operating window exists, in which case the vessel may be required to wait until conditions improve.

4.4. Visibility

Port Taranaki is not noted for reduced visibility or fog that normally occurs on very few days a year. Passing rain is the most likely cause of a reduction of visibility and this does occur regularly throughout the year, but usually of very short duration.

4.4.1 Movement in Restricted Visibility

All movement of vessels in restricted visibility is solely at the discretion of the Harbour Master. Any vessel moving in restricted visibility is required to have a properly functioning radar, echo sounder and VHF radio.

The bridge team should use all means available, including Radar, to ascertain the likely visibility to be expected during the forthcoming transit, with particular emphasis on passing squalls and showers.

If a reduction is anticipated, then the bridge team may consider it prudent to delay the transit until the visibility has improved.

4.5. Arriving Vessels

Transits should not be conducted if the visibility is less than 5 cables. The transit should be delayed until this minimum condition exists.

Before continuing a transit after a delay caused by any reason, including reduced visibility, the bridge team should reconsider the Under Keel Clearance with regard to the tide changes resulting from the delay.

4.6. Departing Vessels

Transits should not be conducted if the Breakwater heads are not visible prior to commencing to let go.

Before continuing a pilotage after a delay caused by any reason, including reduced visibility, the pilot should reconsider the Under Keel Clearance with regard to the tide changes resulting from the delay.

4.7. Night Berthage

In general night berthing should not proceed under the following conditions:-

- 1) If mean wind speed is considered excessive for the size and type of vessel in conjunction with consideration of the tug power available.
- 2) If navigation aids required for safe berthing are not operational.
- 3) If surge conditions are unsuitable, risking injury to personnel or damage to vessel or wharf.
- 4) If the vessel is not fitted with an operational radar.
- 5) If the vessel is not fitted with an operational speed measuring device.
- 6) If visibility is restricted to less than 5 cables.
- 7) Main propulsion and other aids such as bow thrusters etc. insufficient, reduced or not available.

4.8. Movement of Gas Tankers

Night movement of Gas Carriers, as with all vessel movements, will be undertaken entirely at the discretion of the pilot or pilotage exempt master in charge of the operation, unless it is postponed or cancelled on the direction of the Harbourmaster.

In addition to the rules laid down in TARANAKI COUNCIL PILOTAGE EXEMPT SOPP 1 the following rules will apply specifically for gas Carrier movements in darkness:-

- Whilst a Gas Carrier is moving within Port Limits, apart from tugs assisting and the pilot vessel, all other vessels should keep clear and should not approach closer than a distance of 50 metres from the Gas Carrier.
- Whilst a Gas Carrier is moving within port Limits there shall be no other vessels anchored or lying stopped in or near the Gas Carrier's intended path nor in the vessel's swinging area off Newton King wharf.
- During the whole period of the operation the Static Under Keel Clearance should not be less than 2.5metres.

- The leading lights, buoys and all other navigation aids as shown on Chart NZ 4432-Port Taranaki and corrected to the latest Notices to mariners, are to be functioning correctly at the time of the operation.
- The main leading lights must be visible at a distance of 1 nautical mile to the north of the main breakwater light.
- The mean wind speed should not exceed 20 knots. This may be exceeded at the harbourmaster's discretion.
- The Gas Carriers Navigational equipment, including radar, speed indicator and VHF, are to be fully operational.
- The Gas Carrier's steering gear, main engines and thrusters (if fitted) must have been tested and functioning properly.
- The prescribed number of tugs are in attendance as per Port Taranaki Ltd. Standard Operating Procedures.
- If inward bound, the speed of the Gas carrier shall be sufficient only to ensure steerage way when passing the breakwaters
- Prior to night berthing, the same Gas carrier should have previously berthed at least once in daylight.
- Surge conditions in the harbour should be checked and the operation should not proceed if there is any risk of injury to personnel or damage to the vessel or jetty.

4.9. TOWAGE

4.9.1. Tug Availability

Port Taranaki has three tugs available:-

Name	Propulsion	Bollard Pull
TUAKANA	Twin Voith	40 Tonnes
RUPE	Twin Tractor	30 Tonnes
KUPE	Twin Voith	28 Tonnes

- from time to time other tugs may be made available when operational circumstances dictate.

Unless there are exceptional circumstances, the main engine of the vessel is to be available for all movements (including shifting) of the vessel. Dead ship movements shall be undertaken solely at the discretion of the Harbourmaster.

The following guidelines are used to allocate tugs to vessels, but may be altered at the discretion of the pilot in charge of the operation in light of conditions prevailing at the time and peculiarities of the vessels involved, noting that tug(s) in attendance have three primary functions

- Assist in manoeuvring vessels
- Provide safety in case of systems failure of vessel
- 'Pin' the vessel alongside while securing shore moorings.

The availability of Bow Thrusters may, at the discretion of the pilot, reduce the number of tugs in attendance, but in no case should there be less than one tug in attendance for other than such smaller vessels as rig tenders or survey vessels which have ample power and position keeping propulsion and when in benign conditions.

In general, the standard number of tugs in attendance should not be reduced for vessels with bow and/or stern thrusters on the first visit of that vessel and an adequate assessment of the manoeuvring characteristics is made by the pilot.

4.9.2. Tug Allocation

Inwards Vessels

<u>Vessel length overall</u>	<u>Tugs Req</u>	<u>Bollard Pull</u>
<107 metres	1	7t min
107-145 metres	1	28t minimum
>145 metres	2	35t min
>180 metres	2	58t min.

Outward Vessels (Bow Out)

<107 metres	1	7t min
>107 metres	1	28t min

(Note: The above to be regarded as guidelines only. Adverse conditions may necessitate increase in numbers of tugs or bollard pull required.)

(Bow In)

Same as inwards

Shifting Vessels

Same as Inwards

4.9.3. Tug Fire Fighting Capabilities

TUAKANA and **RUPE** each have the capacity of pumping 22,000 litres of water, or foam-injected water, per minute. Tug **KUPE** has a 13,600 litres/min capacity.

MOORING ARRANGEMENTS

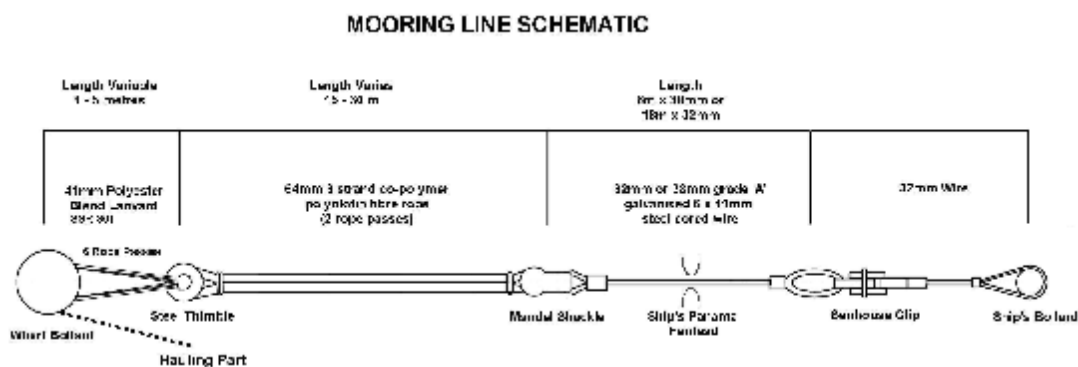
All vessels moored within the harbour shall have such cables, warps, hawsers, fenders or mooring ropes as may be deemed requisite by the Harbourmaster.

4.10. Shore Mooring System

Port Taranaki is exposed to the long fetch of the Tasman and Southern Oceans and occasionally experiences significant surge in the port which may limit berthing opportunities even in low current wind conditions.

To ensure the safety while alongside at Port Taranaki, all vessels longer than 80m are normally berthed using a shore supplied mooring system.

4.10.1. Construction of Shore Mooring



4.11. Mooring Operations

On arrival at the entrance, incoming vessels are met by two mooring personnel who will guide the ship's crew in setting up the shore mooring system.

The following guidelines are used to ascertain the minimum number of shore moorings to be used for a particular length of vessel, though this may be varied on occasion taking into account the particular vessel, state of loading, expected weather conditions during the stay, and any other special circumstances.

VESSEL LENGTH	SHORE MOORINGS FORE & AFT
< 95m	One
95m - 110m	Two
110m - 150m	Three
> 150m	Four

General comments on mooring arrangement:-

Fenders and mooring lines when accommodating a berthed vessel are subject to the swell imparted motions of sway, heave, roll, yaw, pitch and surge of the

restrained vessel. The fenders of a fender system provide a reactive force that in a well-designed system is balanced against the tension of the mooring lines.

Altering the tension of mooring lines controls the overall balance required for any condition of ship motion as required by the harmonics of the ship and the harmonics of the swell system affecting the moored vessel.

In the case of generic small enclosed harbours penetrated by long period swell systems the resulting refraction and diffraction of swell waves within and cumulative harmonic effects can be very complex.

However, such complex conditions can be managed by "tuning" the system of mooring lines.

In a condition of ship motion impelled by swells of low energy and short period, a "hard" mooring system may be appropriate to prevent or modify movement whereas in conditions of long period high energy swell systems a "soft" mooring system may be preferable.

A "soft" mooring system allows the moored vessel in motion some freedom to move with an envelope dictated by its natural harmonic and the harmonic pattern of the swell system. Such a "soft" system of mooring lines and the appropriate fenders on the berth in these circumstances only provide restraint and recoil at the extremities of the vessel's natural movement. In this case, the kinetic energy of the vessel in motion is almost dissipated and the "check" required, by fenders and moorings alike correspondingly less than that for a "hard" mooring system.

A "soft" mooring system can be conveniently "tuned" with nylon mooring lines in particular because their inherent ability to provide a high degree of elongation and return without structural damage to the lines themselves.

4.11.1. Ships Lines

The basic requirements of efficient mooring systems are described in the OCIMF publication 'Mooring Equipment Guidelines' which defines the basic requirements of a mooring system to be:-

- Same materials and construction throughout
- Same length of mooring parts
- Symmetrical arrangement of mooring parts
- Equal tension on all parts

It is primarily for the reasons stated above that, under normal conditions, only one ship's line is used to hold the vessel while the shore mooring system is deployed.

While attending the moorings in surge conditions, it is often advisable to deploy two ships lines fore and aft while the shore mooring system is deployed. It is worth remembering that the deployment of ship's lines is inherently less dangerous due to the ease of securing onto a bollard.

During development of severe conditions while alongside, a number of alternative strategies should be considered.

4.12. Mooring Strategy In Severe Weather Conditions

4.12.1. Sending Vessel to sea

A vessel experiencing excessive movement either during the berthing operation or during the course of the stay may result in the decision to remove the vessel from the port by sending the vessel back to sea. Before doing so, however, the following should be considered:-

Draft of Vessel

DUKC calculations may be made for suitable vessels

SUKC considerations may include increased UKC

Seaworthiness of Vessel

Hatches battened down, vents closed etc

Adequate crew on board

Readiness of engines

Status of ballast or cargo tanks, free surface effect, etc.

Manoeuvrability of Vessel

Engine power

Handiness of vessel

Thrusters available

Tug Availability

In any case, before the decision is made and if time permits, it may be prudent to seek recommendations and advice from the Harbour Master should be sought in order to assist in reviewing the situation and to decide on the optimum course of action and under what conditions.

4.12.2. Deploy Extra Moorings

Extra Shore Moorings

Particularly on smaller vessels which do not normally have a full suite of shore moorings deployed

Extra Ship's Moorings

Note: Ship's normally have a large number of readily available and quick to deploy late technology mooring lines.

Note: "Mixing" shore and ship's mooring types does not necessarily "double" mooring capability, but will provide a "back up" should one system fail. The two systems with disparate characteristics of stretch and adjustment is, in practice, almost impossible to balance effectively.

4.12.3. Re-Tension Moorings

Vessel security alongside is provided by a combination of fender and mooring characteristics working in tandem and the balance between the two.

In dynamic wave conditions, there are two possible methods of re-tensioning moorings to increase berthage security.

The most common method is to tighten all moorings to equal tension to reduce vessel movement.

The second method to be considered is the "soft mooring" option whereby all moorings are slackened equally.

4.13. Declared Depths

The declared depth at any berth is the minimum depth at 1.25m from the berth face and shall exist outwards for a distance of at least the vessel's beam from that berth face.

The depth in the approaches is the minimum depth existing within the design parameters of that area.

Port Taranaki Ltd undertakes regular surveys of the Harbour Approaches, Berths and Turning Circles. The latest soundings chart, available on the Westgate Port Taranaki website (www.porttaranaki.co.z) should be referenced at all times.

Declared depths for berths and channels are shown at Table 1A and Table 1B and are based on 0.0m Chart Datum.

Table 1A

APPROACHES	DECLARED DEPTHS	MAXIMUM DRAFT (SUKC)	MAXIMUM DRAFT (DUKC)
Anchorage	18m - 22m+	N.A.	N.A.
Harbour Entrance	13.5	10.0	12.5
Turning Circle	11.25	10.0	12.5

The following procedures are effective when assessing maximum draft for vessels transiting and berthing at Port Taranaki.

Transits - Arrivals and Departures

DRAFT	TRANSIT LIMITS
Up to 9.0m	May transit at any time
9.0m – 10.0m	Requires Height of tide equivalent to DRAFT minus 9.0m by completion of manoeuvre
10.0m – 12.5m	Transits may only be undertaken under the DUKC system

Note 1: Severe weather may significantly modify these parameters which define fair-weather conditions only.

Note 2: DUKC transits with vessels in the lower range of drafts in excess of 10.0m may well be undertaken at any time, particularly during neap tides, but otherwise some height of tide may be required to undertake the transit.

Note 3: Final DUKC transit drafts are dependant on real time calculations that can only be undertaken within 24 – 36 hours of the actual transit. METOCEAN modelling indicates that transits should be possible at 12.5m for 95% - 97% of all High Waters

BERTH PARAMETERS

The following table details the maximum draft allowed at each of the port's berths.

BERTH	CD	MAX DRAFT	UKC at CD
Breakwater 1	7.0m	6.5m	0.5m
Breakwater 2	9.5m	9.0m	0.5m
Moturoa 1	8.5m	7.5m	1.0m
Moturoa 2	13.5m	12.5m	1.0m
Newton King 1	13.5m	12.5m	1.0m
Newton King 2	13.5m	12.5m	1.0m
Blyde 1	11.5m	10.5m	1.0m
Blyde 2	13.5m	12.5m	1.0m
Blyde 3	7.5m	6.5m	1.0m

Any variation from the above is solely at the Harbourmaster's discretion.

4.14. Distances

The distances quoted below are approximate and should only be used as a rough guideline.

DISTANCE	Metres
Between Breakwater Heads	525
Between Blyde Wharf and Newton King	135
Between Newton King and Moturoa Wharf (Outer end)	145
Between Newton King and Moturoa Wharf (Inner end)	095
Between Moturoa wharf and Breakwater	55
Length of Blyde Berth	445
Length of Newton King Wharf	292
Length of Moturoa Wharf	315
Between Blyde Wharf and Lee Breakwater	560
Between end of Lee Breakwater and Wave Tower	220
Between Wave Tower and end Main Breakwater	465

4.15. Compass Bearings

The bearings quoted below are approximate only.

All bearings are True.

FEATURE	BEARING AND RECIPROCAL
Blyde Wharf	068 / 248
Newton King	068 / 248
Moturoa Wharf	055.5 / 235.5
Lee Breakwater	120.5 / 300.5
Main Breakwater	061 / 241

5. SAFETY

Any vessel wishing to carry out Hot Work within the Port's Operational Area must obtain a "Hot Work" Permit. Hot Work includes, but is not limited to, welding, gas cutting and grinding or any other activity which may generate heat, sparks or fire.

All lifts in excess of 20 tonnes require a heavy lift permit.

The Master shall inform Port Taranaki Ltd. 24 hours prior to arrival of any hazardous goods onboard, or goods that are to be loaded. If doubt exists as to the nature of the cargo a suitable qualified person may be employed, at the expense of the owner or agent, to assist Port Taranaki Ltd in deciding what action is to be taken in regard to the goods.

A gangway should be made ready as soon as possible after berthing to avoid delays to port officials and surveyors. The gangway must have a safety net rigged and must be adequately lit. It is the Masters responsibility to ensure safe access at all times and that the safety precautions are in place even if using shore gangways. Safety precautions are to remain in place until all shore personnel have departed prior to vessel sailing.

Lifeboats can be tested at Port Taranaki with prior approval from the Operations Manager or Marine Services Manager. For tankers, lifeboats can only be tested when no cargo transfer operations are taking place at the tanker berths.

Engine de-mobilisation may only be undertaken with the consent of the Harbourmaster. Tankers may not immobilise engines while transferring cargo.

6. PORT ALARM

Wailing Siren with red flashing light on top of cement silo at inshore end of Newton King Tanker Terminal. The alarm is tested weekly at 1130 hours Wednesday mornings.

Action : Cease Work, muster crew, open contact with Harbour Radio on VHF 12 for further instructions.

Ship Emergencies: Contact New Plymouth Harbour Radio on VHF 12.

7. SECURITY

It is the Master's responsibility to ensure the security of their vessel at all times.

Port Taranaki is compliant with ISPS and require all visiting vessels to be compliant also.

8. APPENDICES

- A Vessel Arrival Information Sheet (VAIS)**
- B Example Pilot/Master Interchange Passage Plan Check List**
- B1 Passage Plan Chartlet – Approaches to Port**
- B2 Passage Plan Chartlet – Harbour**
- C Recommended Anchorage Area**
- D Increase In Draft Due To Heel And Pitch**
- E Squat**
- F Ship Manoeuvrability**
- G Predominant Wind**

APPENDIX B1 – Example Passage Plan Check List

- Notes**
- This document forms the basis of the information that MUST be discussed with the vessel's master on each occasion that a pilot is to undertake a pilotage into or out of the Port, Taranaki.
 - A pilotage may not be considered unless both pilot and master have mutually agreed to the proposed plan.
 - Deviation from the accepted plan should be mutually agreed to, if time permits, prior to the deviation.
 - Once on the bridges, the pilot will discuss the pilotage plan with the Master and will then accept the conduct of the vessel.
 - If a tug is required, the vessel may not approach the harbour entrance until communications have been established with the tug and the tug is standing by near the entrance.
 - Upon entering the harbour the speed of the vessel should not exceed 6 knots, and may need to be less for larger vessels. This is to ensure that squat is kept to a minimum.
 - A heel of 5° is used. Deep draft vessels that are experiencing rolls in excess of 5° must transit using the DUKC system. Harbour Master must be informed if parameters are unsatisfactory or cannot be confirmed.
 - No moorings shall be slackened off until the Master & Pilot have agreed to a departure plan and have both signed this document.

ARRIVAL AND DEPARTURE	
Charts Available: Courses Laid Off	
Passage Plan / DUKC Discussed	
Pilot Card Signed by Pilot	
Handling Peculiarities: Transverse Thrust	
Draughts & Hydrostatic Data Confirmed	
Tug Usage Plan Discussed	
Emergency Procedures: Anchors ready	
Engines On Standby: Steering Gear	
Gyro Errors/Repeaters Aligned	
Speed Log/GPS confirmed/Radar On	
Other Nav. Equipment: VHF, Sat 12	
Tug Requirements Discussed	

ARRIVALS ONLY	
Pilot Ladder rigged for Rope Shed	
Berthing/Moorings Arrangements Discussed	
Manifold marked (Tankers Only)	
Port Emergency – Contact VHF 12	
DEPARTURES ONLY	
Pilot Ladder Riggered with man ropes	
Letting Go/Safety Procedures Discussed	
Pilot Boat in Attendance	
FOR SMALL VESSELS DEPARTURES	
Review Weather and Sea Conditions	

Secure vessel (as much as possible) prior to letting go	
Port anchor may be secured BUT not Slid	
Discuss possibility of securing vessel whilst in harbour (either "pinning" or within basin)	
Discuss the possibility of transiting entrance with crew ONLY the forecastle	
Discuss procedure of securing anchor when clear of entrance and sufficient sea-room	
Recommend that ships crew wear lifejackets	
Recommend that ship's crew to transit deck via flying bridge ONLY	

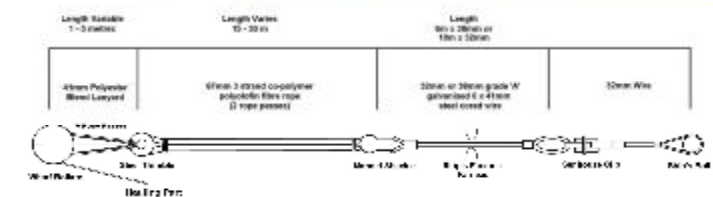
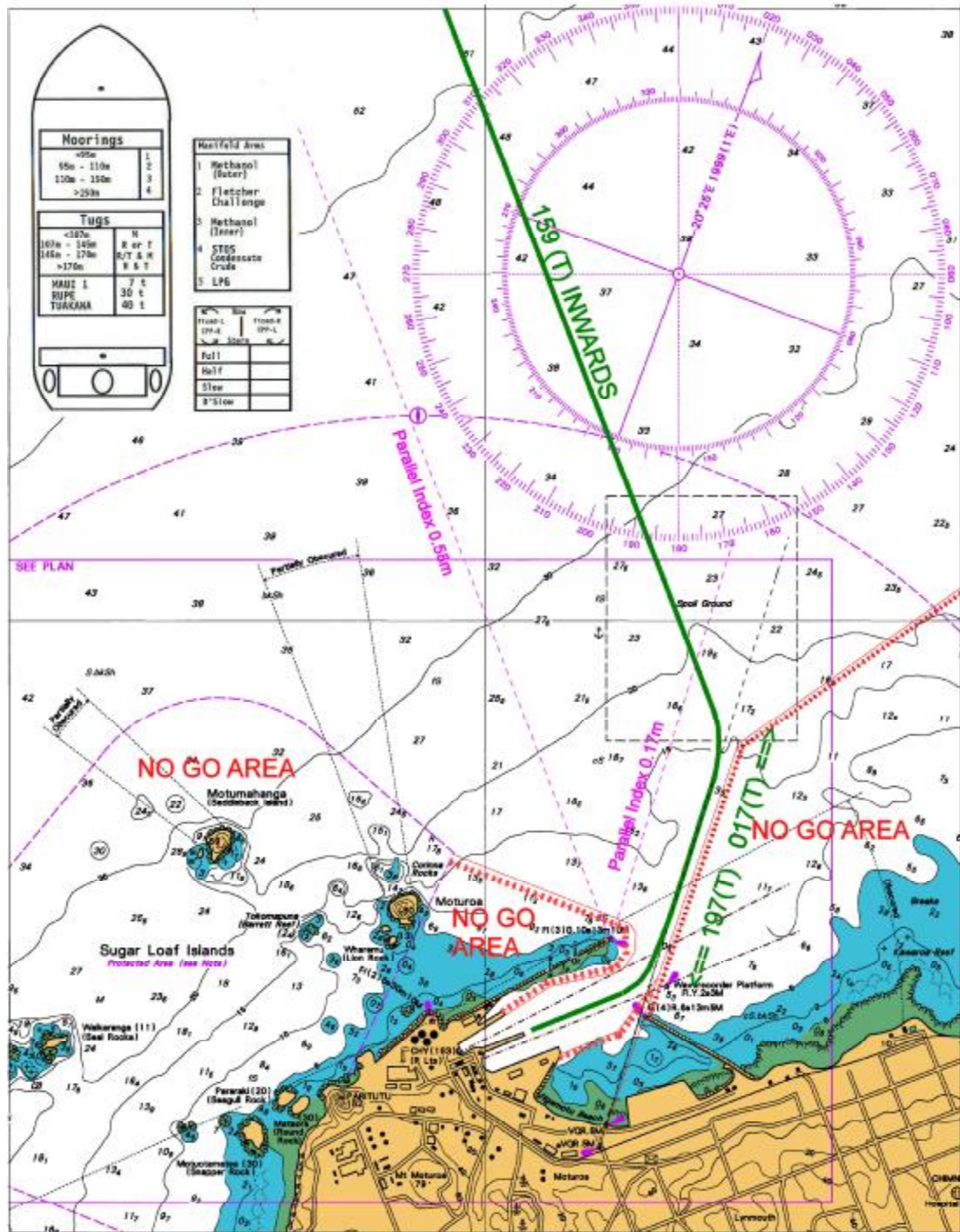
VESSEL	
Date / Time	
Draft Inwd / Aft	m <input type="checkbox"/> m <input type="checkbox"/>
Berth	P <input type="checkbox"/> S <input type="checkbox"/>
LOA/Beam	m <input type="checkbox"/> m <input type="checkbox"/>
GRT/NRT	LT <input type="checkbox"/> LT <input type="checkbox"/>
Registry	LT <input type="checkbox"/> LT <input type="checkbox"/>
Last Port	LT <input type="checkbox"/> LT <input type="checkbox"/>
Next Port	LT <input type="checkbox"/> LT <input type="checkbox"/>
Anchor Used	YES <input type="checkbox"/> NO <input type="checkbox"/>
Wind Dir / Spd	θ° <input type="checkbox"/>

UNDERKEEL CALCULATIONS	
Tide Time:	Hc
Tide Time:	Hc
Is transit under DUKC?	YES <input type="checkbox"/> NO <input type="checkbox"/>
SUKC calculation	
Transit Tide Height	m <input type="checkbox"/>
Channel CD Depth	+ 10.40 m + 10.40 m
Channel Transit Depth	- m <input type="checkbox"/>
Present Draft	- m <input type="checkbox"/>
Gross SUKC	- m <input type="checkbox"/>
Squat Allowance (knots)	- m <input type="checkbox"/>
Heel Allowance (5° roll)	- m <input type="checkbox"/>
Manoeuvring UKC	- m <input type="checkbox"/>
Gross UKC > 2.5m ?	YES <input type="checkbox"/> NO <input type="checkbox"/>
Manoeuvring UKC > 0.5m ?	YES <input type="checkbox"/> NO <input type="checkbox"/>
<i>If Gross UKC or Manoeuvring UKC is NO then – Vessel must NOT transit unless using DUKC</i>	

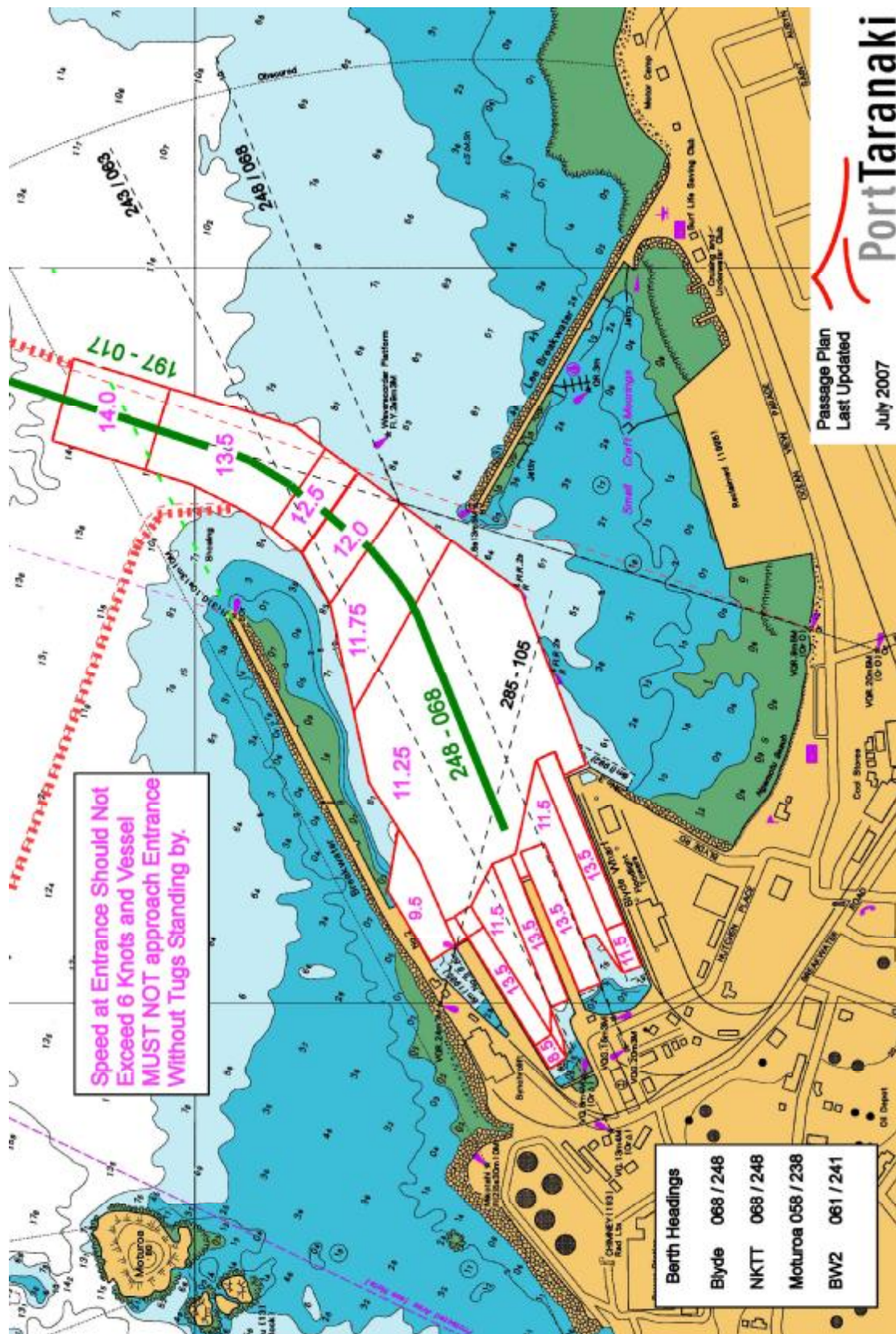
CHARGABLES INFORMATION	
Shore Gangway - Is required / Was used	
Garbage - To be landed / Was landed	
I'W - Required/Taken	int


Passage Plan Discussed & Agreed	
Master's Name	
Master's Signature	
Pilot's Signature	

APPENDIX B2 – PASSAGE PLAN CHART - APPROACHES



APPENDIX B3 – PASSAGE PLAN CHART - HARBOUR



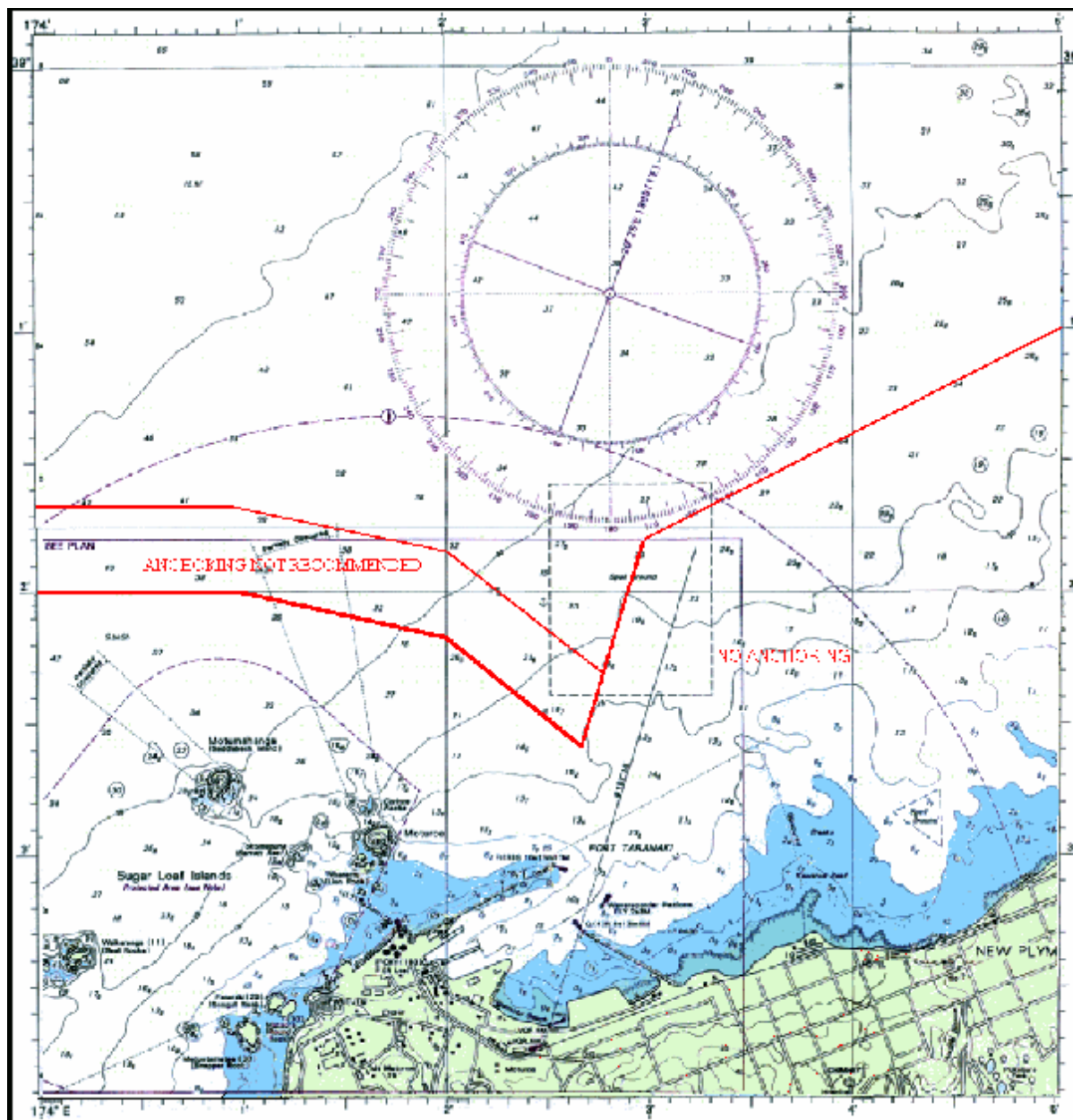


 Passage Plan

 Last Updated

 July 2007

APPENDIX C – RECOMMENDED ANCHORAGE AREA



APPENDIX D – INCREASE IN DRAFT DUE TO HEEL AND PITCH

HEEL

Heel is the increase in draft due to rolling. The following table calculates the increase in draft due to small amounts of heel.

INCREASE IN DRAFT DUE TO LIST										
DEGREE OF LIST (Beam / 2) x Sine@										
BEAM	1	2	3	4	5	6	7	8	9	10
10	0.09	0.17	0.26	0.35	0.44	0.52	0.61	0.70	0.78	0.87
15	0.13	0.26	0.39	0.52	0.65	0.78	0.91	1.04	1.17	1.30
20	0.17	0.35	0.52	0.70	0.87	1.05	1.22	1.39	1.56	1.74
25	0.22	0.44	0.65	0.87	1.09	1.31	1.52	1.74	1.96	2.17
26	0.23	0.45	0.68	0.91	1.13	1.36	1.58	1.81	2.03	2.26
27	0.24	0.47	0.71	0.94	1.18	1.41	1.65	1.88	2.11	2.34
28	0.24	0.49	0.73	0.98	1.22	1.46	1.71	1.95	2.19	2.43
29	0.25	0.51	0.76	1.01	1.26	1.52	1.77	2.02	2.27	2.52
30	0.26	0.52	0.79	1.05	1.31	1.57	1.83	2.09	2.35	2.60
31	0.27	0.54	0.81	1.08	1.35	1.62	1.89	2.16	2.42	2.69
32	0.28	0.56	0.84	1.12	1.39	1.67	1.95	2.23	2.50	2.78
33	0.29	0.58	0.86	1.15	1.44	1.72	2.01	2.30	2.58	2.87
34	0.30	0.59	0.89	1.19	1.48	1.78	2.07	2.37	2.66	2.95
35	0.31	0.61	0.92	1.22	1.53	1.83	2.13	2.44	2.74	3.04

PITCH

Pitch is the longitudinal effect on a vessel in a seaway and is calculated from the formula:-

INCREASE IN DRAFT DUE TO PITCH										
DEGREE OF PITCH (LBP / 2) x Sine@										
LBP	1	2	3	4	5	6	7	8	9	10
120	1.05	2.09	3.14	4.19	5.23	6.27	7.31	8.35	9.39	10.42
140	1.22	2.44	3.66	4.88	6.10	7.32	8.53	9.74	10.95	12.16
160	1.40	2.79	4.19	5.58	6.97	8.36	9.75	11.13	12.51	13.89
180	1.57	3.14	4.71	6.28	7.84	9.41	10.97	12.53	14.08	15.63
200	1.75	3.49	5.23	6.98	8.72	10.45	12.19	13.92	15.64	17.36
220	1.92	3.84	5.76	7.67	9.59	11.50	13.41	15.31	17.21	19.10

A rough estimate may be calculated from the approximation given by the Nautical Institute:-

$$\text{Increase in Draft Due to Heave and Pitch} = \text{Significant Wave Height} / 3$$

Heel Effect Due To Wind - Example Calculation

NAUTICAL INSTITUTE ON PILOTAGE AND SHIP HANDLING							
HEEL ANGLE DUE TO WIND							
Sine Heel = 0.19 X Lateral Exposed Area X V ² X 0.001 / (Displacement X GM)							
LOA	190.00						
MOULDED DEPTH	19.00						
DRAFT	10.00						
DECK CARGO LENGTH	80.00						
DECK CARGO HEIGHT	12.00						
SUPERSTRUCTURE HEIGHT	30.00						
SUPERSTRUCTURE LENGTH	50.00						
LATERAL AREA	4170.00						
DISPLACEMENT	31123	WIND SPEED (Knts)					
GM	0.90	15	20	25	30	35	40
HEEL >	0.71	1.26	1.97	2.84	3.86	5.05	

APPENDIX E - SQUAT

If ship's hydrostatic data is not available, then Barrass's formulas may be used and calculated for an open channel.

$$\text{SQUAT} = C_b \times V(\text{Squared}) \times K / 100$$

where C_b Block Coefficient
 V Velocity in Knots
 K Constant taken as 1 for open water and two for closed water)

C_b 0.55 Container Ships
 0.6 Passenger Liners
 0.7 General cargo
 0.8 Bulk Oil Carriers
 0.83 Supertankers

K 2

Speed	Container 0.55	Passenger 0.6	General 0.7	Bulk 0.8	Super 0.83
1	0.01	0.01	0.01	0.02	0.02
2	0.04	0.05	0.06	0.06	0.07
3	0.10	0.11	0.13	0.14	0.15
4	0.18	0.19	0.22	0.26	0.27
5	0.28	0.30	0.35	0.40	0.42
6	0.40	0.43	0.50	0.58	0.60
7	0.54	0.59	0.69	0.78	0.81
8	0.70	0.77	0.90	1.02	1.06
9	0.89	0.97	1.13	1.30	1.34

- the above diagram shows typical squat for selected class of vessels.

APPENDIX F - Ship Manoeuvrability

Standard bridge equipment includes vessel manoeuvrability information and diagrams. The data presented is based on data obtained under standard conditions which include normal sea speed, adequate water under the keel and set drafts all of which may not be pertinent for the manoeuvres required for Port Taranaki. However, the information may be used as a broad guide to the likely handling characteristics under harbour pilotage. A USCG rating system for non dimensional relative turning performance standards can be numerated, the values being the tactical diameter (turning circle) divided by the ship's length between perpendiculars (LBP) using the same units of length.

Vessel Rating

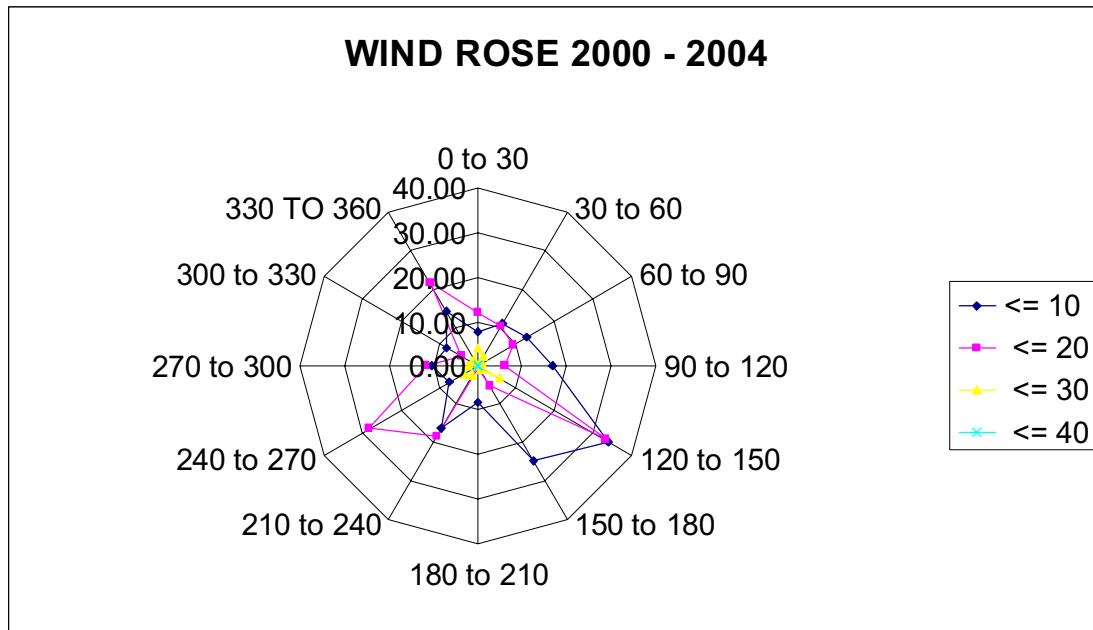
Rating	Non Dimensional Tactical Diameter
Superior	Below 2.1
Above Average	2.1 - 2.7
Average	2.7 - 3.6
Below Average	3.6-4.3
Marginal	Above 4.3

Example:

One vessel had a turning diameter of 844m with a LBP of 171.9m. The Non Dimensional Tactical Diameter calculates at $844 / 171.9 = 4.9$ indicating a very poor manoeuvrability expectation.

APPENDIX G – PREDOMINANT WIND

The predominant directions of the wind at Port Taranaki come from the South East and from the South West in equal frequency. The following chart displays an analysis of winds for the years 2000 through 2004 and shows the predominant directions and speeds.



The decision whether to berth vessels in significant winds will depend on a number of factors including, but not limited to the following:-

- Vessel Characteristics including stability, draft and trim
- Freeboard of vessel
- Manoeuvrability of vessel and availability of thrusters etc.
- Tug power available
- Type of cargo carried
- Port experience with particular vessel or class of vessel
- Direction of wind relative to Berth Alignment

The maximum mean wind speed allowable during daylight is 35 knots, but this may be varied at the pilot's discretion depending on circumstances.

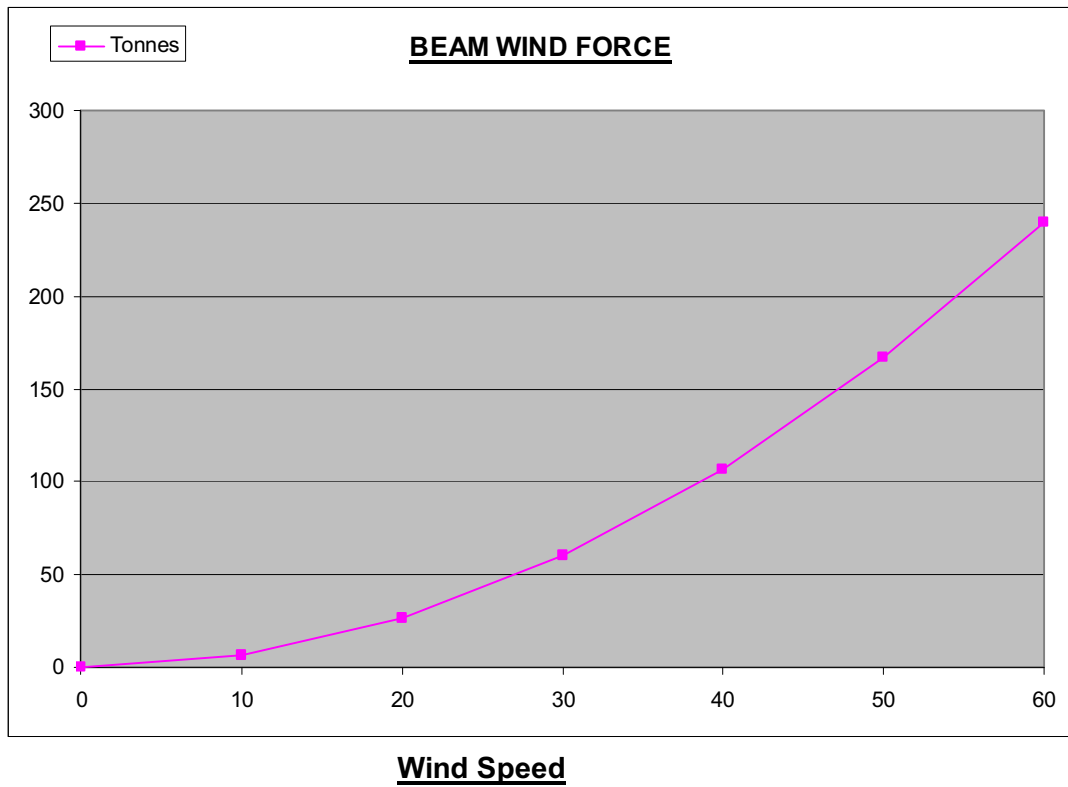
The maximum mean wind speed at night is 20 knots, but this may be varied at the pilot's discretion depending on circumstances.

In making the decision on whether to conduct a transit in high winds, the pilot will take into consideration the beam wind force exerted on the vessel at all stages of the manoeuvre and in particular berthing or unberthing in beam winds and the tug power available.

Beam wind forces may be approximated using the formula:-

$$\text{Beam Wind Force} = \frac{(\text{Wind Velocity m/sec}^2) \times 0.076 \times \text{Longitudinal Area}}{1000}$$

The graph below illustrates the beam wind force exerted on a typical bulk carrier of approximately 180m length:-



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