

## **Forth Ports Limited**

### **Marine Procedures, Guidelines and Information.**

**July 2019**

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
<b>Marine Procedures, Guidelines &amp; Information (Forth)</b>	May 2019	Revised By MO	Review Due August 2019

## **PRE –AMBLE**

This document contains procedures, guidelines and information for vessels operating on the River Forth and its Ports & Terminals within the jurisdiction. To determine the nature of the text it shall be labelled with a (P) – Procedure, (G) – Guideline or (I) – Information.

Any deviation from this document shall be conducted with the appropriate required consultation and with the permission of the Chief Harbourmaster or with his/her delegated authority.

Procedure (P) – a mandatory action to be conducted in a certain order or manner.

Guideline (G) – a general rule, principle or advise forming the basis of a sound decision.

Information (I) – informative material or facts.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## LIST OF AMENDMENTS

<b>Date</b>	<b>Amendment</b>	<b>Page No.</b>
17/04/18	Common User Oil Jetty (CUOJ) max' DWT vessel permitted	29
22/01/2019	Rosyth 'T' Berth removal of orange floating fender	48
31/01/2019	Grangemouth – Third crane added to procedure GC6 added to diagram	33 / 34
06/03/2019	2.6 Dragon Class Vessel Operation	29
	2.11 Grangemouth class guidelines – Dragon class sailing times	33
07/03/2019	1.1 Forth Bridges allowable clearance heights, addition of Queensferry crossing.	8
	1.5 Cruise liner tender operations at anchor, addition of Newhaven anchorage.	12
06/05/2019	Rosyth 'T' Berth removal of some quayside obstructions	50
13/05/2019	1.13 Bunkering Procedures River Forth	17
16/05/2019	Update to the timber operation location	55
01/07/2019	Burntisland berthing times	55
	Minimum bollard pull Leith	41

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## CONTENTS

### 1 RIVER FORTH

- 1.1 Forth Bridges Allowable Clearance Heights
- 1.2 Forth Rail Bridge South Arch
- 1.3 Use of Boatmen
- 1.4 Testing Engines Astern Before Berthing at any Port, Harbour, Dock or Terminal
- 1.5 Cruise Liners Tender Operations at Anchor
- 1.6 Vessels without Appropriate Navigational Charts
- 1.7 Hound Point Maximum Depth Draft
- 1.8 Navigating in Passage South of Oxcars Light
- 1.9 Emergency Use of an Anchor in Locks
- 1.10 Submerged Power and Data Cables
- 1.11 Abort Practice
- 1.12 Vessel Operator Restrictions
- 1.13 Bunkering Procedures
- 1.14 Vessel & Oil Rig Cold Lay-up Procedure

### 2 PORT OF GRANGEMOUTH

- 2.1 Docking and Sailing Guidelines and Voluntary Tug Code Introduction
- 2.2 Guidelines
  - 2.2.1 Towage for First Time Calls (non standard vessels)
  - 2.2.2 Lock Approach
- 2.3 Towage Minimum Bollard Pull Requirements
- 2.4 Wind Parameters
- 2.5 Visibility Parameters
- 2.6 Dragon Class Vessel Operation
- 2.7 Management Plan
- 2.8 Eastern Channel Jetties – Passing Distance
- 2.9 LW Slack Dockings
- 2.10 Common User Oil Jetty (CUOJ)
- 2.11 Floating Storage Unit/Daughter Vessel Operational Parameters
- 2.12 Grangemouth Vessel Class Guidelines
- 2.13 Docking and Undocking Procedures for Vessels at the Container Terminal Berth

### 3 PORT OF LEITH

- 3.1 Docking and Sailing Guidelines and Voluntary Tug Code Introduction
- 3.2 Guidelines
- 3.3 Towage Minimum Bollard Pull Requirements
- 3.4 Passenger Ship Guidelines
- 3.5 Wind Parameters
- 3.6 Visibility Parameter
- 3.7 Management Plan
- 3.8 Imperial Dock Movements

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## **4 PORT OF ROSYTH**

- 4.1 Docking and Sailing Guidelines and Voluntary Tug Code Introduction
- 4.2 Guidelines
- 4.3 Passenger Ship Guidelines
- 4.4 Towage Minimum Bollard Pull Requirements
- 4.5 Fender Information for “T” Berth
- 4.6 Wind Parameters
- 4.7 Visibility Parameters

## **5 PORTS OF METHIL, KIRKCALDY, BURNTISLAND, INVERKEITHING AND CROMBIE**

- 5.1 Methil
  - 5.1.1 Methil Energy Park
- 5.2 Kirkcaldy
- 5.3 Burntisland
- 5.4 Inverkeithing
- 5.5 Crombie
  - 5.5.1 Towage Minimum Bollard Pull Requirements - Crombie
- 5.6 Wind Parameters
- 5.7 Visibility Parameters

## **6 TOWAGE**

- 6.1 Tug Fleet
- 6.2 Towage Guidelines

## **7 PILOTAGE**

- 7.1 Pilot Vessel Operations in Restricted Visibility
- 7.2 Pilot Boat Operations – Submarines

## **8 BRAEFOOT & HOUND POINT**

- 8.1 Hound Point Terminal
- 8.2 Braefoot Bay

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## **APPLICATION**

These guidelines apply to all vessels over 45m in length unless otherwise stipulated. Vessels under 45m in length when operating on the Forth should operate and maintain an appropriate safety management system.

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC OP 14_20	<b>Authorised By</b> CHM	<b>Original Date</b> 19 Nov 2015
<b>Marine Procedures, Guidelines &amp; Information (Forth)</b>	<b>May 2019</b>	<b>Revised By</b> MO	<b>Review Due</b> August 2019

## GLOSSARY

<b>UKC</b>	<b>Under Keel Clearance</b>
<b>VTs</b>	<b>Vessel Traffic Service</b>
<b>FTNS</b>	<b>Forth and Tay Navigation Service</b>
<b>ETA</b>	<b>Estimated Time of Arrival</b>
<b>LOA</b>	<b>Length Overall</b>
<b>VHF</b>	<b>Very High Frequency Radio</b>
<b>ACD</b>	<b>Admiralty Chart Datum</b>
<b>HW</b>	<b>High Water</b>
<b>LW</b>	<b>Low Water</b>
<b>BT</b>	<b>British Telecom</b>
<b>PST</b>	<b>Port Side Too</b>
<b>SST</b>	<b>Starboard Side Too</b>
<b>J (2/3)</b>	<b>Jetty</b>
<b>BP</b>	<b>Bollard Pull</b>
<b>LPG</b>	<b>Liquid Petroleum Gas</b>
<b>DWT</b>	<b>Deadweight</b>
<b>PEC</b>	<b>Pilot Exemption Certificate</b>
<b>GC</b>	<b>Gantry Crane</b>
<b>FL</b>	<b>Flash</b>
<b>G</b>	<b>Green</b>
<b>O</b>	<b>Occulting</b>
<b>IPOS</b>	<b>Integrated Port Operating System</b>
<b>FCBC</b>	<b>Forth Crossing Bridge Constructors</b>
<b>LAT</b>	<b>Lowest Astronomical Tide</b>
<b>ASD</b>	<b>Azimuth Stern Drive</b>

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC OP 14_20	<b>Authorised By</b> CHM	<b>Original Date</b> 19 Nov 2015
<b>Marine Procedures, Guidelines &amp; Information</b> <b>(Forth)</b>	<b>May 2019</b>	<b>Revised By</b> MO	<b>Review Due</b> August 2019

## RIVER FORTH

### 1.1 Forth Rail and Road Bridges Allowable Clearance Heights (P)

The transit of the bridges by vessels with restricted aircrafts will be reported to the respective bridge authorities. A `restricted aircraft` vessel means any vessel with an aircraft, which may prevent her from transiting the bridges at any state of the tide.

The cruise liner programme will be forwarded to the respective bridge authorities at the start of the season.

#### **Forth Rail Bridge**

Height of Bridge above Chart Datum	52.06 m
Deflection due to Live Load	0.15 m
Net Height above Chart Datum	51.91 m
Clearance Margin	2.00 m
Allowable Height above Chart Datum	49.91 m

**Gantry Position** - The clearance height is with painting and maintenance platform removed, which is the normal situation. If the platform is in place, allowable height above Chart Datum will be reduced by a further 1.3m.

#### **Forth Road Bridge**

Height of Bridge above Chart Datum	55.26 m
Deflection due to Live Load	3.16 m
Net Height of Bridge above Chart Datum	52.10 m
Clearance Margin	2.00 m
Allowable Height above Chart Datum	50.10 m
Curvature to red and green light	0.9 m

Normal Allowable Height above Chart Datum	49.20 m
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**Gantry Position** - The clearance height is with painting and maintenance platform removed, which is the normal situation. If the platform is in place, allowable height above Chart Datum will be reduced by a further 2.7 m.

The calculation for aircrafts takes into account the red and green light reduction at the road bridge of 0.9 m in the first instance. A further assessment will be made in the case of any vessel, which is otherwise able to make the transit.

#### **Queensferry Crossing**

Allowable height above Chart Datum	50.8 m
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Please note the above heights include allowances for maintenance gantry and includes a safety clearance of no less than 2 m in both navigational envelopes (between green and red lights of both channels)

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## **.1.2 Forth Rail Bridge South Arch (P)**

The South Arch should only be used in exceptional circumstances.

Exceptional circumstances are out of the normal situations, which mitigate a potentially hazardous occurrence. Agreement must be sought from FTNS and the Pilot/Master of vessels concerned. VTS should advise local craft by means of a broadcast on channel 71 and the vessel wishing to undertake the passage must not exceed 100m. Should exceptional circumstances arise pilots will require being familiar with the route. In order to undertake familiarisation trips pilots should comply with the following:

- Before embarkation the pilot is to contact VTS to intimate his intentions.
- Vessel must not exceed 100m overall length.
- On embarkation pilot will discuss the intended route with the master and incorporate into the passage plan.
- Pilot will advise VTS that the passage plan has been discussed and agreed which includes passage through the South Arch.
- Information broadcast will be made on Channel 71 by VTS in order to advise local traffic of the intended route and an ETA.
- Vessel must not undertake the trip whilst:
  - A Hound Point vessel is manoeuvring onto or off the terminal.
  - A vessel is moored alongside at Hound Point 1
  - A vessel is anchored at the Hound Point Anchorage
- Attention is drawn to General Direction 8

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

### 1.3 Use of Boatmen (P)

#### Introduction

This procedure outlines the requirements for vessels with regards the use of licensed boatmen and the handling of ships moorings within the Ports owned and operated by Forth Ports Limited Ports. The berth / terminal operator of those facilities not operated by Forth ports should have their own procedures which should be adhered to.

#### Berthing and Unberthing Operations

Mooring and unmooring of vessels must be undertaken by trained and licensed mooring gangs. It is not permitted for ship's crew to embark or disembark the vessel without appropriate gangway being rigged and therefore crew are not permitted to catch or release mooring lines from the quay.

The practice of putting mooring lines out on a bight in order that they can be slipped is also not permitted.

#### Shifting Operations

Vessels should ensure that the latest edition of the Pilotage Direction is consulted and adhered to when shifting.

Vessels requiring compulsory pilotage must ensure that a pilot is utilised if letting all ropes go to facilitate shifting.

If the vessel requires shifting more than a ships length licensed boatmen are required.

If a ship is moving less than a ships length and utilising the vessel crew to handle moorings the following criteria must be adhered to;

- Permission from berth operator (FTNS / Console Control / Port Assistant / Ops)
- Vessel must confirm on that it has appropriate risk assessments and procedures in place to safely carry out the operation, including safe manning requirements. RA's and procedures must be available on the vessel for Port Authority to view if required.
- All crew landed ashore must do so using a safe means of access and adhere to Port H&S requirements (i.e. Lifejackets and PPE)
- Wind Speed  $\leq 15$  kts
- On commencement and completion of the operation the vessel must inform the CC/FTNS/Port Assistant on the appropriate VHF channel.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## **1.4 Testing Engines Astern Before Berthing at any Port, Harbour, Dock or Terminal (P)**

All vessels should test their engines astern before entering any lock system or berthing at any port, harbour, dock or terminal.

Any defects or failure of the engine to go astern should be reported to FTNS and the berthing/docking aborted.

### **Testing Engine and Bridge Controls**

Mariners are advised of the following precautions to be exercised prior to and when testing engines.

- Ensure gangway is tended and access prohibited during test or removed
- Cease cargo operations (tankers should disconnect and shore cranes boomed clear)
- Cease bunkering operations (disconnect)
- If necessary inform stevedores
- Test pitch at each console before engaging engines
- Ensure mooring lines are out and fast before engines are tested under load
- Tend mooring lines
- Consider proximity of other vessels and in particular small craft (tugs, mooring boats etc.)
- Ensure full understanding of the Emergency Stop procedure and be prepared to activate if any fault is discovered whilst testing.

## **1.5 Cruise Liners Tender Operations at Anchor**

Anchorage will be made available adjacent to Hound Point, for cruise vessels which due to their size cannot berth at Leith or Rosyth.

### **1.5.1 Hound Point**

- An anchorage will be made available adjacent to Hound Point, for cruise vessels which due to their size cannot berth at Leith or Rosyth.
- The position of the anchorage and any additional requirements for these vessels will be published annually in a Notice to Mariners Firth of Forth.
- Any vessel which cannot comply with the requirements of the Notice to Mariners should notify the Harbour Master prior to the vessels arrival and ideally prior to, or at the time of booking.
- A pilot will remain onboard throughout to ensure, when requested to do so by transiting traffic, that the vessel remains parallel to and clear of the main navigational channel. Additionally, the pilot will ensure that the cruise vessel remains two cables clear of No 19 Buoy at all times. VHF communication should

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

be maintained throughout both with FTNS and passing traffic.

- All vessels over 300m LOA will require one tug to be fast throughout. All other vessels require one tug fast aft, unless due to the manoeuvring characteristics of the vessel, favourable weather conditions and following an assessment by the Harbour Master the requirement for this tug is deemed unnecessary. The tug however, must remain in stand-by mode and be available for immediate deployment if required.
- FTNS will advise other river users of the cruise vessels location through VHF broadcasts as well as notification of periods when the cruise vessel may be swinging into the navigational channel. Transiting traffic will normally pass to the north of the anchored cruise vessel if it is safe and practical to do so and should approach no closer than 200 metres at any time.
- Passenger tenders operating from the cruise liner should be appropriately crewed by trained and experienced personnel. The cruise vessel should submit to the Harbourmaster its risk assessment and method statement/operational procedure document for these tenders at least four weeks prior to arrival. Tenders should not approach within 100 metres of Hound Point or vessels moored at Hound Point and all terminal regulations must be respected.

### **1.5.2 Newhaven Anchorage**

- The Lima anchorage will be made available, for cruise vessels which due to their size cannot berth at Leith or Rosyth.
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- The position of the anchorage and any additional requirements for these vessels will be published annually in a Notice to Mariners Firth of Forth.
- Any vessel which cannot comply with the requirements of the Notice to Mariners should notify the Harbour Master prior to the vessels arrival and ideally prior to, or at the time of booking.
- A pilot will remain on board throughout to ensure, when required that the vessel remains within the deep water of the anchorage and clear of passing traffic bound for Leith. VHF communication should be maintained throughout with FTNS, Leith Harbour and passing traffic.
- FTNS will advise other river users of the cruise vessels location through VHF broadcasts. Transiting traffic should agree safe passage with the anchored vessel and keep FTNS apprised of intentions.
- Passenger tenders operating from the cruise liner should be appropriately crewed by trained and experienced personnel. The cruise vessel should submit to the Harbourmaster its risk assessment and method statement/operational procedure document for these tenders at least four weeks prior to arrival.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## 1.6 Vessels without Appropriate Navigational Charts (P)

For a vessel to comply with the General Directions it is mandatory that vessels should have the appropriate charts before commencing the river passage.

Pilots boarding vessels which do not have the appropriate charts should, for inbound vessels, put the vessel to the nearest and most appropriate anchorage and for sailing vessels not leave the berth.

Electronic Charts must be approved and have a back up (either a second approved electronic system or charts).

Foreign charts are acceptable if they conform to the international numbering system. Russian charts do not conform to the above standard but are recognised by the Hydrographic Office.

## 1.7 Hound Point Maximum Departure Draft (P)

A vessel on departure from Hound Point Marine Terminal must pass over the 18.4m (below ACD) patch north of the Terminal and the bar NE of Inchkeith Island (19.5m below ACD). The current respective UKC's are 2.1m and 2.5m. Leith tide tables are used in respect of calculations for the bar NE of Inchkeith and Rosyth tide tables for Hound Point Terminal.

The tanker must pass over the bar at a time of (HW Leith). This necessitates a departure from the Terminal of 2 hours earlier. Thus the most critical UKC is that when passing over the 18.4m patch north of the Terminal .

To determine the maximum permitted departure draft:

Look up terminal departure time which is (HW - 2) at Leith.

Calculate the height of tide at Rosyth for this time.

Ruling depth = 18.4m below ACD

Underkeel clearance = 2.1m

Maximum Permitted draft = (Height of tide Rosyth + Ruling Depth) - UKC

Quick Reference Table

Item	Value
Ruling Depth	18.4m
Height of Tide Rosyth (At HW Leith – 2hrs)	
Less Underkeel Clearance	-2.1m
<b>Maximum Permitted Draft</b>	

Vessels of Maximum draft should have a departure time no later than 2 hours before High Water at Leith in order to be at No 1 Buoy at High Water (Leith).

**N.B.** Departure time is the time of last rope gone and is regarded as occurring 30

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

minutes after Pilot On Board Time.

## **1.8 Navigating in Passage South of Oxcars Light (P)**

The passage South of Oxcars light is not marked as a navigational channel.

This passage, except for dredgers going to the spoil ground, should only be used in exceptional circumstances.

Exceptional circumstances are out of the normal situations, which mitigate a potentially hazardous occurrence. Agreement must be sought from FTNS and the Pilot/Master of vessels concerned. VTS should advise local craft by means of a broadcast on Channel 71.

Should exceptional circumstances arise, pilots will require being familiar with the route. In order to undertake familiarisation trips pilots should comply with the following:

- Before embarkation, the pilot is to contact FTNS to intimate his intentions.
- On embarkation, the pilot will discuss the intended route with the Master and incorporate into the passage plan.
- Pilot will advise VTS that the passage plan has been discussed and agreed which includes passage south of Oxcars light.
- Information broadcast will be made on Channel 71 by VTS in order to advise local traffic of the intended route and an ETA.
- Attention is drawn to General Direction 10.

## **1.9 Emergency Use of an Anchor in Locks (P)**

The only time an anchor should be deployed in a lock or approaching the sill of a lock is in an emergency situation. Such an emergency is likely to be circumstances whereby the ship's engine has failed and there is an imminent danger of the vessel breaching the lock gates.

The dropping of an anchor in such emergency situations should only be used as an absolute last resort when all other options have failed.

Pilots and Masters should be aware that dropping an anchor in such circumstances however, is unlikely to have any significant effect as the base of the lock is made of reinforced concrete and there is no holding ground for an anchor to catch and arrest the forward motion of a ship, unless the anchor catches on the sill.

The sill is a raised concrete step on the lock floor which the gates close against,

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

forming a seal to prevent loss of water. If the lock sill was damaged the gate would not form a seal and significant water loss would occur. Repairs to the Outer or Inner Sill would result in the gates being removed and restricting ships to either the Inner or Outer chambers. Damage to the Middle Sill would restrict the lock to full chambers. The lock would be closed for periods to install and remove gates and to deploy a “Habitat”. A habitat is a caisson to enclose the sill in order to undertake repairs without draining the lock.

In conclusion - dropping an anchor in a lock must at all times be avoided and only considered in extreme situations as an absolute last resort. Pilots and Masters should in light of the above information ensure that vessels enter lock systems at an appropriate and controllable speed.

### 1.10 Submerged Power and Data Cables (I)

The table below details the locations of submerged power and data cables in docks and at berths on the Forth. These are in addition to the main cables running across the Forth which are marked on the Admiralty charts.

To avoid fouling and damaging these cables the use of anchors in these areas should be avoided unless in emergency situations. In such situations this should only be used as an absolute last resort when all other options have failed.

Port	Location	Description
Leith	Albert Passage	Main Forth Ports Data Cable Electrical Cable BT Lines x 2
Leith	Under Edinburgh Bridge	BT Lines
Methil	Entrance to No.1 Dock	Electrical Power Cables
Burntisland	Entrance to East Dock	Power and Control Cables
Burntisland	Entrance to Outer Harbour	Power Cables
Burntisland	Approaches to West Dock	Power Cable
Grangemouth	No.2 Bridge, Carron Dock	Cables in Conduits
Grangemouth	West Bridge Cut, Carron Dock	Cables in Conduits

### 1.11 Abort Practice (P)

The criteria set out within this document have been agreed following risk assessment and consultation with the appropriate parties. There may however be occasions when masters or pilots have concerns over the prevailing conditions. They may therefore consider that it would be prudent to abort the operation before the limits in these Guidelines are reached. These decisions can only be made at the time by the master and pilot after assessing the situation and the circumstances of any particular case. Masters and pilots are reminded that discussion and agreement of an appropriate abort position is an integral part of every passage plan.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## **1.12 Vessel Operator Restrictions (P)**

Vessels are scheduled into / out of ports on the Forth & Tay in accordance with the under keel clearance and scheduling criteria specified in this document.

Vessel operators who require additional restrictions such as increased under keel clearance margins, over and above those required by the port, must ensure that these requirements are specified to FTNS at the time of booking the vessel's arrival / departure. This is to ensure that vessels are booked for the correct time, and to ensure that unnecessary delays / impacts to the shipping schedule are avoided.

Agents are advised to ascertain vessel specific scheduling requirements prior to making arrival / departure bookings through FTNS.

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC OP 14_20	<b>Authorised By</b> CHM	<b>Original Date</b> 19 Nov 2015
<b>Marine Procedures, Guidelines &amp; Information</b> <b>(Forth)</b>	<b>May 2019</b>	<b>Revised By</b> MO	<b>Review Due</b> August 2019

### 1.13 Bunkering Procedures River Forth (P)

During all Bunkering operations all vessels must provide a minimum of 30m clearance when passing a bunkering operation. Consideration may be given to a reduced clearance with the Harbour Masters Approval.

#### **General**

These procedures apply to any vessel bunkering operations taking place at ports, terminals, harbours and estuarial waters within the limits of Forth Ports and the Port of Dundee's jurisdiction.

Bunkering is taken to mean the transfer of liquid hydrocarbons, intended for the main propulsion and/or operation of the auxiliary equipment of a vessel and/or for lubricating of the vessel's engine or other machinery or the discharge of bilge residues and other types of oily waste exceeding 1,000 litres.

These procedures **do not** apply to vessels less than 50gt or vessels which normally navigate solely within the port; provided they have appropriate procedures in place to prevent spillage, to clean up any spillage which may occur and ensure any spillages are reported.

These procedures **do not** apply for the transfer of liquid hydrocarbon between two vessels where the product being transferred is deemed as cargo. Such transfers require an oil transfer licence as per the Merchant Shipping (Ship to Ship Transfer) Regulations 2010/1228 as amended by the Merchant Shipping (Ship to Ship Transfer) Regulations 2012/742.

**Master of mother-vessel has overall responsibility and accountability for the safe conduct of operations while a ship is receiving bunkers.**

Before the bunkering operation commences, the Responsible Officers must:

- Read and understand the bunkering procedures and precautions carefully.
- Send the completed Vessel Bunkering Checklist (Appendix A) to FTNS for approval and confirmation minimum 24 hours prior to bunkering commencing.  
*Note: When bunkering from another vessel, Appendix A must be completed and approved for both vessels individually.*
- On completion of bunkering the relevant details contained in the Checklist (Appendix B) should be forwarded to FTNS.  
*Note: When bunkering from another vessel, Appendix B must be completed and submitted for both vessels individually.*

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## **Notification**

The Master/ Manager of a vessel of more than 50gt (other than one which normally navigates solely within the Port) intending to receive bunkers or discharge oily waste, whether alongside on a tidal berth or enclosed in a dock system or lying at anchor in Rivers Forth or Tay shall give notification in writing to and seek permission from the relevant Harbour Master, through Forth and Tay Navigation Service (FTNS) not less than 24 hours in advance of the intention to bunker. In exceptional circumstances less than 24 hours' notice will be accepted at the Harbour Masters discretion.

Note – Permission to bunker will not be given until all the criteria in the checklist is approved by FTNS and confirmation sent in writing.

The Master of the vessel receiving the bunkers must advise the relevant person as detailed in Section 9 at the time of commencement of bunkering and on completion of the bunkering operation.

Vessels berthed at the INEOS Jetties within Grangemouth docks requiring to take bunkers are required to comply with these procedures but are exempt from needing to complete Appendix A and B.

## **Precautions for ALL Bunkering Operations**

Bunkers should not begin until all parties are assured that the following precautions have been taken;

- a) Scuppers are firmly closed
- b) Vessel is securely moored and moorings tended
- c) Any special instructions issued by Forth Ports Ltd have been complied with
- d) Bunker pipes which are not in use are effectively blanked
- e) Bunker hoses have sufficient play and are adequately supported
- f) Bunker hose connections have been provided with a good seal \*
- g) There is a well-tightened bolt in every hole in the bunker hose connection flange \*
- h) There is a sufficiently large overflow container under the bunker hose connection(s)
- i) Cargo handling or other operations in progress will not hazard the bunker operation, or vice versa.
- j) There is an agreed communication system established between the vessel receiving the bunkers and the bunkering barge/ tanker/ road tanker/ terminal.
- k) There is an agreed communication system established between the visual watch personnel on deck and the engineering staff responsible for loading the bunkers.
- l) A nominated Officer(s) should be in charge throughout the bunkering operation.
- m) It is essential that a visual watch be maintained on the side of the vessel away from the point of supply.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

\* Where a pistol grip delivery system is used, conditions f) & g) will be considered to have been met if a properly maintained nozzle is used, which conforms to BS71 17 or equivalent.

### **Additional Precautions for Bunkering Out With Enclosed Docks**

In addition to the precautions stipulated in paragraph 3 the following conditions apply;

- a) Operations are restricted to daylight (until civil twilight) hours
- b) Wind strength to be less than 20 knots sustained
- c) Visibility to be in excess of 0.5 nautical miles
- d) Standby pollution response vessel with appropriate oil spill response equipment
- e) Bunkering location requires prior approval from the Harbour Master

### **Additional Precautions for Bunkering from Another Vessel (ALL Locations)**

In addition to the precautions stipulated in paragraphs 3 & 4 if bunkers are being taken from another vessel the follow additional conditions apply;

- a) Appropriate fenders are required
- b) A vessel mooring/unmooring procedure and appropriate risk assessment, including requirement for tugs to be agreed by the Harbour Master
- c) Bunker barge/vessel chartered using Intertanko's Standard Tanker Chartering Questionnaire
- d) In certain circumstances the Harbourmaster may require a tug on stand-by during bunkering operations.
- e) **Pilot required on board for mooring /un-mooring of vessel, if at anchor pilot required on-board as standby throughout operation.**

### **Additional Precautions for Intermediate and Heavy Fuel Oil (All Locations)**

In addition to the precautions stipulated in paragraph 3, 4 & 5 the follow conditions apply;

- a) Appropriate oil containment booms available at the location of sufficient length to enclose the bunkering operation. Pre-prepared plan for rigging and securing of booms.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## **Suspension of Operations**

If the requirements laid down in these procedures cannot be fulfilled during the operation, bunkering operations are to be suspended immediately and FTNS advised accordingly, together with the reasons for such action.

Bunkering operations can only resume once all criteria of this notice have been met, confirmation that criteria has been met is provided to FTNS and permission is given by FTNS to resume.

## **Oil Spills**

At any time during operations the Master must report any spillage (even if no oil has entered the water) to the Harbourmaster through the Forth and Tay Navigation Service immediately.

The Master of any vessel involved in bunkering operations must provide a written report to the relevant Harbourmaster/ Forth and Tay Navigation Service at the earliest opportunity, as required by Statute. Failure to do so may result in the vessel's sailing being delayed.

Information to report must include:

- a. The nature and type of the liquid released
- b. The quantity of the liquid released
- c. Quantity of liquid in to the water, and on land,
- d. Name and contact details of persons involved

**Any costs involved in any subsequent oil clean-up will be to that of the vessel receiving the bunkers.**

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

### **Contact Details**

Forth & Tay Navigation Service (FTNS)

Phone – 01324 498584

Fax – 01324 668480

E-Mail – [ftns@forthports.co.uk](mailto:ftns@forthports.co.uk)

Within the Ports below communications on commencement and completion of bunkers should be with;

**Leith -** Leith Harbour Radio  
Phone – 0131 555 8900  
VHF – 12

**Grangemouth -** Grangemouth Locks  
Phone – 01324 498584  
VHF – 14

**Dundee -** Dundee Harbour  
Phone - 01324 498584  
VHF – 12

**All Other Ports -** Forth & Tay Navigation  
Phone – 01324 498584  
VHF – 71

#### **1.14 Requirements for Vessels & Rigs to Cold Lay-up in the Firth of Forth & Ports Contained Therein (P)**

**A cold lay-up means shutting down a vessel or rig with the intention of leaving it unmanned for a specific period. The vessel will require to be monitored to ensure it is watertight, is safely moored and remains in good condition. Whilst it is unlikely the vessel will be requested to move, there may be a possibility for a variety of reasons. Should such a situation transpire the port would give notice of 7 days to move, which will be at the owner's expense.**

Owners / Managers are required to submit a detailed and comprehensive risk assessment specific to the vessel to be laid up which will include but not limited to the under noted points. The risk assessment is to be submitted to the Harbour Master (this does not transfer in any way responsibility for the vessel to the Harbour Master)

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

- Cold lay-up monitoring and security arrangements to be submitted including detail of:
  - Mooring equipment checks;
  - Security of vessel;
  - Bilge and water ingress checking;
  - Power and lighting arrangements in the event of an emergency.
- Sufficient firefighting equipment as specified by the Classification Society will be available on board the vessel at all times, and precautionary measures taken.
- The minimisation of fire risk through the removal of unnecessary flammable material, gas freeing and cleaning of certain compartments and by the employment of safe working practices.
- The following information to be supplied to the Harbour Office prior to the vessel being unattended:
  - 24 hour emergency contact information
  - Stability information;
  - Location, quantity and type of fuel and other bulk liquids;
  - Fire Plan;
- General Arrangement Plan;
- Locations of compartments containing large quantities of hazardous substances;
- Contact details of persons required for operational situations.
- Any vessel left unattended must have sea cocks closed and sealed.
- Provision of suitable alarm systems with remote monitoring.
- Power and lighting arrangements in the event of an emergency
- Strict adherence to all regulations including Port Premises Byelaws.

See - <https://forthports.co.uk/marine/legislation/>

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC OP 14_20	<b>Authorised By</b> CHM	<b>Original Date</b> 19 Nov 2015
<b>Marine Procedures, Guidelines &amp; Information (Forth)</b>	<b>May 2019</b>	<b>Revised By</b> MO	<b>Review Due</b> August 2019

## 2 PORT OF GRANGEMOUTH (G)

### General

In the case of vessels transiting the Eastern Channel and vessels manoeuvring within the Grange or Carron Docks when:

- The mean wind exceeds the criteria given in Table 1 for vessels in excess of 175m or
- The wind is gusting to a speed at which a particular vessel would require a tug or additional tug

Consultation must take place between Pilot, Master and Duty Harbour Master.

After consideration of the following factors (but not limited to these):

- Wind direction and speed
- Vessel windage area
- Marine guidelines
- Forecast
- Berth alignment
- Berth occupation
- Tug availability
- Visibility
- Tidal conditions
- Manoeuvring Aids
- Vessel characteristics

All parties must agree if the operation is to proceed.

If, after consultation, the Duty Harbour Master is not satisfied that the vessel has sufficient towage, he will exercise his authority to issue a Special Direction to the Master to require a tug or additional tugs to be made fast before the vessel is given permission to move.

### Lock Transit (G)

Consultation should take place between Duty Harbour Master and Lock Foreman in advance of any lock movement, if mean wind speed is in excess of 35 knots.

Maximum mean wind speed for lock transit is 40 knots. (Measured at Grangemouth anemometer.)

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## 2.1 Docking and Sailing Guidelines and Voluntary Tug Code Introduction (G)

The following revised Guidelines have been drawn up for the port of Grangemouth.

The Guidelines form part of the formal risk assessment process and are continuously under review in the light of operational experience. There has been extensive consultation between the Port Authority and the Forth Pilots while producing these Guidelines.

It is not intended that these Guidelines are a rigid set of regulations or rules to be followed on all occasions, they are intended as guide to ships masters, agents, pilots and the Port Authority to allow safe and effective scheduling of vessels.

Further discussions on some occasions may be required between the Duty Pilot, Forth and Tay Navigation Service and the vessel's Master, taking into account the prevailing weather and tidal conditions and any other special circumstances.

The final decision on the number of tugs required rest with the Master of the vessel, in consultation with the pilot.

However the Port Authority reserves the right to require a vessel to take a tug or comply with any special instruction which may be considered necessary according to the particular circumstances of the case.

The following assumptions have been made in preparing these guidelines:

- Standard Ship – single screw with no bow/stern thrusters, high efficiency rudder or other manoeuvring aids.
- Favourable weather conditions.
- Tidal Ranges within predicted limits.
- No adverse local activity and/or conditions.

Non-standard vessel will be assessed on an individual basis.

The Guidelines are presented in a tabular form, the tables contain an identification letter indicating tidal constraints followed by a numerical indication of the number of tugs recommended.

For ports with lock entrances the Guidelines refers to the requirement to enter/leave the locks. Further consideration to tug requirement may need to be given depending on berth location, side to, proximity of other berthed vessels and the table in 6.2.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## 2.2 Guidelines (G)

*The information detailed below refers to STANDARD SHIPS, which are single screw with no Bowthrust. Standard meteorological conditions of maximum wind gusts not exceeding 15 knots and good visibility also apply.*

**U** Unrestricted    **F** Not during ebb    **A** HW Slack only    **B** HW or LW slack  
Numerical indicates tug numbers

**These guidelines should be regarded purely as a starting point for discussions with the Port Authority, Duty Pilot, Master and Agent on tug allocation and scheduling. Actual tug allocation may be increased or reduced as appropriate. The guidelines should not be construed as any form of regulations.**

Draft (m)	Length overall in metres							
	<100		100 – 120		120-145		145-165	>165
	Spring	Neap	Spring	Neap	Spring	Neap		
<b>Docking</b>								
<6	U0	U0	B0*	B0*/ U1	B1*	B1*/F2	B2	B2
>6	B0/U0	U0	B1	B0*	B2	B1*	B2	B2
>7	A1	B0/U1	A1*	B1*	A2	A2	A2	A2
>8			A1*	A1*	A2	A2	A2	A2
>9			A2	A2	A2	A2	A2	A2
<b>Sailing</b>								
<6	U0	U0	F0*	U0*	F1*	F1*	F2	F2
>6	U0	U0	F1	U0*	F2	F2	F2	F2
>7	F0*	U0*	F1*	F1*	F2	F2	F2	F2
>8			F1*	F1*	F2	F2	F2	F2
>9			F1*	F1*	F2	F2	F2	F2

\* An additional tug may be required e.g. first arrival, vessel at upper end of length band, berth position or heading, and other vessels within the dock

### N.B.

**Vessels with LOA >150 m and PST on J2 & J3 depart berth no later than 2 hrs before HW. Lock-Max Tankers (eg Baltic class) on Departure should depart berth no later than 1¾ hrs before HW.**

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

- Tidal range: Spring  $\geq 4.0\text{m}$ , Neap  $< 4.0\text{m}$
- Scheduled times are: Inbound - Hen & Chickens, Departure – from berth
- Under Keel Clearance: 0.6m
- HW slack: Spring HW-2 to HW, Neap HW-3 to HW
- LW slack: HW-6
- Recommended Bollard Pull will be catered for in a separate document

Pilots should report to FTNS on vessel manoeuvrability after first visit for comment entry into IPOS.

### **2.2.1 Towage for First Time Calls (non-standard vessels) (P)**

Non standard ships (vessels with one or a combination of: bow/stern thruster; twin screw; Becker rudder etc) have to be considered on a case by case basis. First time callers will require an assessment in order to determine the vessel's manoeuvring characteristics (see 2.9 below). First time callers with an LOA of 100m and over will therefore be required to take at least one tug. For a sister ship of a vessel that has previously called the Duty Harbour Master and Duty Pilot should be consulted regarding towage. Vessels less than 100m will not normally be allocated a tug. Should Masters however, require towage, they are encouraged to be pro-active and request a tug in advance to avoid delays.

### **2.2.2 Lock Approach (P)**

- Pilots should ensure that they have made tugs fast in a timely manner at an appropriate location. Under normal circumstances, an inbound vessel will not plan to proceed past No 4 Buoy without its tugs in attendance.
- Ensure that the position and timing of outbound traffic is taken into account when using the Diversionary Channel or approaching the locks.
- Pilots should ensure that when entering the Diversionary Channel or approaching the lock entrance safe speed is maintained ensuring that the pilot has full control over the vessel.
- The allocation and position of tugs should be the pilot's decision based on the effective location to ensure maximum control and the highest safety.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## 2.3 Towage Minimum Bollard Pull Requirement (G)

The following table is a guide to the minimum combined bollard pull requirement for tug allocation in conjunction with the “Forth Ports Docking and Sailing Guidelines and Voluntary Tug Code”. As with the Code this table is a guideline and is not intended as a rigid set of rules and regulations.

The Port of Grangemouth is normally served by two licensed harbour tugs of 37t BP. The table is intended primarily to give guidance when other licensed harbour tugs of different capacities may be deployed to the port. This might be the case over a busy high water period or during dry docking of the harbour tugs normally based at the port.

When allocating two or more tugs to a job consideration must be given to the mix of tugs to ensure that there is an appropriate balance with the tugs employed.

	<b>1 Tug</b>	<b>2 Tugs</b>
<b>&lt; 100m</b>	19t	38t
<b>100m - 120m</b>	19t	38t
<b>120m – 145m</b>	19t	38t
<b>145m – 165m</b>	30t	45t
<b>145m -165m</b>	30t	45t
<b>&gt; 165m</b>	N/A	66t

## 2.4 Wind Parameters (G)

Table 1 shows the limiting mean wind speeds as indicated on the FTNS Grangemouth anemometer.

Wind Direction	Eastern Channel Vessels >175m Limiting Wind Speeds Docking (undocking)	LPG Berth Limiting Wind Speeds Docking (undocking)	All other Eastern Channel berths Limiting Wind Speeds Docking (undocking)	Eastern Channel Limiting Wind Speeds For Mandatory consultation Docking (undocking)
040 – 080	15 knots (25) knots	20 knots (30) knots	35 knots (35) knots	15 knots (25) knots
080 – 220	20 knots (20) knots	25 knots (25) knots	35 knots (35) knots	20 knots (20) knots
220 – 260	25 knots (25) knots	30 knots (30) knots	35 knots (35) knots	25 knots (25) knots
260 - 040	20 knots (20) knots	25 knots (25) knots	35 knots (35) knots	20 knots (20) knots

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## 2.4.1 Vessels In Excess of 175m LOA (G)

In order to minimize the number of occasions when an inbound ship in excess of 175m and 25m beam is brought up to the area of Crombie Jetty and subsequently has to return to the anchorage, early consideration should be given to cancelling the berthing prior to the pilot boarding. The berthing could therefore be cancelled if immediately prior to the boarding time the wind speed and direction are in excess of the criteria and the forecast indicates that this situation will remain or worsen during the period up to the Hen & Chickens time.

The decision regarding cancellation on departure of vessels in excess of 175m and 25m beam is to be made prior to the vessel leaving the berth. To minimize the number of occasions when tugs and pilot attend only to be cancelled the Duty Harbour Master should consult the parties involved to consider cancellation when the wind strength exceeds or is expected to exceed the given criteria and the forecast indicates that this situation will remain or worsen.

No vessels are to be scheduled for departure between the tugs for a >175m tanker leaving the lock and the completion of the docking. Other vessels may be scheduled to sail with the tugs.

These guidelines apply to all vessels calling at Grangemouth in excess of 175m and 25m beam. In addition laden tankers are to be positioned at the Entrance Lock on top of high waters in order to lessen any tidal effects.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

### 2.4.2 LPG Berth (P)

- Vessels for LPG berth with LOA >100m will be required to take 2 tugs if the wind exceeds a mean speed of 20 knots.
- All vessels of 92 m LOA or over are to have a minimum of one tug made fast for berthing and sailing (unless warping directly into the berth from the locks).
- The Harbour Manoeuvring Plan will take account of the specific nature of the LPG berth.
- The Berth Operator requires vessels calling at the LPG Berth to have an operational bow thruster. Exceptionally, vessels without a bow thruster may be considered on a case by case basis, in consultation with FTNS, Pilots and Berth Operator.
- Note different criteria for Locking and Docking.

Wind Direction	LPG Berth Limiting Wind Speeds Docking (undocking)	
010 – 050	20 knots	(30) knots
050 – 190	25 knots	(25) knots
190 – 230	30 knots	(30) knots
230 – 010	25 knots	(25) knots

## 2.5 Visibility Parameters (P)

Vessels are not permitted to enter the Port when the outer end of the East Lead in Jetty cannot be seen from the Harbour Office.

Vessels are not permitted to leave the lock, berth or jetty in the Dock when No.2 Jetty cannot be seen from the Harbour Office.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## 2.6 Dragon Class Vessel Operation

### Pilotage

Inbound pilot should board 2 hours 15 minutes before Hen & Chicks time.

### Scheduling

- Hen and Chicken time should be HW- 1 Hour 15 Minutes
- Last booking for an outbound sailing (using tugs) before Dragon-class vessel should be 1 hours 30 minutes before Dragon-class vessel Hen & Chicks time.
- Vessel should berth SST unless previously agreed with the terminal and Duty AHM, or due to safety concerns i.e. meteorological conditions or mechanical issues.
- For the vessel to berth SST at J2 or to depart the berth from PST, E2 must be clear.
- No vessels are to be scheduled for departure between the tugs for a >175m tanker leaving the lock and the completion of the docking. Other vessels may be scheduled to sail with the tugs.
- The Duty AHM should have a conversation with the duty pilot / pilot prior to boarding in order to review the weather forecast if conditions are marginal.
- The departure times indicated are those at which the vessel must be ready to depart from the lock. An appropriate time interval must be allowed to cover transit from berth to lock and running down in lock. The appropriate time should be predetermined via conversation between the AHM and Duty Pilot.

### Towage

- Vessels will use 2 tugs on all occasions (inbound and outbound) –Tugs must be of prior approval by Port Authority.
- On arrival, stern tug will meet the vessel in the vicinity of Crombie Jetty, and the bow tug before the Hen & Chicks.
- If weather is marginal, bow tug will meet the vessel at Crombie.
- Forward tug will remain on the bridle for the entire manoeuvre (either with the legs separated for lock entry or together through the nose of the vessel for arrival swing).

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## 2.7 Management Plan (P)

The following should be confirmed before manoeuvring in the Port of Grangemouth.

- That a harbour manoeuvre plan has been prepared and agreed (where appropriate) with the pilot.
- That any defects, which may affect the safe navigation or manoeuvrability of the vessel, are reported.
- The maximum draft.

The following procedures should be adopted.

### Inbound

On transferring from Channel 71 to Channel 14 to communicate with Grangemouth, please pass the following information:

- A harbour manoeuvre plan from the Hen & Chickens to the berth has been agreed.
- The maximum draft.

### Outbound

On seeking permission to depart from the berth please pass the following information:

- A harbour manoeuvre plan has been agreed from the berth to the Hen & Chickens.
- Any defects.
- Maximum draft.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## 2.8 Eastern Channel Jetties – Passing Distance (G)

In planning a vessel movement which involves proceeding past another vessel moored at a jetty in the Eastern Channel, the pilot and/or Master (PEC Holder) should provide for as great a separation distance as reasonable under the prevailing circumstances.

However, in any event, such a separation should be a distance of not less than the beam of the passing vessel.

If it should appear during the planning of the pilotage movement that the maintenance of such a separation distance is impossible, the pilot and/or Master (PEC holder) should consult with the Harbour Master regarding berthing plans.

## 2.9 LW Slack Dockings (P)

When calculating the max. Acceptable draught for a LW slack docking, the predicted tide height at actual LW is to be used.

## 2.10 Common User Oil Jetty (CUOJ) (G)

The CUOJ is located in the Eastern Channel. The maximum vessel length for the Jetty is 180m. Wind and towage requirements will be in accordance with the parameters as laid down elsewhere within these guidelines.

The maximum size of a loaded tanker permitted is 18000 DWT.  
Larger vessels in ballast will be considered on a case by case basis.

Large vessels will normally berth SST owing to the depths towards the East Cut.

Larger vessels requiring one or two tugs are to be positioned parallel to the berth on a heading of either 210° or 030° and be manoeuvred so as to land squarely on all fenders, with an approach speed not exceeding the maximum velocity detailed in the table below.

Deadweight	Berthing velocity m/s
10000	0.21
15000	0.17
18000	0.15

### Mooring Requirements

The use of mooring lines of dissimilar materials in parallel duty is prohibited. The minimum number of mooring lines to be used at each end of the vessel is as follows:

Up to 4000 DWT	4
4000 - 10000 DWT	5
Over 10000 DWT	6

In the event of adverse weather additional moorings may be required.

The bollards at the Common User Oil Jetty have a capacity of not less than 50 tons.

### Emergency Towing off Pennants (ETOPS/Fire Wires) - Not compulsory

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## 2.11 Floating Storage Unit/Daughter Vessel Operational Parameters (P)

Detailed below are the operational parameters for vessels docking and undocking in the Eastern Channel whilst the Floating Storage Unit (FSU) is berthed at E1.

- FTNS, Pilot and Person in Overall Advisory Control (POAC) to confirm FSU is ready to receive Daughter vessel before Daughter vessel departs lock.
- Wind and visibility as per the Marine Guidelines
- Daughter Vessel - All dockings will be Port Side Too
- Towage for Daughter Vessel:
- On arrival will be normal towage for that vessel plus one tug, up to a maximum of two tugs:
  - Normally 0 tugs – Tug to meet inside dock
  - Normally 1 tug – First tug meet at H&C's and second to meet inside the dock
  - Normally 2 tugs – 2 tugs to meet at H&C's
- On departure normal towage plus one tug.

Berth	Other Eastern Channel Berths	Docking	Undocking
<b>E1 - Daughter Vessel</b>	Vessel on E2	>150m - E2 to be clear	>150m - E2 to be clear
<b>1N</b>	Vessels on J2, E2 and Daughter vessel simultaneously	SST - No restriction PST - <150m*	PST – No restriction SST - >150m no sail unless one berth clear*
<b>J3</b>	Vessels on J2, E2 and Daughter vessel simultaneously	PST – No restriction SST - >150m one berth to be clear	SST – No restriction PST – >150m no sail unless one berth clear*
<b>J2</b>		No restrictions	No restrictions
<b>E2</b>		No restrictions	No restrictions
<b>LPG</b>		No restrictions	No restrictions
<b>J4</b>		No restrictions	No restrictions
<b>TRANSIT</b>		No restrictions	No restrictions
* Vessel may swing in Grange Dock with the following provisions: <ul style="list-style-type: none"> <li>• Draft <math>\leq 7.7</math>m and not a selected vessel</li> <li>• Agreed in advance with Operations</li> <li>• If necessary container gantry booms to be raised East of 13 bollard.</li> </ul>			

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## 2.12 Grangemouth Vessel Class Guidelines (G)

Pilots will report to FTNS on vessel manoeuvrability after the first visit with a recommendation that a vessel is allocated a class according to the following table.

This will be added to the vessel's data in IPOS together with any tug requirements and date of notation.

E.g. "dd/mm/yyyy Class D One tug in; sail without"

- The departure times indicated are those at which the vessel must be ready to depart from the lock. An appropriate time interval must be allowed to cover transit from berth to lock and running down in lock. In many cases this will be 45m but more may be required depending on the vessel's manoeuvrability and position within the port e.g.

○ <b>Class D vessel SST on J2</b> Sailing window closes HW-30m	<b>required interval 45 mins</b> latest off berth <b>HW -1hr 15m</b>
○ <b>Baltic Tanker on E1</b> Sailing window closes HW-45m	<b>required interval 1 hour</b> latest off berth <b>HW -1 hr 45m</b>
○ <b>Class E tanker PST on J2 or J3</b> Sailing window closes HW-45m	<b>required interval 1hr 15m</b> latest off berth <b>HW -2 hr</b>
○ <b>Class F Containership</b> Sailing window closes HW-45m	<b>required interval 1hr 15m</b> latest off berth <b>HW -2 hr</b>
○ <b>Dragon Class SST</b> Sailing window closes HW-45m	<b>required interval 1hr 15m</b> latest off berth <b>HW -2 hrs</b>
○ <b>Dragon Class PST</b> Sailing window closes HW-45m	<b>required interval 1hr 45m</b> latest off berth <b>HW-2 hrs 30m</b>

- Calculate times to the nearest High Water
- The Neap / Spring Interface is 4.0m with the exception of 'Class B' where it is 4.5m

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## Vessel Class Guidelines

### Class A - Unrestricted

Springs	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Arr															
Dep															

Neaps	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Arr															
Dep															

### Class B – Guide 112m circa 4500DWT

Springs	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Arr															
Dep															

Neaps	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Arr															
Dep															

### Class C – Guide 120m circa 7000DWT

Springs	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Arr															
Dep															

Neaps	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Arr															
Dep															

### Class D – Guide 120m to 145m

Springs	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Arr														
Dep														

Neaps	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Arr															
Dep															

### Class E – Guide 145m to 160m Example 16,000 DWT Product tankers

Springs	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Arr														
Dep														

Low water slack – max draft 7.0m

Neaps	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Arr															
Dep															

### Class F – Guide 160m to Lock Maximum

Springs	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Arr														
Dep														

Low water slack – max draft 7.0m

Optimum time HW – 1 ½ hrs

Neaps	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Arr															
Dep															

**FORTH PORTS LIMITED**

Marine Procedures, Guidelines & Information  
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## 2.13 Docking and Undocking Procedures for Vessels at the Container Terminal Berth (P)

In order to maintain the highest standard of safety when vessels are docking or undocking in the vicinity of the transporter cranes in the container terminal at Grangemouth Docks all parties are required to adhere to the following:

### *Gantry Crane Position*

	<b>West 5 - 11 Pole</b>	<b>Centre 11 - 15 Pole</b>	<b>East 15 - 21 Pole</b>
<b>1</b>	<b>Vessel Docking/Undocking</b> The boom of the transporter crane adjacent to the berth is to be lifted. No personnel to be on the crane.	<b>Vessel Working</b> Boom is to be lifted and crane traversed to the midships section of the vessel. No personnel are to be in or on any part of the crane.	<b>Vessel Alongside</b> Crane to be positioned to the East of 17 bollard.
<b>2</b>	<b>Vessel Docking/Undocking</b> The boom of the transporter crane adjacent to the berth is to be lifted. No personnel to be on the crane.	<b>No Vessel Alongside</b> Boom is to be lifted and no personnel are to be in or on any part of the crane.	<b>Vessel Alongside</b> Crane to be positioned to the East of 17 bollard.
<b>3</b>	<b>Vessel Working Alongside</b> Crane to be positioned at the West end of the vessel.	<b>Vessel Docking/Undocking</b> The boom of the transporter crane adjacent to the berth is to be lifted. No personnel to be on the crane.	<b>Vessel Working Alongside</b> Crane to be positioned to the East of 17 bollard.
<b>4</b>	<b>Vessel Working Alongside</b> Crane to be positioned at the West end of the vessel.	<b>Vessel Docking/Undocking</b> The boom of the transporter crane adjacent to the berth is to be lifted. No personnel to be on the crane.	<b>No Vessel Alongside</b> Boom is to be lifted and no personnel are to be in or on any part of the crane.
<b>5</b>	<b>Not affected</b>	<b>Vessel Working Alongside</b> Crane to be positioned at the West end of the vessel	<b>Vessel Docking/Undocking</b> The boom of the transporter crane adjacent to the berth is to be lifted. No personnel to be on the crane.

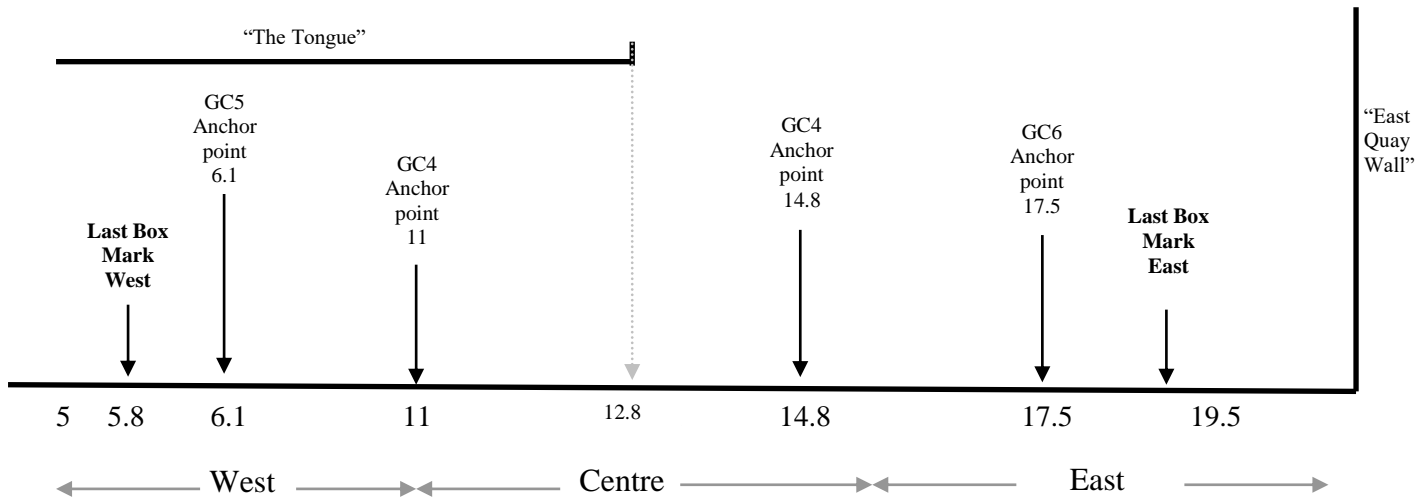
Any parameters concerning “crane” also apply to a second / third crane.

### Notes

1. Prior to any movement, the FTNS Duty Officer will contact the Operations Supervisor for confirmation that the conditions in the above table have been met and that clearance can be given for the vessel movement to take place.
2. Should Operations Staff, FTNS and Pilot/Master agree, the in-bound vessels may proceed from the lock on the understanding the conditions in the above table will be achieved by the time the vessel reaches the East Cut, and, a layby berth has been allocated and agreed. If no clearance has been given docking vessels should not leave the lock unless directed to a lay-by berth and undocking vessels must not commence singling up.
3. These controls also apply when engineering staff are carrying out maintenance work on a gantry crane or if crane training or any other activity involving the cranes is taking place.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

#### 4. Container Berth Position Reference Schematic:



5. A vessel will be berthed with reference to the appropriate Last Box Mark – East or West, or, the bow and stern positions with reference to bollard positions.
6. Storm Anchor Point - Whenever possible the gantry cranes will be located in their storm anchor positions. Clear of, or mid-ships of, manoeuvring vessels.
7. Weather - A pilot or master may require additional measures to be taken according to the individual circumstances of each case.
8. Berthing space between vessels to be a minimum of vessel's length plus 20%.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

### **3 PORT OF LEITH (G)**

#### **3.1 Docking and Sailing Guidelines and Voluntary Tug Code Introduction**

The following revised Guidelines have been drawn up for the port of Leith.

The Guidelines form part of the formal risk assessment process and are continuously under review in the light of operational experience. There has been extensive consultation between the Port Authority and the Forth Pilots while producing these Guidelines.

It is not intended that these Guidelines are a rigid set of regulations or rules to be followed on all occasions, they are intended as a guide to ships masters, agents, pilots and the Port Authority to allow safe and effective scheduling of vessels.

Further discussions on some occasions maybe required between the Duty Pilot, Forth and Tay Navigation Service and the vessel's Master, taking into account the prevailing weather and tidal conditions and any other special circumstances.

The final decision on the number of tugs required rest with the Master of the vessel, in consultation with the pilot.

However the Port Authority reserves the right to require a vessel to take a tug or comply with any special instruction which may be considered necessary according to the particular circumstances of the case.

The following assumptions have been made in preparing these guidelines:

- Standard Ship – single screw with no bow/stern thrusters, high efficiency rudder or other manoeuvring aids.
- Favourable weather conditions.
- Tidal Ranges within predicted limits.
- No adverse local activity and/or conditions.

Non-standard vessel will be assessed on an individual basis.

The Guidelines are presented in a tabular form, the tables contain an identification letter indicating tidal constraints followed by a numerical indication of the number of tugs recommended.

For ports with lock entrances the Guidelines refers to the requirement to enter/leave the locks. Further consideration to tug requirement may need to be given depending on berth location, side to, proximity of other berthed vessels and the table in 6.2.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

### 3.2 Guidelines (G)

*The information detailed below refers to STANDARD SHIPS, which are single screw with no Bowthrust. Standard meteorological conditions of maximum wind gusts not exceeding 15 knots and good visibility also apply.*

**U** Unrestricted      **F** Not during ebb      **A** HW Slack only      **B** HW or LW slack

Numerical indicates tug numbers

**These guidelines should be regarded purely as a starting point for discussions with the Port Authority, Duty Pilot, Master and Agent on tug allocation and scheduling. Actual tug allocation may be increased or reduced as appropriate. The guidelines should not be construed as any form of regulations.**

Draft (m)	Length overall in metres										
	<100		100 – 120		120-145		145-165		165-185		>185
	Spring	Neap	Spring	Neap	Spring	Neap	Spring	Neap	Spring	Neap	
<b>Dock</b>											
<6	U0	U0	B1	F0*	B1*	F1*	B2	F2#	A2	B2	A3
>6	B0/U1	U0	B1	F1	B2	B1*/F2	B2	F2#	A2*	A2	A3
>7	A1	B0/U1	B1	F1	B2	A1*/F2	A2	A2	A2*	A2	A3
>8			A1*	F1*	A2	A2	A2	A2	A2*	A2*	A3
>9			A2	A2	A2	A2	A2	A2	A3	A3	A3
<b>Sail</b>											
<6	U0	U0	U0*	U0*	U1*	U1*	F2	F2	F2#	F2#	F2*#
>6	U0	U0	F0*	U0*	F1*	F1*	F2	F2	F2#	F2#	A2#
>7	F0	U0	F1	F1	F2	F2	F2	F2	A2	A2	A2*
>8			F1*	F1*	F2	F2	A2	F2	A2	A2	A3
>9			A1*	A1*	A2	A2	A2	A2	A2*	A2*	A3

\* An additional tug may be required e.g. first arrival, vessel at upper end of length band, berth position or heading, and other vessels within the dock.

# Generally these vessels will move at slack water but further consideration will be necessary if two large vessels are required to move on the tide for a follow-on.

- Tidal range: Spring  $\geq 3\frac{1}{2}$ m, Neap  $< 3\frac{1}{2}$ m
- Scheduled times are: Inbound - Leith Approach Buoy, Outbound – from berth
- Under Keel Clearance: Flood 1m, Ebb 1.5m and 0.5m in dock
- HW slack: Docking – Leith Roads no later than HW-2; Sailing – Leave lock no later than HW-1.5
- HW slack Leith is about 1 to 1½ prior to HW
- Recommended Bollard Pull will be catered for in a separate document

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

Pilots should report to FTNS on vessel manoeuvrability after first visit for comment entry into IPOS.

### 3.3 Towage Minimum Bollard Pull Requirement (G)

The following table is a guide to the minimum combined bollard pull requirement for tug allocation in conjunction with the “Forth Ports Docking and Sailing Guidelines and Voluntary Tug Code”. As with the Code this table is a guideline and is not intended as a rigid set of rules and regulations.

**These guidelines should be regarded purely as a starting point for discussions with the Port Authority, Duty Pilot, Master and Agent on tug allocation and scheduling. Actual tug allocation may be increased or reduced as appropriate. The guidelines should not be construed as any form of regulations.**

When allocating 2 or more tugs to a job consideration must be given to the mix of tugs to ensure that there is an appropriate balance with the tugs employed.

	<b>1 Tug</b>	<b>2 Tugs</b>	<b>3 Tugs</b>	<b>4 Tugs</b>
<b>&lt; 100m</b>	19t	38t	N/A	N/A
<b>100m – 120m</b>	19t	38t	N/A	N/A
<b>120m - 145m</b>	30t	38t	N/A	N/A
<b>145m – 165m</b>	30t	45t	N/A	N/A
<b>165m – 185m</b>	N/A	75t	80t	N/A
<b>&gt; 185m</b>	N/A	80t	95t*	95t

\* If Beam equal to or less than 28.5m the bollard pull can be reduced to 85t.

**\*\*On Vessels>185m LOA, for all tug allocations, one tug must be minimum 50t BP.**

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

### 3.4 Passenger Ship Guidelines (G)

A passenger vessel is assumed to have a bow thruster, twin screw & rudders or Azipods.

Vessels not meeting these criteria will be categorised according to the Cruise Liner Information Form which should be completed and returned before submission on a Proposed Vessel Movement (PVM) Form.

The following guidelines are based on Cruise Vessels with **no tugs**, further consideration/discussions can be given to scheduling arrival & departure times should a tug(s) be utilised. They are also subject to meteorological conditions with maximum wind gusts of 15 knots.

**Tides:** Neap < 3.5m Range Spring  $\geq$  3.5m range.

**Minimum Underkeel Clearance in Approach Channel:**

Flood tide 1.0m  
Ebb tide 1.5m.

#### Designations:

- A** HW Slack Only  
HW Slack = HW-2
- B** HW or LW Slack  
HW Slack = HW-2  
LW Slack = HW -6
- C** Neap HW or LW Slack  
HW Slack = HW -3 to -1  
LW Slack = HW-7 to -5
- U** Unrestricted
- F** Not during ebb  
Depart berth HW -7½ to HW -1½  
F\*\* Depart berth HW -7½ to HW -2

#### Leith Times

Arrival: at Leith Approach Buoy

Departure: Depart Berth

LOA	<115m		115 – 125m		125 – 135m		135 – 145m		146 – 165m		>165m	
	Spring	Neap	Spring	Neap	Spring	Neap	Spring	Neap	Spring	Neap	Spring	Neap
<b>Arr</b>	<b>U</b>	<b>U</b>	<b>B</b>	<b>U</b>	<b>B</b>	<b>C</b>	<b>B</b>	<b>C</b>	<b>A</b>	<b>C</b>	<b>A</b>	<b>A</b>
<b>Dep'</b>	<b>U</b>	<b>U</b>	<b>U</b>	<b>U</b>	<b>F</b>	<b>U</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>F</b>	<b>F**</b>	<b>F</b>

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

Towage requirements as per pre-cruise discussions between two Pilots and Harbour Master. Pilots should report to FTNS on vessel manoeuvrability after first visit for comment entry into IPOS

#### Length < 115m

Arr	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Neap <3.5m															
Spring ≥3.5m															

Dep'	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Neap <3.5m															
Spring ≥3.5m															

#### Length 115m to 125m

Arr	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Neap <3.5m															
Spring ≥3.5m															

Dep'	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Neap <3.5m															
Spring ≥3.5m															

#### Length 125m to 135m

Arr	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Neap <3.5m															
Spring ≥3.5m															

Dep'	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Neap <3.5m															
Spring ≥3.5m															

#### Length 135m to 145m

Arr	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Neap <3.5m															
Spring ≥3.5m															

Dep'	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Neap <3.5m															
Spring ≥3.5m															

#### Length 145m to 165m

Arr	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Neap <3.5m															
Spring ≥3.5m															

Dep'	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Neap <3.5m															
Spring ≥3.5m															

#### Length >165m

Arr	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Neap <3.5m															
Spring ≥3.5m															

Dep'	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Neap <3.5m															

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

### 3.5 Wind Parameters (G)

The port will be closed to vessel movements when the mean wind speed measured on the Leith anemometer is 40 knots and over.

### 3.6 Visibility Parameter (P)

Vessels are not permitted to enter the Port when the outer end of the lead in jetty (FL red 6 sec) cannot be seen from the Harbour Office.

Vessels are not permitted to enter the lock from the Dock when No.3 Gate cannot be seen from the Harbour Office.

### 3.7 Management Plan (P)

The following should be confirmed before manoeuvring in the Port of Leith.

- That a harbour manoeuvre plan has been prepared and agreed (where appropriate) with the pilot.
- That any defects, which may affect the safe navigation or manoeuvrability of the vessel, are reported.
- The maximum draft.

The following procedures should be adopted

## Inbound

On transferring from Channel 71 to Channel 12 to communicate with Leith, please pass the following information:

- A harbour manoeuvre plan from the Leith Approach Buoy to berth has been agreed.
- The maximum draft.

## Outbound

On seeking permission to depart from the berth, please pass the following information:

- A harbour manoeuvre plan has been agreed from the berth to the Leith Approach Buoy.
- Any defects (as in 8.1.2).
- Maximum draft.

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC OP 14_20	<b>Authorised By</b> CHM	<b>Original Date</b> 19 Nov 2015
<b>Marine Procedures, Guidelines &amp; Information (Forth)</b>	<b>May 2019</b>	<b>Revised By</b> MO	<b>Review Due</b> August 2019

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC OP 14_20	<b>Authorised By</b> CHM	<b>Original Date</b> 19 Nov 2015
<b>Marine Procedures, Guidelines &amp; Information (Forth)</b>	<b>May 2019</b>	<b>Revised By</b> MO	<b>Review Due</b> August 2019

### **3.8 Imperial Dock Movements (P)**

For all arrival and departures for vessels requiring 3 tugs or vessels  $\geq 150\text{m}$ , the South Side Imperial berth should be free of shipping for 100m measured from the Imperial Cut.

For the arrival and departures of vessels  $< 150\text{m}$  the berth may be occupied provided that the vessel berthed has a maximum beam of 18m.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## **4 PORT OF ROSYTH**

### **4.1 Docking and Sailing Guidelines and Voluntary Tug Code Introduction (G)**

The following revised Guidelines have been drawn up for the port of Rosyth.

The Guidelines form part of the formal risk assessment process and are continuously under review in the light of operational experience. There has been extensive consultation between the Port Authority and the Forth Pilots while producing these Guidelines.

It is not intended that these Guidelines are a rigid set of regulations or rules to be followed on all occasions, they are intended as guide to ships masters, agents, pilots and the Port Authority to allow safe and effective scheduling of vessels. Further discussions on some occasions maybe required between the Duty Pilot, Forth and Tay Navigation Service and the vessel's Master, taking into account the prevailing weather and tidal conditions and any other special circumstances.

The final decision on the number of tugs required rests with the Master of the vessel, in consultation with the pilot.

However the Port Authority reserves the right to require a vessel to take a tug or comply with any special instruction which may be considered necessary according to the particular circumstances of the case.

The following assumptions have been made in preparing these guidelines:

- Standard Ship – single screw with no bow/stern thrusters, high efficiency rudder or other manoeuvring aids.
- Favourable weather conditions.
- Tidal Ranges within predicted limits.
- No adverse local activity and/or conditions.

Non-standard vessel will be assessed on an individual basis.

The Guidelines are presented in a tabular form, the tables contain an identification letter indicating tidal constraints followed by a numerical indication of the number of tugs recommended.

For ports with lock entrances the Guidelines refers to the requirement to enter/leave the locks. Further consideration to tug requirement may need to be given depending on berth location, side to, proximity of other berthed vessels and the table in 6.2.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## 4.2 Guidelines (G)

The information detailed below refers to STANDARD SHIPS, which are single screw with no Bowthrust. Standard meteorological conditions of maximum wind gusts not exceeding 15 knots and good visibility also apply.

**U** Unrestricted      **F** Not during ebb      **A** HW Slack only      **B** HW or LW slack

Numerical indicates tug numbers

**These guidelines should be regarded purely as a starting point for discussions with the Port Authority, Duty Pilot, Master and Agent on tug allocation and scheduling. Actual tug allocation may be increased or reduced as appropriate. The guidelines should not be construed as any form of regulations.**

Draft (m)	Length overall in metres			
	<120	120-150	150-180	>180
<b>Docking</b>				
<6	U0	U0*	B2	B2*
>6	U0	U1*	B2	B2*
>7	U0	U1*	B2	A2*
>8	U0*	U1*	B2	A2*
>9	U0*	U1*	B2*	A2*
<b>Sailing</b>				
<6	U0	U0*	U2	U2*
>6	U0	U1	U2	U2*
>7	U0	U1	U2	U2*
>8	U*	U1*	F2	F2*
>9	U*	U1*	F2*	F2*

\* An additional tug may be required e.g. first arrival, vessel at upper end of length band, berth position or heading and other vessels in the vicinity.

- Scheduled times are: Inbound – Rail Bridge, Departure – from berth
- Under Keel Clearance: 0.5m on berth (large vessels may be required to have 1.0m)
- HW slack: @ Bridge: (HW - 2¼ hr) ~ (HW)
- LW slack: LW ± 1hr
- Recommended Bollard Pull will be catered for in a separate document

Pilots should report to FTNS on vessel manoeuvrability after first visit for comment entry into IPOS.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## RoRo Specific

The ferry will require tugs as follows:

1 tug > 25 knots

2 tugs > 30 knots

> 40 knots the port will be closed to shipping movements.

Bookings should be made with FTNS on 01324 498584 or VHF Channel 71.

Bookings for tugs should be made at least 3 hours before tug is required.

The above is subject to the availability of tugs.

### 4.3 Passenger Ship Guidelines (G)

A passenger vessel is assumed to have a bow thruster, twin screw & rudders or Azipods.

Vessels not meeting these criteria will be categorised according to the Cruise Liner Information Form which should be completed and returned before submission on a Proposed Vessel Movement (PVM) Form.

The following guidelines are based on Cruise Vessels with **no tugs**, further consideration/discussions can be given to scheduling arrival & departure times should a tug(s) be utilised. They are also subject to meteorological conditions with maximum wind gusts of **20** knots.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

All states of tide are acceptable except where listed below:

- A No transit HW -4.5 to HW -2.5 on Flood
- B No transit HW -5 to HW-2 on Flood  
HW +1 to HW+3.5 on Ebb
- C No transit HW -4.5 to HW -2.5 on Flood  
HW +2 to HW +4 on Ebb
- D No transit HW -4.5 to HW -2.5 on Flood  
HW +1.5 to HW +4 on Ebb
- E No transit HW -5 to HW-2 on Flood  
HW +1 to HW +4 on Ebb
- U Unrestricted

\*Dictates the possible need for this vessel to transit West of the Beamer, and the possibility of tugs being required to achieve this. This decision should be made in consultation between Harbour Master, pilot and if necessary the Vessel.

### Rosyth Times

Arrival: at the Bridges  
Departure: Depart Berth

LOA	Length <160m			Length 160-180m			Length >180m		
Tide	Spring >5m	Mid 4-5m	Neap <4m	Spring >5m	Mid 4-5m	Neap <4m	Spring >5m	Mid 4-5m	Neap <4m
ARR	U	U	U	B	A	U	E	D	C
Tide	Spring ≥ 4.5m		Neap < 4.5m	Spring ≥ 4.5m		Neap < 4.5m	Spring ≥ 4.5m		Neap < 4.5m
DEP	U		U	U*		U	U*		U

Towage requirements as per pre-cruise discussions between two Pilots and Harbour Master. Pilots should report to FTNS on vessel manoeuvrability after first visit for comment entry into IPOS.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

### Length < 160m

Arr	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Neap < 4m															
Mid 4-5m															
Spring >5m															

Dep'	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Neap <4.5m															
Spring ≥4.5m															

### Length 160m to 180m

Arr'	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Neap < 4m															
Mid 4-5m															
Spring >5m															

Dep'	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Neap <4.5m															
Spring ≥4.5m											*	*			

### Length > 180m

Arr'	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Neap < 4m															
Mid 4-5m															
Spring >5m															

Dep'	-8	-7	-6	-5	-4	-3	-2	-1	HW	+1	+2	+3	+4	+5	+6
Neap <4.5m															
Spring ≥4.5m					*	*	*				*	*	*		

**\*Amber Segments dictate the possible need for this vessel to transit west of the beamer, and the possibility of tugs being required to achieve this. This decision should be made in consultation between Harbour Master, Pilot and if necessary the Vessel.**

For vessels/tides which are borderline, consult Harbour Master/PMC Pilot

Towage requirements as per pre-cruise discussions between two Pilots and Harbour Master. Pilots should report to FTNS on vessel manoeuvrability after first visit for comment entry into IPOS.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

#### 4.4 Towage Minimum Bollard Pull Requirements (I)

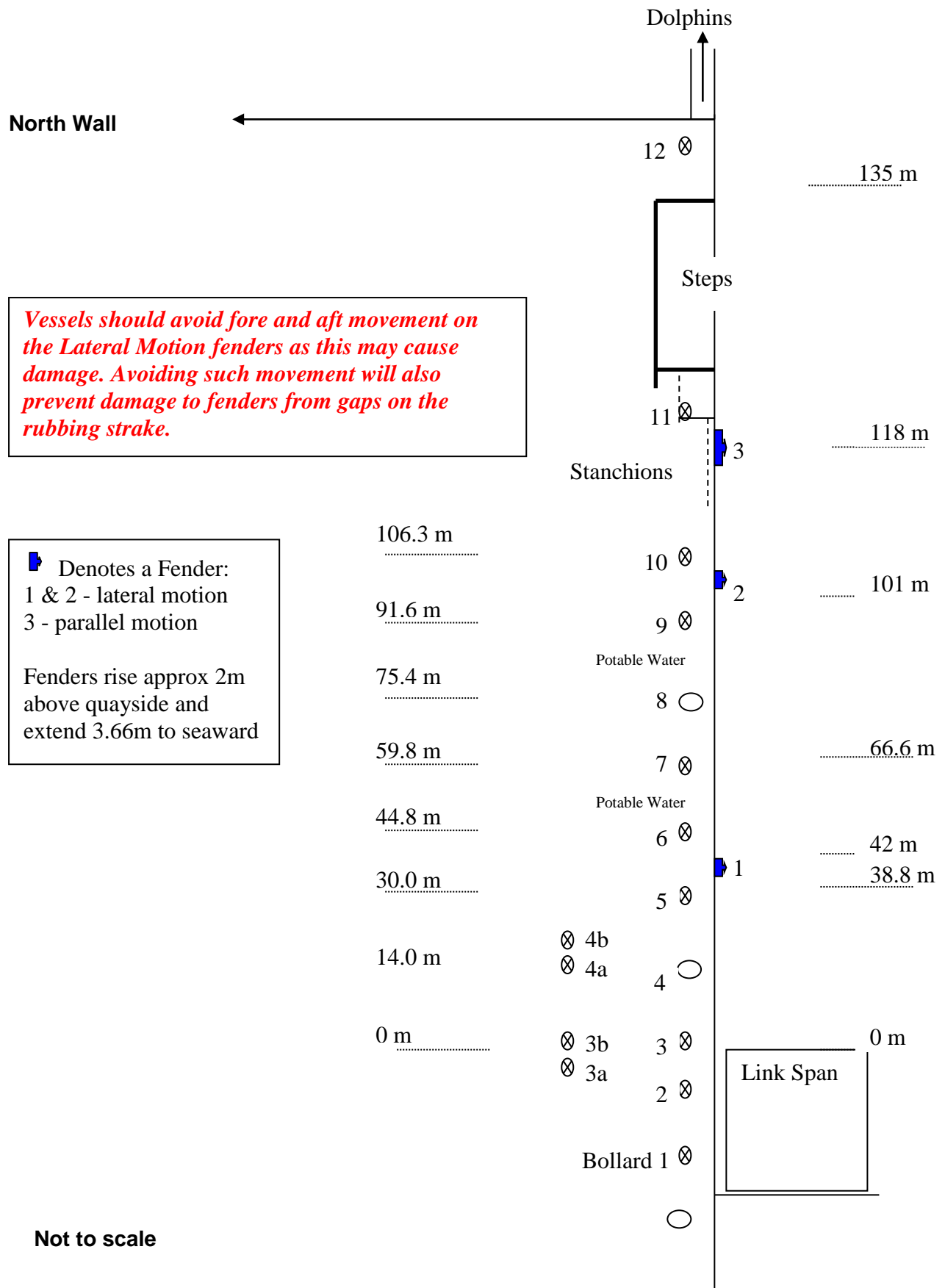
The following table is a guide to the minimum combined bollard pull requirement for tug allocation in conjunction with the “Forth Ports Docking and Sailing Guidelines and Voluntary Tug Code”. As with the Code this table is a guideline and is not intended as a rigid set of rules and regulations.

When allocating 2 or more tugs to a job, consideration must be given to the mix of tugs to ensure that there is an appropriate balance with the tugs employed.

	<b>1 Tug</b>	<b>2 Tugs`</b>	<b>3 Tugs</b>
<b>&lt; 120m</b>	19t	38t	N/A
<b>120m – 150m</b>	19t	38t	N/A
<b>150m - 180m</b>	30t	45t	65t
<b>&gt; 180m</b>	N/A	75t	85t

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

#### 4.5 Fender Information for “T” Berth (I)



<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

#### **4.6 Wind Parameters (G)**

The port will be closed to vessel movements when the mean wind speed measured on the Rosyth anemometer is 40 knots and over.

#### **4.7 Visibility Parameters (P)**

The Port is closed to vessel movements if the visibility is reduced to 5 cables or less.

(Forth Road Bridge Construction vessels may operate in lesser visibility as per FCBC Guidelines)

<b>FORTH PORTS LIMITED</b>	<b>Document ID</b> FP PMSC OP 14_20	<b>Authorised By</b> CHM	<b>Original Date</b> 19 Nov 2015
<b>Marine Procedures, Guidelines &amp; Information</b> <b>(Forth)</b>	<b>May 2019</b>	<b>Revised By</b> MO	<b>Review Due</b> August 2019

## **5 PORTS OF METHIL, KIRKCALDY, BURNTISLAND, INVERKEITHING AND CROMBIE JETTY**

### **5.1 Methil (G)**

Dockings and sailings carried out between HW –2 and HW providing there is sufficient water.

A vessel may be allowed to sail shortly after HW if she is close to completing cargo work and no other vessel is in port.

Vessels stemmed for Methil do not normally require tugs.

#### **5.1.1 Methil Energy Park (G)**

Piloted vessels will only be permitted to berth at the Methil Energy Park facility if up to date surveys have been conducted and that the quay including ladder are maintained in a safe condition.

Guidance on Methil Energy Park Berths can be found in the Quayside Regulations. An updated version of these guidelines can be found at:

<http://www.scottish-enterprise.com/services/develop-new-products-and-services/energy-park-fife/facilities>

### **5.2 Kirkcaldy (G)**

Dockings and sailings will be carried out between HW-1 and HW providing there is sufficient water

Berth has been declared level, dredged to Chart Datum in close approaches and Inner Harbour and free from obstructions.

Berth is subject to regular bathymetric survey and the berth operator will ensure that the berth is dredged as required to maintain depths to Chart Datum.

Harbour Master to be immediately advised by telephone in the event of any items, however small that has entered the water. This is necessary to prevent any channel obstruction or vessel damage.

Lock gates are no longer in use

Vessels stemmed for Kirkcaldy do not normally require tugs.

Pilot will board in Kirkcaldy Roads.

Main entrance is 15.2 metres wide.

The maximum size of vessel normally accepted is LOA 85 metres and a Beam of 14 metres. Vessels out with these dimensions will be dealt with on a case-by-case basis.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

Vessels are required to have an operational bow thruster.

Vessels will berth port side alongside as the preferred side on the Carr Mills berth. Ruling depth 0.0m (Inner harbour and close approach channel dredged to Chart Datum).

Under Keel Clearance 0.7m

Sill Height 0.65 below Chart Datum

Admiralty Chart Datum (LAT) is 3.55 below Ordnance Datum, Newlyn

### 5.3 Burntisland (G)

Dockings and sailings can take place as soon as there is sufficient water ~~are carried out between HW—2 and HW providing there is sufficient water.~~

#### **Larger vessels berthing at Burntisland East Dock**

The normal maximum length ship at Burntisland East Dock is circa 100m.

The Scot Timber operation within the East dock may require larger vessels of the Sormovskiy Class - 119.2m with 80kW bowthruster.

The parameters below are primarily aimed at Sormovskiy class but may be used as a guide for other larger vessels.

#### **Arrival**

- Up to 15kts - 1 tug (19t)
- Over 15kts - 2 tugs.

Where possible, vessels of such length should be berthed SST. Recommendations for swinging:

- In less than 10kts the vessel may swing inside then back down to berth for SST.
- In 10kts or over, swing outside and back in from the river.

The final decision rests with Master/Pilot

#### **Departure**

If berthed SST – no tug

If berthed PST:

- Up to 15kts – 1 tug
- Over 15kts – 2 tugs.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## 5.4 Inverkeithing (P)

### Berthing at Timber Lay-by Berth East Ness Pier

Following a general visual inspection of the berths at Inverkeithing it has been declared unsafe for pilots to berth or sail vessels from the timber jetty lay-by berth at East Ness Pier due to its unsound condition.

As a consequence the owners/operators of this facility have been advised that vessels will not be piloted either onto or off this jetty. The owners/operators have been further advised that this jetty is within compulsory pilotage waters and any vessel berthing or sailing from the jetty without a pilot will be in breach of the Pilotage Directions.

## 5.5 Crombie (I)

Crombie is located on the North side of the river between Rosyth and Grangemouth. The jetty is operated by the Ministry of Defence and consists of two berths: South berth with a minimum of 12 metres at low water, and North Berth with a minimum of 7.5 metres. There is an annual Hydrographic survey undertaken and dredging is arranged as required to maintain minimum depths. Visiting ships are mostly naval or Fleet Auxiliary. Bridge transit time for larger vessels will determine the berthing time. Side too will be determined by the tidal state.

All port visits are preceded by signal LOGREQ (Logistics Requirement), giving 7 days notice. This will list all vessel requirements including Pilotage, tugs and line handlers.

Crombie jetty operates on VHF channel 74 – call sign Crombie jetty.

A stand by tug is required at the jetty during cargo operations. When a ship is alongside there is a speed restriction of 10 knots for passing vessels as per General Direction 17.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

### 5.5.1 Towage Minimum Bollard Pull Requirements – Crombie (G)

The following table is a guide to the minimum combined bollard pull requirement for tug allocation in conjunction with the “Forth Ports Docking and Sailing Guidelines and Voluntary Tug Code”. As with the Code this table is a guideline and is not intended as a rigid set of rules and regulations.

When allocating 2 or more tugs to a job consideration must be given to the mix of tugs to ensure that there is an appropriate balance with the tugs employed.

	1 Tug	2 Tugs
AFSH's (Fort Austin/Rosalie)	30t	N/A
AOR's (Fort Victoria/George)	N/A	60t
Fleet Tankers (Wave Knight/Ruler)	30t	N/A
Galahad Class	N/A	36t
Leaf Class	N/A	60t
Diligence Class	18t	N/A
Rover Class	30t	N/A
CVS (Ark Royal/Invincible/Illustrious)	N/A	60t

### 5.6 Wind Parameters (G)

#### Methil

##### Port

Maximum wind speed 35 knots but reduced to 25 knots should there be an easterly element to the direction.

Swell conditions to be determined by pre-assessment.

#### Energy Park Berth

Refer to latest edition of Energy Park Fife Quayside Regulations.

Barges – as per agreed parameters on the Barge Method Statement.

Vessels – to be determined by pre-assessment of swell conditions.

#### Kirkcaldy

Maximum wind speed 20 knots, restrictions may be put in place with vessels LOA greater than 80m.

Wind and swell conditions to be determined by pre-assessment.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

### **Burntisland**

Maximum wind speed 35 knots.

### **Inverkeithing**

Maximum wind speed 35 knots.

### **Crombie**

Maximum wind speed 30 knots.

## **5.4 Visibility Parameters (P)**

### **Methil**

Vessels are not permitted to enter or leave the Port when the outer end of the breakwater (Oc G 6 sec) cannot be seen from the Harbour master's office at No.2 Dockhead.

### **Energy Park Fife**

Vessels are not permitted to berth or depart when southern end of West Berth cannot be seen from the northern end of East Berth.

### **Kirkcaldy**

Vessels are not permitted to enter or leave the port when the outer breakwater (F1.R 5s) cannot be seen from the Carrs Mill berth.

### **Burntisland**

Vessels are not permitted to enter or leave the Port when the outer end of the East Breakwater (F1 (2) G sec) cannot be seen from the Harbour Office on the north side of the Dock Gates.

### **Inverkeithing**

The harbour is closed to vessel movements if the visibility is reduced to 2 cables or less.

### **Crombie**

Movements on and off the jetty will not be permitted unless the visibility of the jetty is a minimum of 1 nautical mile.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## 6 TOWAGE

### 6.1 Tug Fleet (I)

The following tugs operate on the Forth:

Company	Tug Name	Bollard Pull	Type	LOA	Beam	Draft
<b>Forth Estuary Towage - Leith</b>	Fidra	50t	Voith	30.0m	11.0m	5.3m
	Oxcar	30t	Voith	30.0m	9.0m	4.6m
	Seal Carr	19t	Voith	28.8m	8.6m	4.0m
	Craigleith	70t	ASD	28.2m	12.6m	5.5m
<b>INEOS FPS /Targe Towing – Hound Point</b>	Hopetoun	124t	ASD	43.5m	13.5m	6.7m
	Cramond	62t	ASD	34.3m	10.5m	4.6m
	Dalmeny	62t	ASD	34.3m	10.5m	4.6m
	Corringham	70t	ASD	32.2m	11.6m	5.8m
<b>Svitzer Towage - Grangemouth</b>	Roseberry Cross	37t	Voith	30.6m	9.8m	4.5m
	Svitzer Lyndhurst	42t	Voith	30.0m	11.0m	5.2m

These tugs provide the main towage for vessels utilising ports on the Forth. Other smaller licensed tugs are also available for barge operations together with tugs that may be licensed for specific construction projects from time to time.

### 6.2 Towage Guidelines (G)

Guidelines for towage operations on the Forth and Tay are detailed on the Forth Ports website at <http://www.forthports.co.uk/ports/marine/marineInformation/> .

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## **7 PILOTAGE**

### **7.1 Pilot Vessel Operations in Restricted Visibility (P)**

Forth Ports and terminal operators have parameters in place which require ports, docks or terminals to be closed to shipping movements during periods of restricted visibility. However, there will be times when despite ports, docks or terminals being closed to vessel movements Pilot Vessel operations will still be conducted in the river.

Restricted visibility is all circumstances where visibility is, or is expected to, reduce to a distance where the Pilot Vessels normal ability to perform may be impaired. Such restrictions in visibility could be due to fog, mist, snow, rain, sleet or any other conditions that impair visibility. In circumstances where restricted visibility exists, or is likely to exist, the Pilot Vessel Coxswain shall as part of the passage plan and risk assessment process decide how the operation will be conducted, what dangers are associated with operating the Pilot Vessel in restricted visibility and what risk reduction measures should be applied. When completing this assessment the following points should be considered, along with others as deemed necessary in the circumstances:

- Allocation of extra time for the Pilot Vessel operation.
- Conduct of the Pilot Vessel at a safe and appropriate speed.
- Posting of additional lookout(s) onboard the Pilot Vessel.
- Ensuring appropriate setup of navigational equipment on the Pilot Vessel.
- Alteration of passage plan to incorporate increased passing distances.
- Heightened risk when coming alongside a vessel.
- Heightened communication with both VTS and the attended vessel.

The Pilot Vessel Coxswain will inform the Pilot/Master of any concerns that he may have as to the safety of his vessel and the boarding/disembarking operation. If necessary, the Pilot Vessel Coxswain should, in consultation with the Duty Pilot or at night the next pilot on turn, abort the operation in conjunction with the “Suspension of Operations” procedure in the Pilotage Code of Practice. As per this procedure, the situation should be reviewed every hour to assess whether conditions are static, deteriorating or improving.

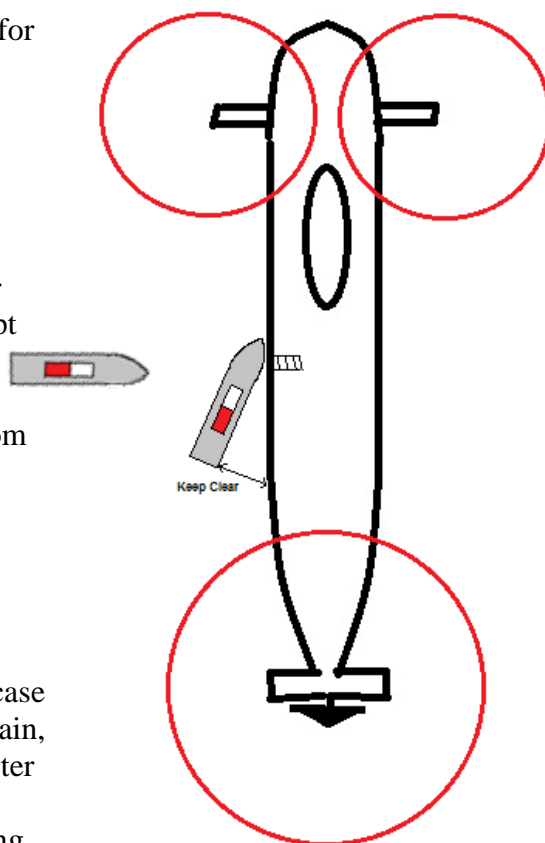
Single manned vessel operations should be suspended when visibility falls below 1.5 cables (280m - Pilot Station to the Northern tip of the East Breakwater).

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## 7.2 Pilot Boat Operations – Submarines (G)

Submarines are difficult to board owing to the nature of their construction and how they lie in the water. Maneuvering the pilot cutter and transferring the pilot should be pre-determined. Guidelines for boarding are as follows:

- Agent/Navy Liaison to confirm the boarding procedure and boarding position in advance, when at all possible.
- Navy Liaison to endeavor to provide details of the submarines underwater profile (such as shape of the hull and positions of planes etc)
- There is to be a pre-boarding discussion between cutter and submarine.
- Confirmation from submarine that there is a suitably prepared person on board to assist pilot as required.
- Submarine to be stopped in the water in order for the transfer to take place.
- The pilot ladder should be approached at right angles to the vessel in order to stay clear of submarines danger areas (see diagram)
- Forward shoulder of pilot vessel to be used for the transfer. Pilot vessel stern (props) to be kept well clear, as if the pilot vessel goes fully alongside the submarine, then there is a risk of damage to the props when moving away from the submarine.
- In adverse weather, the decision whether the transfer takes place is made by the pilot vessel coxswain. If due to weather the transfer is deemed to hold too much risk, then a case by case decision to be made, in consultation with Captain, Manager Towage - Pilot vessels, Harbour Master and Pilots, if action is to be taken, such as disembarkation of pilot in the locks or arranging the boarding to take place in the lee of Inchkeith or other.



*Note*-Pilot vessels with stabiliser fins outboard to the props and rudders which could easily be damaged by a submarines hull should not generally be used.

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019

## **8 BRAEFOOT & HOUND POINT**

### **8.1 Hound Point Marine Terminal (I)**

Hound Point Marine Terminal consists of three interconnected island structures situated east of the Forth Bridge and is operated by BP. The terminal has 3 berths, HP3 accommodates the vapour recovery and processing plant equipment, while HP1 & HP2 are utilised for the export of Forties Blend Crude Oil and capable of accommodating vessels from 50,000 dwt up to VLCC's at approx 350,000 dwt. Hound Point is presently the largest exporting facility in Scotland.

Transit to the terminal is via the Forth Deep Water Channel. Vessels transiting the river to berth at Hound Point will be assisted by towage from the Hound Point Tug Fleet. The tug fleet is normally stationed at dedicated moorings in close proximity to Hound Point Marine Terminal. These tugs are designed to provide a timely response to an emergency at the terminal or vessels alongside.

Hound Point Marine Guidelines is a controlled document produced by BP. This document contains information such as tidal and weather parameters, berthing arrangements and manoeuvring plans and other pertinent information relating to the transit and berthing of vessels at Hound Point.

**For further information please refer to the latest edition of BP Forties Pipeline System – Hound Point Marine guidelines.**

### **8.2 Braefoot Bay (I)**

The Braefoot Marine Terminal consists of two jetties, located on the north shore north of Incholm Island. Products produced at the Mossmoran Plant in Fife are exported at the Braefoot Marine Terminal. The west jetty, operated by Shell, handles Propane, Butane and Natural Gasoline with vessels up to 60,000m<sup>3</sup> being accommodated. The smaller east jetty, operated by Exxon, exports condensate and ethylene in vessels up to 20,000 tonnes deadweight.

Transit to and from the terminal is via the Forth Deep Water and Mortimer's Deep. Vessels transiting to Braefoot Bay will be assisted by tugs (including a standby tug during the time a vessel is berthed) supplied by Forth Estuary Towage. Shell Marine duty personnel organize and operate the marine activities at both Shell and Exxon Jetties on behalf of Shell and Exxon respectively.

Braefoot Bay Marine Terminal Jetty Regulations & Information is a controlled document produced by Shell Braefoot. This document contains information such as tidal and weather parameters, berthing arrangements and maneuvering plans and other pertinent information relating to the transit and berthing of vessels at Braefoot Bay Marine Terminal.

**For further information please refer to the latest edition of Braefoot Bay Marine Terminal - Jetty Regulations & Information.**

<b>FORTH PORTS LIMITED</b>	Document ID FP PMSC OP 14_20	Authorised By CHM	Original Date 19 Nov 2015
Marine Procedures, Guidelines & Information (Forth)	May 2019	Revised By MO	Review Due August 2019