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| Section Number | Access Code | Document Number |
| 20 | 01 | 040 |
| Short title | | |
| FHC Controlled Document Template | | |



Falmouth Harbour Commissioners

Commercial Mooring buoys allocation and use

| Version No. | Date | Document Owner (author) | Description of changes made |
|-------------|------------|-------------------------|--|
| V0.1 | 14/12/2015 | D Paul | Draft for comments |
| V1.0 | 24/12/15 | D Paul | Updated and Approved by HM |
| V1.1 | 27/01/2016 | D Paul | VS added in contour lines for Crossroads buoy. |
| V2 | 31/1/2018 | D Paul | Amended for packet & jubilee |

This document is due for review on 31/01/2020 by current Document Owner

Introduction

There are a number Admiralty style moorings in the harbour. The Crossroads Mooring is a First Class mooring and the Frigate and Caldý Moorings are constructed to Admiralty 4th Class standards. An additional riser and chain (Packet) has been added between Caldý and Frigate, this is NOT a singing mooring but used in conjunction with either Caldý or Frigate in head and stern configuration. The Cutty Sark and Jubilee are located to the West of the Caldý. The allocation of these moorings to vessels must take into account their suitability in terms of their construction and also the available swinging room and depth of water.

Table 1 gives a summary of the swinging room, depth of water available and maximum vessel cable size for each of these moorings.

Precautions

Although a buoy berth is more secure than lying to a ship's own anchor, ship's masters should ensure that a suitable watch is maintained at all times. Notice for engines should not normally exceed 4 hours without the approval of the Harbour Authority. Notice for engines is to be reduced if strong winds are forecast.

Ship's masters should not deploy the vessel's own anchors whilst moored to the buoy as there is a risk of these becoming trapped in the groundwork

Parameters

The table contained at annexe 1 gives the limiting parameters for the buoys. These tables are used as guides. The final decision as to the appropriateness of the mooring lies with the duty harbour master who needs to take into account the other factors listed below:

Request to Use and Booking

Vessels wishing to book moorings should normally do so through their agents. Buoy Jumpers are available to assist with securing vessels to the buoy provided that 24 hours' notice is given and the weather conditions are suitable for securing the vessel.

To Use the Crossroads Buoy

Please also complete and return the Crossroads questionnaire 20-043-01 as well as the Pre-arrival Notification form (PNF) 90-040-01 to portoperations@falmouthharbour.co.uk

Particularly if short notice and outside office hours please call 01326 211395/ 07836661668 to discuss as emails are not monitored 24/ 7

To use the Frigate, Caldý, Packet, jubilee and Cutty Sark buoys

Please send the small Commercial Moorings Questionnaire/ Booking form 20-042-01 to portoperations@falmouthharbour.co.uk . Commercial vessels should also complete and return the Pre-arrival notification (PNF) form 90-040-01.

Particularly if short notice and outside office hours please call 01326 211395/ 07836661668 to discuss as emails are not monitored 24/ 7

It should be noted that Border Force has priority of use of the Frigate Buoy. Mooring to the Frigate Buoy is subject to agreement that the buoy will be vacated within 24 hours of notice being given that it is required by Border Force vessels. The Caldý to Packet head and stern mooring is currently subject to use by a long-term customer.

Authorisation

Final authorisation to use one of the above buoys lies with the duty harbour master who will take into account the other factors listed below:

Windage

Of the loads required to be resisted by moorings, windage is often the most significant for sheltered waters. It should be noted that the beam wind forces substantially exceed the forces generated by

similar head wind conditions and that vessels that may safely use a mooring in a swinging configuration may not be suitable for using the same mooring in a head and stern configuration.

Yawing

Vessels that yaw at the mooring will produce increased load as the aspect to the wind will be between the head and beam loadings. The actual loading can be considered to vary according to the sine of the angle to the wind (considering a head wind to be zero degrees). It can therefore be seen that where vessels has a maximum head wind force of 80 tonnes and a max beam wind force of 200 tonnes, a force of $80 + 120 \times \sin 45 = 165$ tonnes will be likely should the angle of yaw reach 45 degrees. Vessels that have a history of yawing excessively when moored by the bow may be declined use of swinging moorings.

Current Forces

Current forces can be significant although generally head and stern moorings are laid in line with the current flow to minimize these. Whilst generally current flows are less than 1 knot, it should be remembered that in extreme conditions the wind generates surface currents which may exceed these values and may not flow in the usual direction.

Wave Forces

Wave forces may also be significant, especially striking from the beam or the stern where the ship aspect is broad. In general, moorings are laid in sheltered environments but, the Crossroads Mooring is open to Southerly wind and swell waves.

Length of Stay

It must be borne in mind that strong wind conditions are a regular occurrence and unless the length of stay is brief and the weather forecast benign, the allocation must assume that strong winds are likely to be experienced at some point.

Securing Arrangements

The strength of the securing arrangements available must be taken into account in the allocation of moorings. Vessels are responsible for ensuring that their equipment is fit for purpose, capable of holding the vessel against the worst weather conditions likely to be experienced and are suitably protected against chafe. FHC will provide a pendant to assist securing to the Cross Roads Mooring. This is to be kept rigged but slack after the vessel is secured and provides emergency back up if the primary securing arrangements fail.

Annex 1 – Mooring allocation parameters

MOORING ALLOCATION PARAMETERS

| Mooring | Maximum vessel LOA | Maximum vessel draft | Maximum cable size |
|-------------------------|-----------------------|--|--------------------|
| | Remarks | | |
| Crossroads* | 180 Metres (600 Feet) | 10 Metres (32.8 Feet) | 60mm (2.63") |
| Caldy –Packet (H&S) | 60 Metre | 5 Metre | 38mm (1.5") |
| Caldy – Jubilee (H&S) | 50 Metre | 4.5 Metre | 38mm (1.5") |
| Frigate – Swinging | 45m 40m | 4 Metres (13.1 Feet) 5 Metre (16.4Feet) | 38mm (1.5") |
| Frigate to packet (H&S) | 60m | 5 Metres (16.4 Feet) | 38mm (1.5") |
| Caldy - Jubilee (H*S) | 50 Metre | 4.5 Metre | |
| Jubilee swinging | 33 Metres (108 Feet) | 4.5 Metres (14.8 Feet) | 28mm (1.1") |

* Appendix A shows the mooring swing calculation for the Crossroads Buoy

Related documents and information

20-041-01 Crossroads buoy mooring operation procedure

20-042-01 Caldly & Frigate buoy questionnaire

20-043-01 Crossroads buoy questionnaire

90-040-01 Prior Notification Form

Appendix A – Crossroads Mooring Swing Calculation

