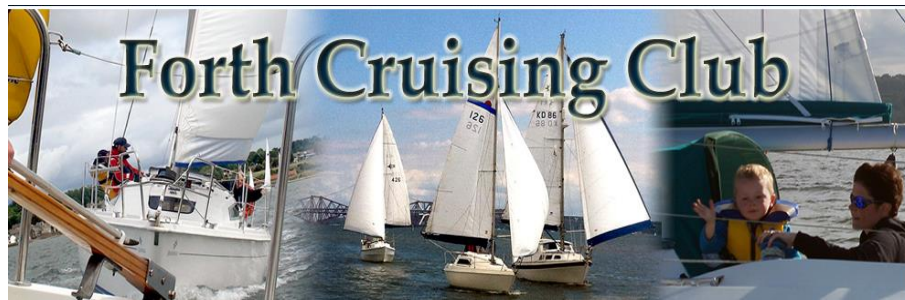




OPTIONS APPRAISAL REPORT REVIEW OF BRUCEHAVEN HARBOUR



BACKGROUND TO REVIEW

1 At the 2015 AGM an issue was raised about the limited space within Brucehaven Harbour and consequent difficulties in picking up moorings, particularly in strong winds. It was agreed at the AGM that a short term working group, chaired by the Rear Commodore Piers and Moorings, would be set up to examine the issue with an options appraisal report being prepared and submitted to the 2016 Spring General Meeting for members' consideration. A Decision at the Spring AGM was to extend time for additional views from members and to hold a special meeting to discuss and vote on the proposals on Wed 28th Sept 2016 at 7:30pm at the club.

REVIEW TEAM

2 The following members made up the review team:

Keith McDevitt (Rear Commodore Piers & Moorings), Ian Girvan (Club President), Alastair Pitcairn, Jack Thomson, Alex Birrell and Ken McNeill.

CURRENT MOORING WITHIN BRUCEHAVEN HARBOUR

3 There are currently a total of 32 moorings within Brucehaven Harbour: 14 moorings in 4 columns and 4 rows within the front section, and 18 moorings in 3 columns and 6 rows in the rear section. The front and rear sections are separated by a turning channel. Each Mooring Box is approximately 30' x 40'.

4. Diagram A shows the layout and occupied moorings as at August 2016. It is of note that there are 6 vacant moorings, three more than at Crane in. That said a number of new membership application for moorings have been made and all have been offered moorings at Limekilns as the Rear Commodore Piers & Moorings has decided not allocated any new moorings within Brucehaven until the results of this review are known.

A1 Osprey	B1 Seakatt	C1 Fyne Thyme	
A2 Linnet	B2 Maverick 26'	C2 Solitaire	D2 Cordelle
A3 Beyond Therapy	B3 Zico	C3 Armagnac	D3 Artemis
A4 Not Allocated	B4 In Charge	C4 Joint Venture	D4 Louise

B5 Crystal Clear	C5 Norse Mist	D5 Silver Girl
B6 Red Cat	C6 Peggy	D6 Pokio
B7 Meggie	C7 Vacant	D7 Sea Horse
B8 Serkas	C8 Bantiki	D8 Panache
B9 Vacant	C9 Vacant	D9 Elan II
B10 Vacant	C10 Vacant	D10 Renata

Brucehaven Pier

SURVEY QUESTIONNAIRE

5. Prior to convening the review team, Rear Commodore Piers and Moorings carried out his own survey of members with moorings within Brucehaven Harbour to ascertain the level of difficulty being experienced. Of the 32 moorings 26 individual members were within scope of the survey. The difference accounts for vacant moorings and members with more than one boat. 22 responses were received.

6. The following questions were asked:

Q1: Do you agree there is an issue with the spacing of the moorings within Brucehaven Harbour?

Yes = 8 No = 14 No response = 4

Q2: Do you have difficulties in manoeuvring your yacht due to the space provided within Brucehaven Harbour?

Yes = 6 No = 16 No response = 4

Q3: If the answer to Q2 is yes, should we be unable to resolve the issue within Brucehaven Harbour would you be interested in relocating your mooring to Limekilns Harbour?

Yes = 0 No = 22 No response = 4

7. The Review Team, whilst not party to drawing up the questionnaire, accepted that the results showed a not insignificant proportion of respondents had issues with the moorings in Brucehaven Harbour and, consequently, there was sufficient basis for proceeding with the review.

8. In passing, the review team noted the complete lack of interest amongst members in relocating to Limekilns Harbour (Question 3), despite the more generous dimensions in that harbour and the moorings there being regarded as fit for purpose.

REVIEW AND OPTIONS APPRAISAL

9. The review group agreed that its remit should be:

‘to review the mooring arrangements within Brucehaven Harbour with a view to identifying options and making recommendations to create additional space for ease of safe manoeuvring within the harbour’

10. **The review team was clear that no current member should be left without a mooring as a result of any recommendations made in the review.** It was further agreed that it was likely that any major changes such as a reduction in the number of moorings, would be achieved over a period of time through natural turnover i.e. members leaving the club.

11. The review team itself was unanimous in the view that space in Brucehaven Harbour is tight and it was noted that the previous Rear Commodore Piers and Moorings had acknowledged that the channels

between boats are narrow (see minutes of 2014 Spring General Meeting). The review team was also aware that over the years there had been a number of collisions between boats in the harbour resulting in damage.

12. In its deliberations the review group adopted a two-pronged approach:

1: what could be done in the **Short Term** within the constraints of the existing mooring set up;

2: what could be done **Longer Term** outwith the constraints of the existing mooring set up.

SHORT TERM -OPTION 1 – DO NOTHING

13. This option simply retains the status quo.

Argument for: The majority of those who responded to the survey do not agree that there is spacing and manoeuvring issue in the harbour.

Argument against: It is possible that at least some of the members who are content with the current arrangements have a sheltered mooring and/or have easy access and/or do not go out in strong winds or may not sail very often at all. Doing nothing does not address the spacing and manoeuvring issues experienced by a sizeable number of members.

Recommendation: This option should be rejected.

SHORT TERM -OPTION 2 – CORRECT LENGTH OF MOORING CHAINS AND STROPS

14. This option requires the Rear Commodore Piers and Moorings to ensure effective implementation of the current instructions (set out on the Club Website) relating to mooring chain and strop length thereby ensuring boats do not move excessively outwith their mooring box and blocking the channels.

Argument for: This is already a responsibility of the Rear Commodore Piers and Moorings and members should already be complying with the instructions set out on the website.

Argument against: None

Recommendation: This option should be accepted and implemented.

SHORT TERM - OPTION 3 – BOATS TO DEPLOY FENDERS WHILST MANOEUVERING WITHIN THE HARBOUR

15. This option seeks to minimize the potential for damage by requiring fenders to be deployed whilst manoeuvring in the harbour. The review group were split on whether this should be a mandatory or optional requirement but, on balance, favoured the former with the latter being a fall-back option.

Argument for: Minimises the potential for damage should boats get into difficulties when underway in the harbour. Good seamanship practice.

Argument against: It should be left to the judgement of individual skippers to decide when best to deploy fenders.

Recommendation: Fender deployment within the harbour should be a mandatory requirement and written into club rules and a Moorings Policy. However, if a mandatory requirement is considered to be too heavy handed, the review team is of the view that skippers should be encouraged to deploy fenders when entering and leaving the harbour. It is for individual skippers to decide whether to hang fenders while their boats are moored in the harbour in order to avoid/minimize damage from manoeuvring boats.

SHORT TERM - OPTION 4 – SETTING THE MAXIMUM SIZE OF BOATS ALLOCATED MOORINGS AT BRUCEHAVEN HARBOUR TO 27'

16. This option seeks to formalise the currently agreed maximum boat length limit of 27' for Brucehaven Harbour. Only one boat in the harbour exceeds this limit and it was allocated its mooring before the laying of moorings in Limekilns Harbour which can accommodate larger boats. It is currently within the Rear Commodore Piers and Moorings' good judgement and discretion to manage the allocation of moorings in both Brucehaven and Limekilns Harbor's each season based on frequency of use, size of boat and draught (see Club Rules 11.3 and 11.4).

Argument for: Brucehaven Harbour is best suited for smaller boats (27' and under) whilst Limekilns Harbour has the capacity to moor larger boats. Implementing the existing policy of 27' maximum in Brucehaven Harbour, which has been in place for some years, would free up space at the front of the harbour and enable, in the longer term, the re-siting of moorings at the front of the harbour (see LONGER TERM OPTION 1).

Argument against: As evidenced by the survey there is a distinct lack of appetite amongst boat owners to relocate to Limekilns Harbour.

Recommendation: Confirm and implement a maximum boat length of 27' for Brucehaven Harbour as a policy position

SHORT TERM – OPTION 5 - NOT FILLING/REJIGGING EXISTING VACANT MOORING SPACES

17. This option seeks to secure more room in both the front and rear sections of Brucehaven Harbour by not filling existing vacant moorings.



Diagram B Sinker Grid showing front and rear sections

Diagram C Sinker grid showing occupied moorings as at Aug 2016

18. To support the visualization of this option a scaled grid (Diagram B) was created identifying the position of the existing sinkers and each mooring box referenced in the earlier Diagram A. Diagram C identifies the filled moorings as at August 2016 showing five vacant positions in the rear section and one in the front section.

A - Front of Harbour

19. The review team is of the view that the front of the harbour is congested making it difficult to pick up moorings in strong winds, particularly easterlies. Furthermore, the congestion means that if a boat gets into difficulties when picking up or leaving a mooring there are few, if any, “escape routes”. However, as things currently stand, there is little opportunity to free up significant further space at the front of the harbour. It is the view of the review team that this can only be addressed through longer term planning (see paragraphs 25 -31). In the meantime, the proposals described below go some way to easing pressure in column A.

20. Column A is close to the rocks. This is not ideal and it can be challenging and potentially dangerous to navigate in strong westerly winds. A1 is the Club Boat whilst A2, A3 and A4 are occupied by smaller boats with shallower draughts more suited to these positions. Mooring A4 occupies a position uncomfortably close to the rocks (where they curve westwards towards the harbour – see photograph on front cover of this report) making manoeuvring particularly tricky.

21. In order to create more space to manoeuvre around Column A and into the separating turning channel (between the front and rear sections of the harbour) it is suggested that mooring A4 should not be used. For the coming 2016/17 season position A4 has been vacated by agreement with the current occupier. Mooring space B1 has not previously been occupied but has been used to replace the loss of A4, although this does not help ease congestion at the front of the harbour.

Argument for: No-one is left without a mooring and additional safer manoeuvring space is provided close to the rocks in column A.

Argument against: This proposition will see the loss of a mooring space from the front section of the harbour.

Recommendation: Position A4, now vacated, should be removed as a future mooring option.

B - Rear of Harbour

22. Within the rear section of the harbour (i.e. north of the turning channel) members have suggested there are some challenges in manoeuvring through the channels, depending on wind conditions. Currently this section has five vacant mooring (C7, C9, C10, B9 and B10) and some of the rear-most boats are used infrequently during season. In order to alleviate some of these manoeuvring difficulties three vacant spaces could be transferred to the middle row (C6, C7 and C8) thus creating additional space for all but the rear-most yachts (see Diagram D below).

23. Moorings C6 and C8 are currently occupied but would be offered a relocated within Brucehaven in order to create this new manoeuvring space in the center of the rear section of the harbour.

Argument for: Minimum disruption and no-one is left without a mooring in Brucehaven. Should help to alleviate difficulties being experienced in windy conditions. 12 of the 15 mooring would benefit from additional space. The spaces to the rear-most section can be allocated to boat owners who are less likely to make regular use of their boats.

Argument against: Occupiers of Moorings C6 and 8 may not be amenable to any alternative mooring placement, albeit as previously stated mooring positions are allocated by the Rear Commodore Piers and



Moorings each season. Whilst every effort is made to ensure minimum disruption, occupying the same mooring position is not a 'right' (see Club Rules 11.3 & 11.4). This proposal also prevents the allocation of three vacant moorings and as such reduces the potential for increased membership and revenue.

Recommendation: Positions C6, C7 and C8 should not be re-allocated as mooring options and Rear Commodore Pier & Moorings should seek to achieve this no later than the start of 2017.

24. An alternative to the above is to free up moorings B7 – D7 creating a second and wider channel in the rear section. This will enable ease of access and egress for those yachts moored in front and to the rear of these spaces. However, two moorings B7 and D7 are currently occupied and would require to be offered alternative moorings that suit their use.

Argument for: Minimum disruption and no-one is left without a mooring. Should help to alleviate difficulties being experienced in windy conditions. The spaces to the two rear-most section can be allocated to boat owners who are less likely to make regular use of their boats. 9 of the 15 mooring would benefit from additional space. The spaces to the rear-most section can be allocated to boat owners who are less likely to make regular use of their boats. Whilst three fewer than the previous option few of the boats on the last two moorings are actually used with any frequency.



Diagram E showing 15 available moorings with 3 (B7, C7 and D7) unfilled

Argument against: only 9 moorings will benefit from this change whereas 12 in the previous option would benefit. The occupiers of Moorings B7 and D7 may not be amenable to any alternative mooring placement, albeit as previously stated mooring positions are allocated by the Rear Commodore Piers and Moorings each season. Whilst every effort is made to ensure minimum disruption, occupying the same mooring position is not a 'right' (see Club Rules 11.3 & 11.4). This proposal also prevents the allocation of three vacant moorings and as such reduces the potential for increased membership and revenue.

Alternative Recommendation: Positions B7, C7 and D7 should not be re-allocated as mooring options and Rear Commodore Pier & Moorings should seek to achieve this no later than the start of 2017.

LONG TERM -OPTION 1 - REDUCING ALLOCATED MOORINGS BY REQUIRING SINKER REPOSITIONING

25. Beyond contemplating an excavation of the rocks to the east of column A (a difficult and major undertaking) there is little that can be done practically to create a sufficiency of manoeuvring space while retaining the existing number of moorings in the front section of Brucehaven Harbour. This option therefore focuses on the desired mooring arrangement for the front of the harbour (where the larger boats are moored). It is an aspirational option and, if it is agreed, it would be used by Rear Commodore Piers and Moorings as a template for moving to the desired layout over a period of time

26. This option would create more space within the front section of the harbour (i.e. south of the turning channel) by:

- reducing the number of moorings within this section;
- creating additional channel width between the boats; and
- creating a wider turning channel between the front and rear sections of the harbour.

27. It is predicated on the number of occupied moorings at the front of the harbour being reduced from 14 to 9. Specifically, column A and row 1 would be given up and the resultant space created would be used to provide more generous mooring space for 9 boats (see Diagram F). Losing column A gives expansion room east to west, whilst the loss of row 1 gives north to south expansion room: a gain of approximately 15' of additional space between mooring boxes. Assuming the recommendation that the Club Boat is moored elsewhere there would be a real reduction of moorings for 4 boats.

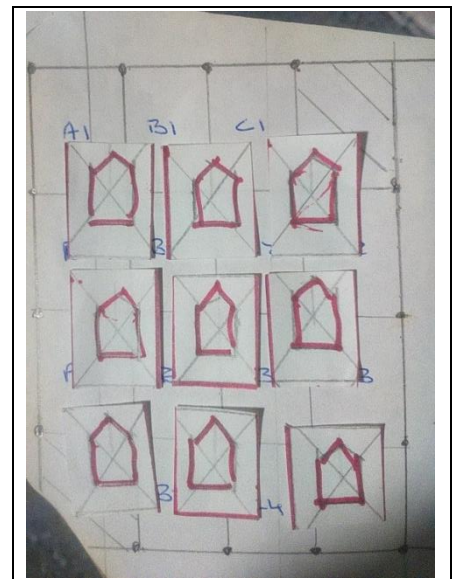


Diagram F showing proposed layout at the front section of the harbour

28. In order to achieve this layout, sinkers would need to be relocated and replaced. This would involve significant effort although this could be achieved incrementally and most likely as part of the winter work party activity. However, the review team is of the view that this would present an opportunity to move to a different physical mooring arrangement at the front of the harbour, namely laying down 4 rows of heavy ground chain (each running from east to west at the front and rear of the three rows and secured by sinkers at appropriate intervals). Individual moorings would then be secured to the heavy ground chain at front and rear. The heavy ground chain running east to west would be the responsibility of the Club and members would be responsible for the chain mooring their boats to the heavy ground chain. This is a similar arrangement to that employed at Aberdour.

29. Achieving this proposed layout at the front of the harbour would be a challenge but not impossible. It would be dependent on a number of factors:

- implementing the existing Club policy of a maximum boat length of 27';
- finding an alternative position for the Club Boat;
- reducing the current number of mooring spaces by 4 – this would likely have to be achieved over a period of time by natural turnover (since no member would be left without a mooring as a result of the recommendations in this report) although it could be achieved more quickly if the members concerned were to take up a mooring in Limekilns Harbour; and
- the Club finding the finances to fund the purchase of heavy ground chain.

30. In the time available the review team has not costed the purchase of heavy ground chain but it is likely the costs would not be insignificant. However, it may be possible to buy suitable chain as scrap thereby reducing the costs or, alternatively, lay the chains in stages when funds become available. If members are attracted by this proposed method of mooring the review team can work up estimates of costs.

31. If the cost of chain proves to be prohibitive yet members feel that securing of additional space is of merit, then a more cost effective but labour intensive option is for the re-siting of the existing sinker arrangements to accommodate this layout.

Argument for: Safe manoeuvring space would be achieved at the front of the harbour. A system of mooring based on heavy ground chain would provide significant flexibility in reconfiguring the mooring layout if this was deemed necessary in future years. It would also have safety advantages in that members will be able to easily (a) secure their mooring shackles to the heavy ground chain (i.e. there would no longer be a need to dig down in the mud to sinkers) and (b) inspect their mooring shackles for wear since they will all be above mud level.

Argument against: 4 moorings would be lost with their associated income and a new home would be required for the Club Boat. New and potentially significant costs would be incurred at a time when there is pressure on Club finances.

Recommendation: If more generous and safer manoeuvring room is to be achieved at the front of Brucehaven Harbour then it is the view of the review team that this is the best option whilst minimising the number of moorings lost.

RECCOMENDATIONS OF THE REVIEW TEAM

31. Diagram G and H opposite shows the proposed layout options of the moorings at Brucehaven Harbour if all options within this report were to be accepted and adopted. 32 moorings would be reduced to 24 moorings: a reduction of 8. It should be noted that as at Aug 2016 only 27 places within Brucehaven harbour will have been allocated - only 3 more than required to achieve the proposed target of 24 moorings.

32. The review team is of the view that there are too many boats in Brucehaven Harbour and consequently there is a risk of boats getting into difficulty while manoeuvring within the harbour, particularly in strong winds. This risk is sufficient to deter some skippers from taking their boats out in more challenging conditions.

	
Diagram G showing full proposal first rear proposal option	Diagram H showing front and alternative rear options

33. The review team believes that the Club should actively address this issue. Doing nothing is not an option.

34. This report makes a number of recommendations to improve space and maneuverability within the harbour. It is recognized that some of them will be easier to implement than others. The recommendations are:

- ensuring mooring chains and strops are of the correct length and comply with the guidance set out on the Club website.
- skippers to be required to deploy fenders at all times when entering and leaving the harbour.
- the existing policy of a maximum boat length of 27' for boats moored in Brucehaven Harbour should be restated and implemented Limekilns Harbour is considered more suitable for boats above this length.
- creating additional manoeuvring space at the rear of the harbour i.e. north of the existing turning channel, by not allocating mooring positions C6, C7 and C8 or alternatively not allocating moorings B-D7 as per mooring layout shown in Diagrams D & E
- creating additional manoeuvring space at the front of the channel by losing column A and row 1 and adopting the mooring layout shown in Diagram F and based on a new mooring system of heavy ground chain.

35. The review team wishes to make clear that no member will be left without a mooring as a result of these recommendations. The team also recognizes if these recommendations are accepted there will be a loss of 8 mooring spaces and consequently a drop in membership levels and subscription income. However, there are a number of existing vacant moorings at Limekilns harbour and opportunities to expand the moorings at Limekilns exit. It is therefore the view of the review team that the Club's priority should be the safety of crew and boats and that concerns about membership levels and funds are of secondary importance.

Keith McDevitt

Rear Commodore Piers & Moorings

August 2016.