

CHOOSING RIGS

for Ten Rater class yachts

introduction

The unrestricted nature of the class rules and the relatively large number of rigs permitted in this class can mean that the cost of providing rigs for a competitive Ten Rater can exceed the cost of the hull. However the size and stability of the boats and tradition in the class seems to suggest it is possible to enjoy competitive sailing with only 3, 4 or 5 rigs.

As the rigs are often retained for further use when the yacht is replaced, it makes good sense to carefully consider their choice.

Correct choice of rigs at the planning stage will help to make your yacht more competitive over a wide range of conditions and maximise your benefit from the expenditure made.

first steps

Understanding the limitations in the class rules

The class rules require that the largest mainsail and largest headsail are measured to determine their surface area.

An unlimited number of alternative mainsails may be owned and used providing each is smaller than the measured mainsail.

An unlimited number of alternative headsails may be owned and used providing each is smaller than the measured headsail.

All the sails need to be certified by an official measurer before use.

where should you start?

Consider how many mainsail/headsail pairings (rigs) you intend to finish with

Your decision about **how many rigs** will have a bearing on which **size rigs** those should be and, if you do not wish to start by buying all of them, **which rigs should be purchased first**.

Most competitive Ten Rater owners will have 3 to 5 rigs. Some will have more than this especially if they are travelling regularly to major open events and do not wish to be let down by not having small enough sails.

Many owners manage very well with 3 rigs. If you do not plan to sail at major events and are prepared to spend time sailing with the wrong rig, or not sailing because you do not have small enough sails, then as few as 2 may suffice.

Having only one rig will probably mean you often cannot sail competitively, and may be a significant danger to other boats in high winds due to lack of control.

swing rig or conventional rig?

Swing rigs

Although these offer the advantage of lower cost for a given level of quality because of their simplicity they do not seem to have caught on in the Ten Rater class in Great Britain.

Currently we do not have swing rig kits suitable for Ten Raters but are able to supply parts and sails should you wish to construct your own design of swing rig.

Conventional rigs

True conventional rigs with shrouds, spreaders etc are now rarely used by the better placing competitors. They have been replaced by the so called **shroudless rig**. This is simply a normal Bermuda mainsail/headsail rig with a very stiff mast which does not need shrouds to hold it up.

In an attempt to save keep weight low and rig performance high it has become normal to add shrouds and spreaders for the tallest rig only. The tallest rig has to work well in very light airs and so a pocket luff mainsail is not a practical proposition. The addition of shrouds and spreaders is not a problem.

Recent developments

For some years now SAILSetc has been making pocket luff mainsails that are well shaped and comparatively wrinkle free when the sail is twisted off. The pocket luff sail generates less drag than alternative attachment methods and the result is a closer winded, or faster, boat.

Choose a pocket luff mainsail for the B rig and lower rigs where the extra weight of sail does not prevent the sail from working well. The snag with these sails is that they cannot be rolled for delivery and have to be sent packed up like completed rigs. If you are having completed rigs this is not a problem of course. We are looking for a neat solution to this problem.

Whereas lower rigs perform far better if pocket luff mainsails are used, the tallest rig has to work well in very light airs and the extra weight and stiffness of the pocket luff is too much of a handicap

The use of pocket luff sails accentuated the need to have the centre of rotation of the main boom coincident with the centre of rotation for the mainsail i.e. on the centre of the mast. We developed gooseneck 12b to provide this. Use it with pocket luff mainsails for best results.

which size rigs are recommended?

Ten Rater Series Sails

The rig kits we supply match and include sails from the SAILSetc Ten Rater Series. This provides a number of mainsail/headsail luff choices and freedom to choose the ratio of mainsail to headsail area. Page 11 of the catalogue shows how to determine the sail sizes. The document MIT 22 details the way sail sizes can be chosen.

However, if you want custom sail sizes with your kits these can be provided at an additional charge.

No 1 RIG

The conventional shroudless No 1 rig (we suggest using with shrouds and spreaders) listed on page 10 of the catalogue is an ideal choice and is capable of giving excellent results in light airs as well as a breeze.

No 2 RIG & LOWER RIGS

The shroudless rigs listed on page 10 of the catalogue used with either eyelet luff or pocket luff mainsails.

COMMON OPTIONS

'Specials' headsail on No 1 rig.

'Specials' mainsail and headsail on No 1 rig.

Shrouds and spreaders with a No 1 rig.

Ball raced goosenecks may be included in the conventional shroudless rig kits.
Ball raced gooseneck with axis on the mast centreline, item 12b, is a useful refinement.
Ball raced head & tack fittings, items 23g & 23k, on conventional shroudless rig kits.
Flat wire for standing rigging instead of round wire in all kits.

Pocket luff mainsails on all No 2 and lower rigs – cannot be rolled for delivery.

SIZES OF RIGS

The following mainsail luff selections, although not necessarily the only possible combinations, will give good coverage of wind speed range and excellent performance in a wide range of conditions.

3 Rigs

| | | | |
|------|------|------|------------------------------------|
| 2000 | 1700 | 1400 | good coverage of wind speed range |
| 2000 | 1800 | 1600 | better for more common conditions |
| 2100 | 1900 | 1700 | as above but better for light airs |

4 Rigs

| | | | | |
|------|------|------|------|------------------------------------|
| 2000 | 1700 | 1400 | 1100 | good coverage of wind speed range |
| 2000 | 1800 | 1600 | 1400 | better for more common conditions |
| 2100 | 1900 | 1700 | 1500 | as above but better for light airs |

5 Rigs

| | | | | | |
|------|------|------|------|------|---|
| 2000 | 1700 | 1400 | 1200 | 1000 | good coverage of wind speed range |
| 2000 | 1800 | 1600 | 1400 | 1200 | better for more common conditions |
| 2100 | 1900 | 1700 | 1500 | 1300 | as above but better for light airs |
| 2100 | 1900 | 1700 | 1400 | 1100 | for light airs but covering top end too |

MEASURED SAIL AREA and PROPORTION MAINSAIL & HEADSAIL

Our Ten Rater shroudless rig kits use Ten Rater Series sails as standard components. These are available with mainsail luff lengths of 2100, 2000, etc down to 1000 mm. Headsail luff lengths are designed to give a 4/5ths fractional rig.

Any total measured sail area and common mainsail/headsail proportions can be achieved to provide a rig that will maximise the rating of your boat and balance the helm as required. The document MIT 22 details the way sail sizes can be chosen.

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