



## Setting up your FD to go sailing

The FD is a complex and powerful dinghy and getting the boat set up correctly for the prevailing conditions makes all the difference between the boat flying along and its being a pig to sail, especially to windward.

It is important, therefore, that the significant controls are readily adjustable by the helmsman whilst sailing, so that he can fine tune the rig without losing way or control.

Of course, all the usual boat turning and preparation rules apply to the FD as to any other performance dinghy. Get the centreboard and rudder vertical and in line; get the mast central and upright in the boat; make the mast a tight fit in the step and partners etc. However some aspects of the FD are a bit special so try this way of sorting boat out and getting set for the race.

### Set up the genoa:

The most important control of an FD is the genoa halyard, controlling the mast rake. This needs the purchase of at least 24:1 led to either side of the boat for the helmsman to adjust while hiking. A courser adjustment, say 6:1, is also ideal for changing between the different clew attachment positions available in modern genoas.

We use a 6:1 purchase on the back face of the mast which hooks up to the genoa halyard. One end of this goes directly to a clam-cleat for the course adjustment and this marked with a position for each clew.

The other end goes to 4:1 purchase running along the boats centreline and led to each side. Total purchase available,  $4 \times 6 = 24:1$ .

Because the genoas are designed to fill the triangle made up by the tack, halyard and sheet block positions completely, the amount that the genoa leech twists open has to be controlled by the mast rake.

If the mast is too upright (halyard too tight) the genoa leech is too closed and too close to the mainsail. This makes the boat overpowered, heel a lot, backwind the mainsail and go SLOW!

Having too much rake (halyard eased too much) is not as disastrous but the genoa leech will be too open, the boat underpowered and it will not point as high as the opposition.

Unfortunately, not all sailmakers use the same genoa dimensions, so the correct rake for a given set of conditions will vary from genoa to genoa.

The window position near the spreader height in modern mainsails is a great help in judging whether the genoa leech is setting correctly.

Having established the correct rake for the wind and sea conditions, you need to take up the slack and tension the spouls, so the helmsman also needs to be able to



adjust these from his steering position. Again a total of 24:1 purchase led to each side seems to be about right.

Exactly how much spoud tension is required will depend on the mast and sails that are being used. Of course, you should also remember that the older boats cannot withstand the tensions used on some of the modern ones. At least take up the slack that you can see in the leeward spoud when sailing to windward.

Genoas with a very fine angle of attach at the luff need no more than this, but fuller fronted sails may need quite a lot more spoud tension if you are not going to lose pointing ability. Vogel Meier, Lucas and Velus Ullman genoas tend to fit in the first group, whilst Hyde, Diamond and Dan generally need more tension.

### Choosing the Clew Position

Which clew to use depends of the wind strength. There is no doubt that raking the whole rig aft more as the wind gets stronger IS FAST! Of course, having chosen the clew position, you then have to adjust the rake further to set up the correct amount of genoa leech twist, with the sheets attached at that point.

When you change from one clew to another, the fore and aft position of the centreboard and the lower spoud tension, in particular will also need to be altered.

If the centreboard position is wrong the boat will be unbalanced and hard to steer. Forgetting to adjust the lowers will either allow the mast to bend too much or could invert it, either of which could lead to a broken mast!

As a rough guide use:

- Clew 1 — 0 to 12 knots
- Clew 2 — 10 to 16 knots
- Clew 3 — 15 to 20 knots
- Clew 4 — 20+ knots

Modern boats do have some vertical adjustment for the genoa sheet turning blocks. These enable a certain amount of adjustment of the genoa leech without altering mast rake. This can be very useful in gusty conditions so that the boat can be set up with maximum power for the lulls and the genoa leads eased up comparatively easily in the gusts.

When up they also enable the rig to be set more upright in the lightest winds, which again seems to be faster and to give the helmsman a bit more feel in those conditions.

Not having this extra adjustment on your boat is not the end of the world by any means, but they can be a great help.

### The Mast and Mainsail



Like any dinghy, the FD's mast needs to be tuned to suit the mainsail you are using. However, with spreader adjustment and lower spouds which support the mast at gooseneck height, even quite flexible mast sections can be held pretty straight fore and aft if necessary. This has enabled us to use one mainsail throughout the wind range where before a special heavy mainsail was needed to cope with the inevitable mast bend.

It is important to keep sideways mast bend to a minimum even in strong winds. The side bend is controlled by a combination of spreader length and spoud tension. The less rig tension you see, the longer spreaders you will need. The softer your mast section sideways, the more critical this combination of control will be, as it will bend more easily under the compression loads of the rig and be more difficult to keep "in column".

Keeping the mast straight fore and aft, especially with a flexible section, may make it prone to inversion due to the compression load of the spinnaker pole on the close reaches. This has led to the use of some basic prebending systems at decklevel which the helmsman can pull on for the reaching legs, or in very light airs when a little prebend can help the mainsail leech to open.

The Proctor Nimbus and Superspar M7 are the most flexible of the currently popular sections, and the Proctor E is a bit stiffer and the Superspar M5 the stiffest used in top competition these days. The Proctor Gamma is considered a bit of a tree trunk but will still be seen giving good service on some boats. There are also successful Z spar and Needlespar masts around but it is best to check exactly which section is being used.

You have probably realised that the lower spouds are very important in controlling the mast bend. You need at least 8:1 purchase on these, probably 12:1 is more common and easier to adjust in use.

The kicking strap or vang is not such a powerful control on the FD. This because FD sailors generally use the mainsheet to control mainsail twist when sailing to windward, playing the traveler continually. In these circumstances the vang is usually overridden by the mainsheet, but it is important downwind. 8:1 will do for the kicker but you need to be able to adjust it easily.

### Centreboard Position

As you change from using one clew position to another the rake changes the fore and aft position of the Centre of Effort of the rig quite dramatically. It is essential to move the Centre of Lateral resistance in order to balance this effect, and this means moving the Centreboard pivot fore and aft or raising the board, which pivots it further back.

Using Clew 1, the board needs to be as far aft as will allow it still to be raised into the box, or maybe 15mm further back. Changing to Clew 2, move the pivot aft 75-100mm, Clew 3 90-150mm, above that rake the board aft to reduce the area as well. It is generally felt that the board need to go further aft in waves compared with flat water settings.



DO NOT FORGET to move the centreboard forward again before you go ashore, otherwise you cannot get it into the box and the boat or board or both will be damaged.

## Summary

We are now getting to the point where you can go out and practice setting the boat up for different conditions. A turning partner is ideal, but you can usually sail against another boat before a race if you are out in the racing area good and early, (which of course you always are!).

In general, if you are pointing below other boats the genoa leech is possibly too open (too much rake); but if you can go high but are overpowered and slow the slot is too closed (mast too upright).

Other tips include watching for diagonal creases from mainsail clew to the lower part of the mast, which shows that the lowers are too slack.

So, here is the order for setting the boat up:

1. Choose clew position
2. Set course genoa halyard setting
3. Set approximate lowers tension (after launching)
4. Move centreboard aft if necessary
5. Take up slack in spoude sail to windward
6. Fine tune the genoa halyard
7. Tension spoude
8. Set mainsheet tension
9. Tension cunningham
10. Check lowers, centreboard position
11. GO VERY FAST
12. WIN (but most of all have lots of FUN!)

## WHICH SAIL TO USE

**Note from Webmaster** - This section was produced in 1993 and is published for the benefit of those with old sails and in the hope that an FD sailor or sailmaker(s) would like to spend some time updating this list for the benefit of FD sailors around the world. A larger spinnaker was introduced in 1993 and so the information relates to spinnakers pre the new rules.

Here is a detailed selection of sails from which you may select any number of combinations to power your Flying Dutchman. You too can become an expert quoting codes to friends in the bar!

SAIL	CODE	PURPOSE	REMARKS
Dan Main		All round	Needs Proctor/Z spar

## FD Trim



Genoa	X-2	Bft 0-4	Good all rounder
	X-3	Bft 0-6	
	X-4	Bft 4+	
Spinnaker		All round	

### Diamond

Main	DMU 9/10	All round	10 is fuller than 9
Genoa	DG1-4	Bft 0-4	Leech 5.3-5.05m 3 cringle
	DG2-7	Smooth water 3-6	
		Choopy sea Bft 4	Leech 5.25-5.0m 3 cringle
Spinnaker	DC3	All round/reacher	Silicone finish

### Hyde

Main	1.5C+	All round/good gusts	Needs little trimming
	2D	Smooth water - all round	
		Waves Bft 3+	Flat
	2E	Powerful/heavy crews	Needs good mast control
Genoa	1A	Bft 0-4	
	1B	Bft 0-4	Light cloth
	1C+	Bft 0-4 (min rake)	3 cringles
	1CR+	Bft 3-6	3 cringles. Rake 4-18cm
	2H	Medium-heavy	
"compensator"			
	2CR+ (3.8oz)	Bft 3-6 Rake +	Better than 1CR+, points+
	2CR+ (4.5oz)	Bft 3-6 Rake+	Long laster in strong wind
Spinnaker	2B Polyant	All round	
	2B HST 22	All round	
	2B Stabilcote	Light winds	Not easy in chute
North			
Main	LM1	All round	For Z Spar
Genoa	LM3 (Fogh)	Bft0-4	Good in chop 3 cringles
	MH2 (Fogh)	Bft 4+	Max rake, multi cringles
	K1 (Wagner)	Max Bft 4	Normal rake, 3 cringles
	KRR(Wagner)	All round	Rake +, 2 cringles
Spinnaker	True radial (F)	All round	.75 oz
	Tr rad light	Light winds	Leeches .75oz, mid .50oz
	M2 (Wagner)	All round	
Crosscut, good in chute			

### Vogel Meier

Main	AB9Z	Light medium
	CD4	Medium+
	P7	All round
Genoa	PLa	All round
	L1	Light

### Notes:

Commonly codes remain the same although the sails may change over the years. For example a standard 1988 Code 2 genoa will not necessarily be the same as a standard 1992 Code 2 genoa. If you want the same sail as you had before specify "may 1990 code 1a".

### Ideas for improving the buoyancy of boats with half double bottoms.

These ideas have been incorporated into FD K327 as a result of many capsizes both on the sea and on inland waters where the boat inverted with the stern low in the water and the bow high, becoming even higher as the boat came through 90o to lie on its side.

## FD Trim



### Mod A:

Fit buoyancy bag across stern under after deck. Fix webbing strap fittings/fixings so that the bag is held firmly to underside of deck - not to the floor of the boat - so when inverted maximum buoyancy is obtained.

### Mod B:

Fit buoyancy bag 48 in. long under the foredeck along the centreline of the boat between the mast and the genoa furler, again fix it firmly to the deck not the floor.

### Mod C:

Make up poly-propylene line with large spliced eye at both ends, it needs to be about 3 m long and 12 mm in diameter. Secure a plastic ball (about 3 in. diameter) in the middle of the line, it must be able to pass through the eyes. When capsized secure line around spout at deck level, lie back and heave!

As the boat capsizes try to release the kicking strap and genoa sheet as well as the mainsheet to reduce the under water drag when righting the boat. If you have the spinnaker up when you go in pull it down with the boat on its side.