

# ***SWORD***

*A Class design by SAILSetc*

## *background*

The 2005 world championship for the class prompted us to look carefully at all our previous designs for the class during 2004. Experience of how the FRIGATE design had performed against other top designs during the previous years was especially useful.

The wind speed range expected at the Gosport venue for the world championship was 2 - 10 knots (in fact this was the case) so special emphasis was placed on performance in these conditions. Nevertheless it was felt necessary to provide excellent performance in heavier conditions and so the main parameters for the design were pitched not so far from the existing norm for the class.

## *design development*

The new design is not a development of FRIGATE but has a hull form developed from other successful solutions in the class. The effect of overhang design was carefully studied as was the choice of beam to depth ratio and waterline length and displacement. In fact around 45 different hull and hull/rig combinations were compared before arriving at a handful of designs between which there was little to choose in terms of predicted performance. The choice between them was then based on the likely suitability of their handling characteristics.

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## *performance*

The first boat out of the mould was built for Gerry Gray and was due to sail at an early 2005 race at Hampton Court. Circumstances did not permit this so the first outing for the design was when Gerry's and Graham's boats raced at Fleetwood a month later. They finished 1<sup>st</sup> and 2<sup>nd</sup> after a day of light airs sailing.

The next opportunity to sail them, this time joined by Phillip Playles's boat, was at another PRACC series race at Gipping Valley. Although Gerry had some rc problems, the other SWORDS finished 1<sup>st</sup> and 2<sup>nd</sup>.

The opportunity to sail the boats in these fleets showed we needed to adjust the mast positions to get the balance spot on.

Graham's boat was lent to Roy Pearson to use at the Veteran's championship which he won after a couple of days of racing in stronger winds.

All four of the boats completed before the world championship were used at the event. Phil Playle was unable to use his own boat as he had badly damaged his hand earlier in the season so it was chartered by Ken Binks for the event. Even though Ken had not sailed the boat before he went on to place 2<sup>nd</sup> with Graham taking top spot.

## *statistics - approximate*

Length over all	1950 mm	Length on waterline	1250 mm
Sail Area	1.05 m <sup>2</sup>	Displacement	16 kgs
Ballast	13 kgs	Draught	300 mm
Maximum Beam	350 mm		

## *construction*

As is usual we make the mould so the hull is moulded as port and starboard halves which are joined using a tape down the centreline.

Standard lay-up is 125 CF + 280 CF.

A fin box/mast tube moulding is bonded to the underside of the centredeck and a foredeck beam with a recess for the headsail attachment fittings is added in the bow. There is a tube for a long line swivel for the No 1 rig thus permitting really free tacking and gibing of the headsail.

### Deck option 0

The centredeck unit incorporates the RC pot and winch/servo. A self adhesive patch covers the area while sailing.

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The advent of low power consumption sail control units and really high capacity batteries has led us to conclude that a screw top pot set in the deck is no longer a necessary feature. Instead the batteries and receiver are contained in the same pot placed in the boat and accessible via the self adhesive patch which covers the winch and servo. A waterproof switch to be placed in a safe place is provided as part of the Fittings Pack.

#### Deck option 1

For those who prefer a pot accessible from the deck then we have developed a deck moulding, item 311g/h.

See the Specification for fuller details.

## *rigging*

After the 2004 season we re-evaluated the design of the rigging and fittings for yachts as large as A Class and produced a re-specified kit of parts for an A Class rig.

The mast is 15.4 carbon GROOVY and the booms are 14 mm and 12 mm carbon tubes for the main and No 1 headsail respectively. The gooseneck is a substantial unit with ball races and incorporates a 2 speed kicker with a 4:1 lever that is ideal for rc adaption. The backstay crane is a moulded carbon/epoxy item.

Bent joiners are options for the headsail booms and permit the headsail to be used closer to the deck. It is possible to use alternative headsail booms for the lower rigs and these would normally be of 14 mm diameter. The joiner for the 14 mm diameter headsail boom is a substantial carbon moulding.

The attachment of the No 1 headsail boom is made to an eye tied to a piece of cord which is attached to the bottom of the hull in the bow. The cord is placed in a tube to keep the hull watertight. Other headsail booms are designed to be attached using the ball raced swivels we have developed for larger boats.

Boom bands are now stainless steel items making the whole rig capable of withstanding the large loads that occur when the boat is used in high wind speeds.

If you want to order rig and sails please see our Rig Specification and Rig Order Form.

## *foils & ballast*

In 2004 we tested a new ballast on FRIGATE and found it to be a marked improvement on previous designs so a ballast pattern to the same design has been made that is suitable for SWORD. We found the fin we had been using since 1996 for A and 6M class could be improved on so a new metal mould was made. The new deeper and narrower rudder we planned for the IOM, M and 10R classes could also be used for this application.

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## *specification and prices*

Please see the our A Class Boat Specification and Boat Order Form.

## *ordering and payment*

You can specify the boat you want by completing the Boat Order Form.

For e-mail customers this is an active spread sheet that allows you to learn about the options and see the cost, and other, implications of the choices you make.

For customers unable to use the Boat Order Form please tell us what you want and we will complete a copy for you. This will be posted to you to sign and return to us.

Confirm your order by sending us a signed copy of the Boat Order Form. This provides us with confirmation of what you have ordered. The specification of your boat can be altered at any time up to production time by submitting a revised and signed Boat Order Form.

Our normal practice is to take a 25% payment on submission of your Boat Order Form. This reserves your spot in the queue. If you are unsure of the final specification details it is worth getting in the queue and deciding the details later.

Another 25% will be taken the week we start to mould the hull, 25% the next week and 25% the next week.

## *colour*

Once you are on the list you will have time to decide the colour scheme which will be restricted as usual. The hull and foredeck will be all one colour. The deck unit can be the same or another contrasting colour.

**end**

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