

RS has been building the RS700 since 2001. Not much has changed to the build spec over the years, some strengthening here and there but nothing major. The hull and deck tooling has certainly stayed the same. 16 years later and over 350 boats built the tooling's were showing their age. Before the next batch of boats were built I thought it was a perfect opportunity to invest some time and effort to refresh the boat and to show our support to the class. We hope that current owners will be excited by the result and that current sailors and new to class will be encouraged to buy new boats. It's worked as we have now sold the first batch of boats built this year and now half way through the second batch due to be built in the autumn.

RS has over 20 years' experience building an increasing number of different boats, from our humble beginnings we've learnt a lot. The RS Aero was the opportunity to bring that experience to bare on a new product in a fresh new way. We have reason to be pleased with the result, and now the RS700 is getting a bit of that fresh thinking.

OK, so when I say fresh, it's going to be the same old RS700 that we have been sailing for the past 16 years. Just so there is no jumping to the wrong conclusions, the boat is being made from the same original tooling, (well it's been repaired and polished a bit/a lot and minor repairs have been done). The boat will weigh the same, and the performance will be the same as the boats built last year and the year before that.

The changes are essentially about improving the quality, attention to detail and enhancing the pleasure of ownership. Having said that, some of the changes address some of the annoying structural and water ingress issues that crop up every now and then, not major, just really annoying to the customer.

#### 1. Update to the basic laminate spec.

Although there have been changes over the years as the builders have changed and structural issues have emerged, a relook at the laminate spec was probably overdue. It's about moving with the times rather than any obvious problem.

However, there are some areas that would benefit from improvement/strengthening, which means adding material (or changing the material) therefore probably adding weight. The heavy traffic areas, the cockpit floor (there have been some instances of repairs needed) and the side

decks, particularly where we kneel to pump the spinnaker (there have been more instances of delamination in older boats than I would like) have been strengthened.

We have learnt, particularly from the Aero that strengthening the perimeter of the boat, creating a frame around the gunwale adds a lot of rigidity to the overall package and for only a small weight gain. This means adding additional tape to the gunwale area of the both the hull and deck mouldings. This is about extending the life of the boat and eliminating potential laminate failures down the line.

The hull and deck moulding are of a foam sandwich construction. The foam sandwich that is currently used is a cross cut material. The cross cutting allows the foam to be easily pressed into complex hull shapes. It absorbs a lot of bonding material (therefore weight) that gets into the open cuts as the foam is pressed onto the hull during vacuum process. The RS 700 does not have many super curved surfaces so the decision is to use uncut foam which will need less heavy bonding material should save the weight added by the laminate changes elsewhere.

There are a few other minor changes but they are generally about the build efficiency.



## 2. Changes to the build process to improve the laminate print though or shrink back.

Some boats tend to be better than others in this respect. Although the boats have always been “cooked” while they cure in the mould, ambient temperature, humidity and time in the mould effect how stable the laminate is later in life.

The higher the temperature and the longer the hull and deck are left in their moulds the more the shrinking and consolidation of the lamination will occur during the initial curing stage while still in the mould.

New boats will be post cured “in the moulds” for longer and at a higher temperature in a specially constructed demountable oven. This will significantly reduce the “out of mould” post curing. It should, as a result significantly reduce the appearance of the texture of the woven laminate and the cross-cut foam core that we sometimes see, particularly on the hull.

You might be one of those folk who never turn the boat over or ever clean it, so you might not know if the laminate texture has surfaced or not - ignorance is sometime a virtue. However, should you get yourself a new boat the print through should be so much better, if there at all.

## 3. Tooling improvement to eliminate the main sources of leaks

The most common leak points apart from the breather hole, tend to be around the U bolts, both front and back, the forward spinnaker pole strap and the Dagger board case.

With respect to the U bolts and pole strap, the tooling's have been reengineered to ensure that the fixing holes will not cause leaking into the hull void. This has been happening when the holes are drilled or later should the holes get larger as the U bolts move under load.

New boats will also have a collar fitted to allow the U bolts to be tightened onto the wing bars without the shroud fixings damaging the wing tube.

## 4. The Dagger Board Case

The dagger board case has also been a source of leaks in a few boats. Leaks here can be more difficult to fix easily.

I felt that the overall design of the current dagger board case was not up to the quality RS aspire to. It is a slightly awkward fit (when the hull and deck are being bonded together) and the clunky way the board fits into the slot is not satisfactory. It all works, it just could be better.

A question that has given me cause for thought is that the RS700 was originally designed with the view that the rig would be raked back to depower in strong winds and so, in order to maintain balance, the dagger board needed to be able to pivot back as well. Many have tried and all have failed to find that raking the rig gives any benefit, so no one does any more.

Is there need for the board to be able to pivot?

Raking the board back in strong winds can bring some benefit (some would say) maybe because it makes the board less efficient, it generates less lift, and if we are overpowered, lift is unwanted heeling force.

The downside of allowing the board to rake, if the rig stays put, is that it changes the balance of the boat. Ideally the most efficient mode of sailing to windward is with a touch of weather helm, it maximises the lift generated from the rudder. Allowing the board to shift back shifts the balance to either a neutral helm or lee helm.

A second downside of allowing the board to rake to reduce lift is that while the lift is reduced the drag is the same. It is much more efficient, if reducing unwanted lift is the goal, to simply to raise the board which gives you reduced lift and reduced drag.

So (probably) raking the board back is making the boat a little more difficult to sail.

One final consideration is that if the board is allowed to rake even just a bit, it tends to pivot on the bottom back corner of the case which in time starts to crack and split the rear of the case and cause damage to the board and the boat.

A simple straight dagger board case (set at the same angle as the current board, if it were held to the back of the case with shock cord) would be a much better solution. And give far better support for the board.

I have replicated the Aero arrangement. The Aero has a fully lined (at top and bottom) straight case. The trailing edge of the board is supported along the entire length of the case by a plastic strip and the board can be lowered and raised easily to depower and lift out in a hurry. Overall it looks and feels much cleaner and operates more efficiently.

There will be a foam packer available for the older boats to keep the board in the upright position, if they want to, and RS will supply this F.O.C

A final consideration is that the current board is very expensive and it can take time to get stock. Other than for new boats, RS will not sell many (or any) spare RS700 boards so there may be times when we won't have any in stock. I would like the option of using the RS Aero dagger board for the RS700 and it may become a necessity at some point in the future. It makes financial and stock management sense for all to migrate to the Aero board sooner rather than later. This would have to go to a vote and perhaps a trial can be initiated with feedback before moving forward on this.

It would be an option to use either the Aero board or the current board in the new straight case. Some repacking of the case may be necessary depending on which board the sailor chooses to use.



## 5. Rear inspection hatch

There is already a new rudder stock, a new rudder blade with carbon trailing edge and new transom fittings. You know all about that that from the dinghy show.

Partly driven by the desire to be able to bolt the transom fittings to the hull but equally the desire to be able to properly dry the boat. We have redesigned the transom post to be able to fit a small removable hatch, the same as the 200.



## 6. Other changes to increase overall quality and feel.

- The stainless tack bar has been redesigned to allow the pole to be stowed under the bar. It's a bit random at the moment you can on some boats and not on others. It will also fit better in the deck recesses and make the mouth a little wider which cannot hurt the spinnaker retrieval.
- Carbon wear pads will be fitted under the spinnaker sheet ratchet block to save the damage to the deck. Carbon collars are now fitted under the front wing bar U-bolts as already mentioned (see picture 3)





- The holes through the gunwales that take the trapeze elastic and the elastic away from the front of the wing tubes will have neat little bushes fitted, as per the Aero. It will save on wear and look neater. (see picture 4)



- There will be some refinement to the placement of the spinnaker pump cleats and other fittings to allow the halyard to cleat effectively while minimising friction.
- Directly under the port forward wing tube where the spinnaker sock is open, the deck surface is finished in the non-slip texture. Hindsight is a

wonderful thing but this causes wear on the spinnaker and adds friction. Now, with the benefit of that hindsight, it has been changed to a smooth finish.



- The new Gooseneck is now being supplied, this will reduce the breakages of the old type as it is significantly stronger. There is also a kit available to retro fit your existing gooseneck.





- Spreader inserts. All new spreaders being supplied on new boats, now come with nylon inserts to remove any corrosion between the stainless-steel bolts and the aluminium spreader. This can also be purchased as a kit for updating your spreaders.



- The rig tension and kicker cascade has now got the extra allowed purchase system as standard.



- New rudder stock and fittings to allow the rudder blade to pivot 180 degrees to help launching. (See picture 10)



- New standard fit out will incorporate all the must haves from stay-masters, tapered halyards etc.
- We are looking into different purchase options for the customer. Many people like to fettle and customise their own boat within the rules, and some like to have an out of the box ready to race product, depending on budget and desire. From September, we will be giving customers the option to buy the RS700 in different options: - (Prices will be ready by the nationals 2017)
  - Different hardware and rope options.
  - A fitted hull (all blocks screwed to the deck) with racks on. No running rigging attached but supplied. No foils fitted but supplied, no spars rigged but supplied, options with or without sails.
  - Full ready to race calibrated option, 100% rigged ready to sail without any customisation needed by the customer.

- Finally, as boats that are pre-ordered can be made in any colour (at a cost).



I think these changes will make the boat a better product but at the same time I think current owners should not feel disadvantaged. Perhaps we should not be too concerned about making new boats just a little better as long as it's about quality not performance. As a class, we all want to be excited about buying a new 700, existing owners and new owners alike.

The same just better.

I would like to invite all Rs700 competitors who are doing the RS700 Southern area Champs at HISC next weekend for a informal chat around the new boat, RS will supply some Beer!) so I can go through all the changes we've done and why. Also, keen to hear other options for future proofing and increasing the quality of the product we give to our customers.