

DROITWICH SPA MODEL BOAT CLUB

CREW'S NEWS

SPRING 2020

Happy New Year everyone. I wonder what you guys have been up to over the winter period?

In this edition we have another build from Nigel Dale, our Welsh correspondent, last year we saw the start of his build of the Viking Knarr, he started this build by a cunning purchase of a wooden slat blind from a charity shop, Pat, his wife, said "What have you bought that for?", little did she know that in the fullness of time a RC boat would appear.

I've been busy as well, with the help of Nige Dale I have completed the build of Rosa, an Essex Smack, Brian Waters built the hull, but Brian is not really a lollypop stick and hankie fan, so passed it on to me, I have really enjoyed finishing it off, my good lady wife made the sails, Jenny Blackall supplied the Egyptian Cotton sail material, large bowsies from Jotika I tried to use the sewing machine, but found it had a mind of its own. So it was down to my wife Pat to make the sails. It sails really well and with the help of a small monoperm motor I can get out of trouble quickly. Photos on Page 2 in the newsletter.

A new assistant has joined the throng, Robin, seems a very nice chap, a bit green around the gills, but very helpful See his photo later in the edition on Page 3.

It was suggested that in addition to the yacht sailing at University Lakeside that we also try our hands at Club 500 racing, this type of racing is done by many clubs in the UK and so the committee thought we would also give it go.

A wonderful build report on a Club 500 has been done by Tony Draper and is included in this edition.

My new build is a Mirror Dinghy, once produced by a Canadian company, but now, by our local boating designers and suppliers JoTiKa, on opening the kit, the parts are all cut perfectly and I'm looking forward to cracking on with the build. Report in the next edition hopefully.

Many thanks once again to the contributors to this magazine, as said before, it is only as good as to what people send me, so if you have something on the build table, take a few photos and write a few words You know you want to!!!!

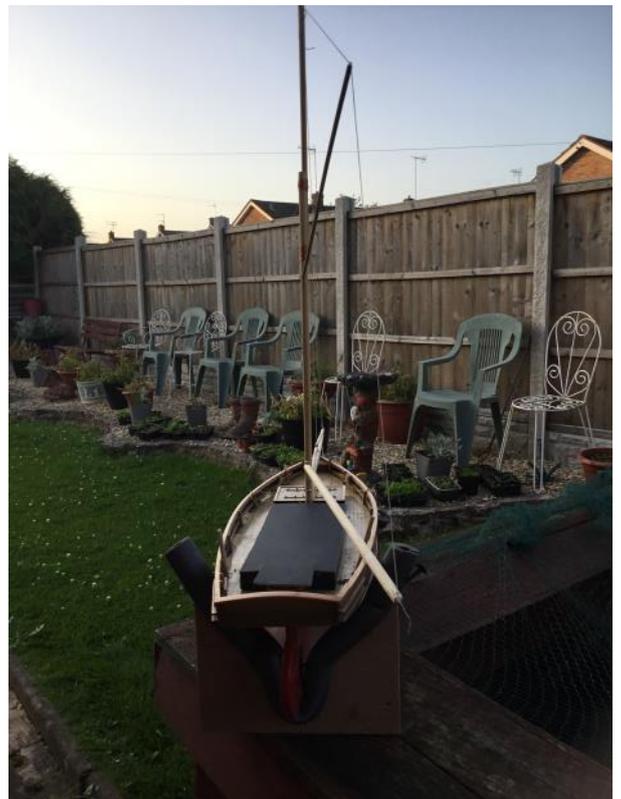
Hopefully we will have a great Summer and enjoy our hobby

Cheers for now

Alan

ROSA

An Essex Smack



Lakeside Laughs

With the help of John from the Lakeside staff, buoys were set and members lined up to sail. Sailing from the far end of the lake, due to the wind conditions apparently, a small group of enthusiasts began the first race. With few problems, the first race ended with wins for Alan Gregory, Trevor Steward and Graham Povey, although the area where we stood for sailing was quite small and the lakeside edge was full of bushes.

Tubby (Tony Gardener) had some visibility problems due to his short stature and the tall bushes round the lake, so his second race wasn't exactly successful! Steve Workman's jib broke when he got stuck in the reeds _ he only escaped by using our windsock to grab his boat! These two distractions gave Alan Gregory an easy win, followed by Graham Povey and Jim Cook.

Robin, the rescue boat

The shenanigans at the above occasion, made the acquisition of a rescue boat a necessity. So, secretary Graham Povey put a plea on a local neighbourhood 'Wanted' site. To his amazement, he received the kind offer of an unwanted boat from a lady in Barbourne- FREE !!!!! Kermit Van Povey was therefore emptied of much mess, and Graham and I sallied forth. Grubby, muddy and full of leaf mould, we saw it and immediately loaded it into Kermit and triumphantly bore it home. Graham spent many happy (??) hours, cleaning it and returning it to a reasonable condition. Trevor Coveney kindly gave a large car battery to power the outboard, and we were ready for action! So our next visit to Lakeside saw the launching of Robin- named for the nephew of Kermit the Frog, and also after Robin, a friend from Bromyard who sold Graham the small electric outboard motor. Launching wasn't too difficult, but getting Graham in and safely settled was a little daunting!! However, he bravely motored off to do a quick reccy of the lake .Perfect! He then set about checking the buoys and rescuing boats which were already wrapping themselves round the buoy ropes. Pete Thornton then took a turn and took to it like a natural _ so he continued to rescue the tangled yachts (you would wonder why it kept happening _ or did they just want to be rescued by Robin???) Graham then returned to the helm. And the end of the session was interesting _ and amusing!! It was however, a most successful start to Robin's rescue service, and I know he will be much used in the future. When we return to Lakeside in the Spring, you must all come and see him working.

Andrea Povey



Part 3

Viking Knarr

By Nige Dale

Rudder, Rigging, & Ballast.

Rudder.

Making the rudder is a relatively easy job. There are numerous examples of rudders, and the set up as used by the Viking Museum on their replicas, are very useful. However, a radio controlled boat under sail needs a rudder that is technically the wrong scale and too large for the boat, with that noted, proceed to make the rudder and fashion a tiller to fit, mount the servo as applicable and set up accordingly.



Fashioning and fitting the rudder on the right hand side of the boat is widely accepted as the correct position for a rudder of this era and of this style of boat, however there have been examples found through archaeological digs that have the rudder on the left. Setting up the rudder servo, and to hide it under deck clutter, is a simple affair of putting in the servo, and building a box around it, then make it look as if it is supposed to be there.

Fig.02.
SERVO FITTED



Fig.03.
SERVO
CONTAINED



Fig.04.
SERVO BOXED



On the completion of the rudder servo installation, it was time to make the winch for the sail, then fit. This was done in advance of installing the sail servos as a break is a good as a rest, or alternatively I just wanted to make the winch, so I did.



The winch fitted, and looks OK, so the installation of the sail servo winches was undertaken.

Fig.06.

The winch drums were wound with a cord, one clockwise and the other anticlockwise, the wiring linked through a "Y" adaptor to the receiver. The sheets were then threaded through the tube guides and up to the gunnel.

TUBE GUIDES

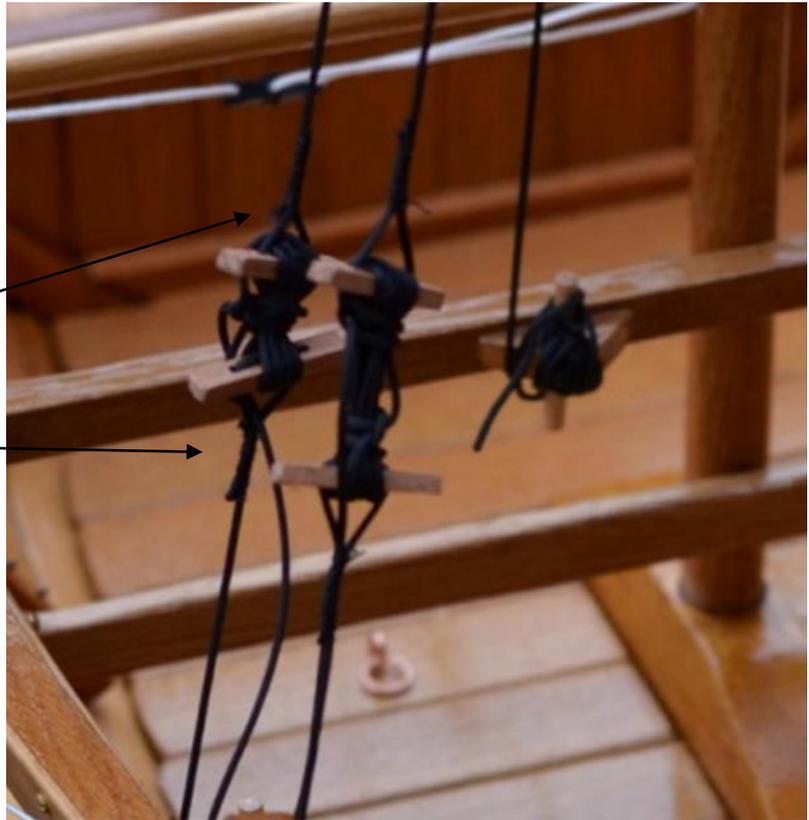


Standard drum configuration for these servos is a drum with a central segregation to allow two sheets to be run from one servo. I removed this segregation turning the drum into a single drum operation, so I could use a thicker cord for the sheet.

With the rudder, and rudder servo fitted, the sail servos installed, it only follows that the standing rigging should be laid and then the running rigging. For the shrouds there are a couple of examples of Viking shroud tensioning devices available, including a fish shaped bowsie. But the style to be used on this boat will be what is sometimes termed as a virgins, which is like a toggle on a line, with the toggle (made of wood) having no holes, through which to reeve the tensioning for the shrouds, as in dead eyes.

Fig.07.

VIRGINS
SHROUD



The above view, is a selective enlargement from a photo by Mr B Waters.

The standing rigging is a simple affair where the use of fore and after stays, assisted by shrouds, is all that is needed. The running rigging comprised of the lifts and halliard, completes the overall assembly, that is not attached to a servo.



The above photo is taken at a market in Fishguard, Pembrokeshire, the boat was there to show a someone the progress of the build, as he is interested in the boat.

At this point the boat was un varnished and the ballast not determined. The parts were varnished, as individual components, and re assembled where applicable. The hull had two coats of varnish, then clothed with fibre glass cloth and "Poly C". To finish the hull and water proof the Poly C, a further two coats of varnish were applied.

Excluding the hull there were 27 individual items to flat and varnish, for the first coat, and then the subsequent second and final coat. To flat the wood prior to, and between subsequent coats of varnish, a scotch pad was used as the abrasive medium.



The above photo, by Mr. B. Waters, indicates the effects of the varnish on the boat when completed.

BALLAST.

Ballasting a boat is always an interesting time as you are trying to determine how much weight you need, whether your calculations are correct, and the best place to put the loads to offer the best end result for stability, trim, and centre of gravity.

I made myself a selection of predetermined weights from round DBMS bar, so load and placement can be determined relatively quickly. The results of my loading gave me a total load of four kilos. This load is to be made with lead ingots cast to suit the voids below the deck level.

Casting lead is not that difficult, however, molten metal doesn't like moisture or lack of knowledge, although lead is more forgiving due to the lower melting point of say Iron, or aluminium, care needs to be taken. I will add some notes within the appendix.

I made a pattern, (shape) out of wood to fit the voids under the deck of the boat in the area of the foot of the mast. Measuring the volume of the pattern gave me a finished weight of one Kilo (1Kg), which is helpful as I can use four in the voids around the mast foot.

Using the pattern I made the four shapes in a tray of compost that I tamped down hard, this was a mistake, the compost was too soft for the outward force of the molten lead, and the moulds yielded a little. At this point my camera packed up so there are a few pictures missing.



The above photo (new camera) is of four castings in compost with aluminium liners.

Prior to the pouring wire loops were suspended into the mould void from a wire that was located above the intended finished level for the lead within the mould. These wire loops are to form a handling point that can be gripped, hooked, or tied with a piece of cord, to aid insertion and or removal from the boat.

When the casting are cooled enough to handle, they can be knocked out and finished.

KNOCK OUT



UNWRAP



FINISHED.

All very nice and shiny, but it doesn't last long before oxidation dulls the casting to the known dull colour that is recognisable as lead.



A little dressing was required due to the mould voids yielding as the lead was poured, but the lead castings worked well, and completed the trimming of the boat.



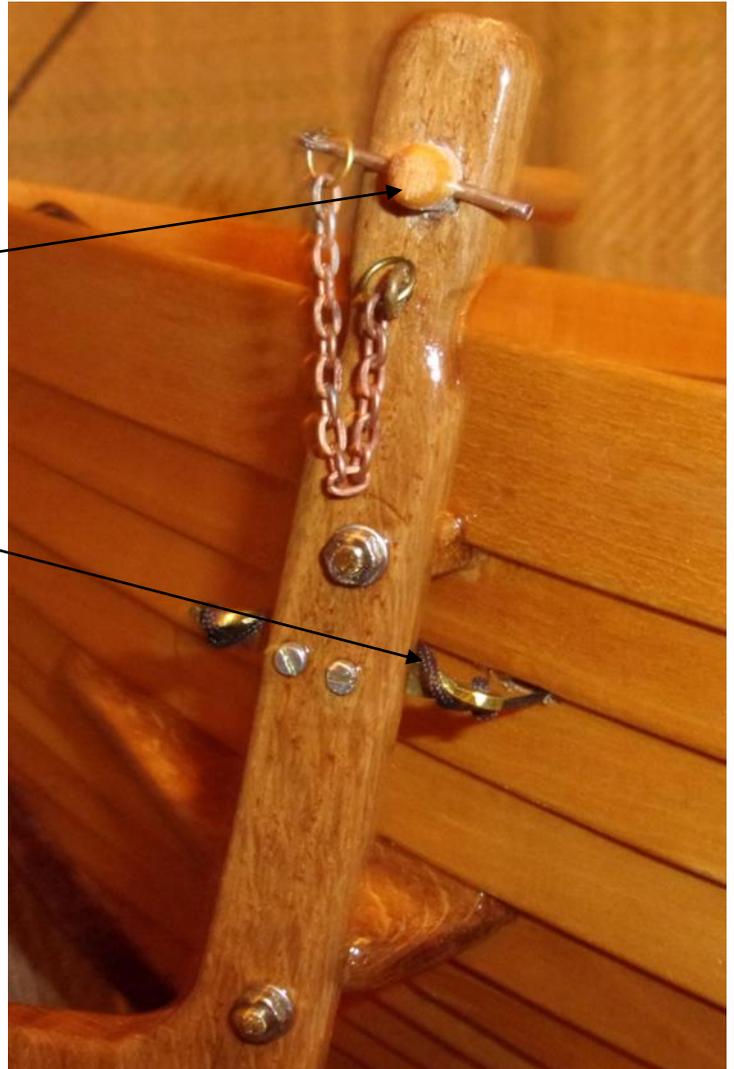
Final assembly.

The final assembly often is a time when you realise that all the work you have done, parts made, assembled into components, then installed onto your boat, is coming to an end. What have I missed out? What if it doesn't do what I want it to when it's in the water? Possibly more questions, but more befitting to your own mental stability, for attempting the project in the first place.

The following pictures are of parts of the boat, which are usually seen from afar.

The rudder mounted onto the boat. The tiller bar passes through the rudder stock and is captivated by a tiller pin, (1.6mm diameter) attached to a chain.

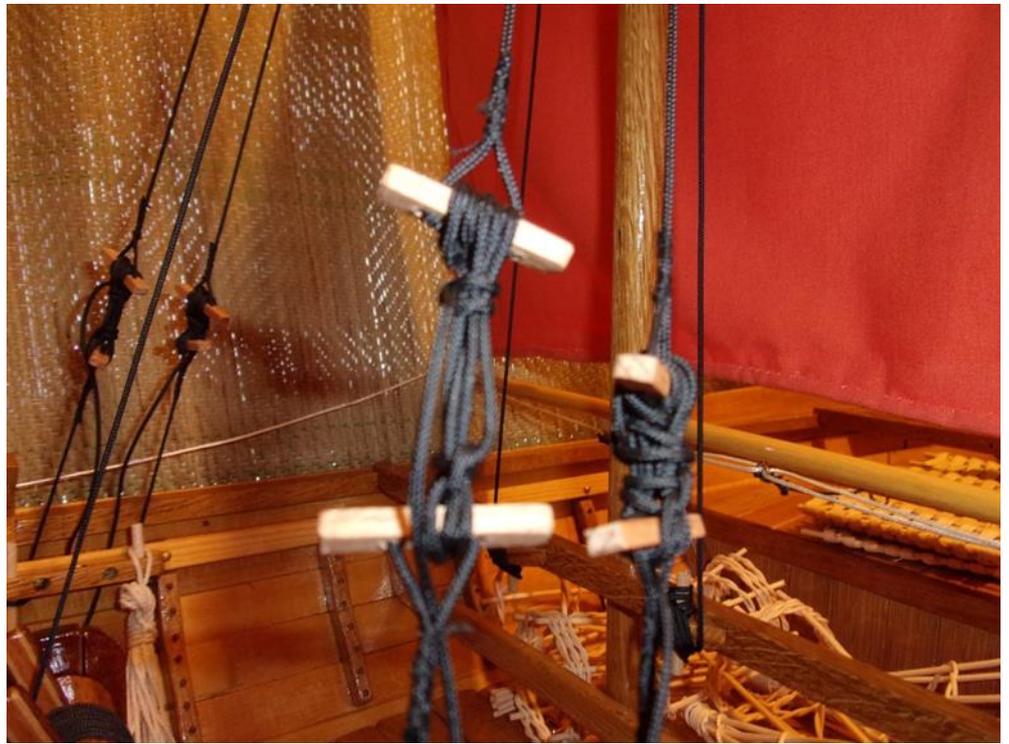
Using 1/4" x 1/16" Brass Strip, a control arm is formed to drive the rudder from the servo, via a cord link



The standing rigging of stays, and shrouds, are mounted simply, by a soft eye slipped over the top of the mast, and the free end made off as required, by belaying, or at a virgin.



Shrouds, tensioned with virgins.



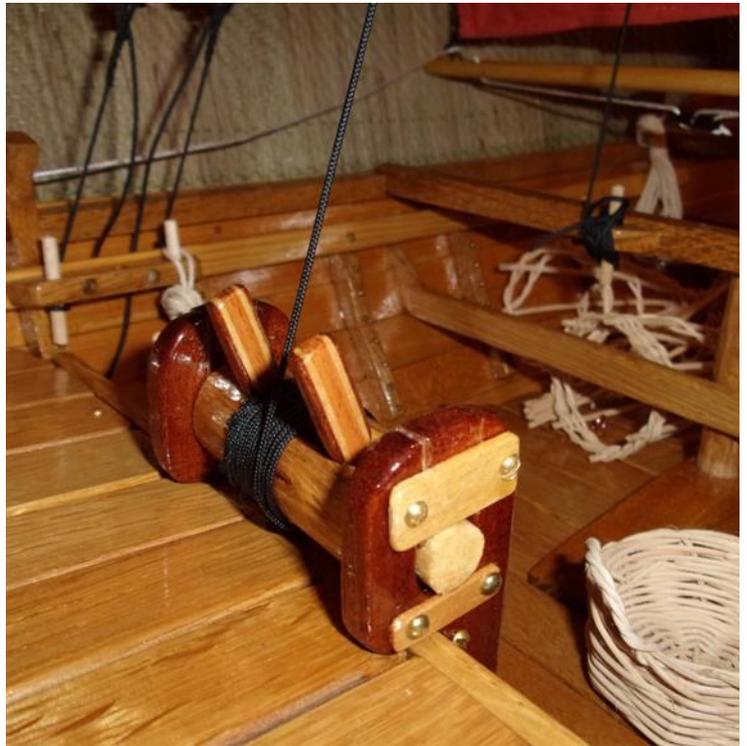
The end of the shroud assembly on the boat is made off on a pinrail, the tensioning of the shroud is done by running a line through the soft eyes of the virgins and finishing off at each virgin with a Clove Hitch. When the virgins are close together, the finish does not look quite so good as when there is a greater gap, but that is the nature of the beast.

There is a second fore stay on this boat, which is made off on a pin



The main sail is hoisted from a halyard attached to a winch. The winch on this boat is functional, and the sail is held up by jamming the winch drum with sprags or the lever bars.

The deck clutter is always a good thing to have as it enhances the look of the boat. For the deck clutter on this boat I made Putter fish traps, a basket, and hurdles. The hurdles would have been historically used as a segregation to live stock when carried as a cargo, the fish traps and basket, in this model, are just to add to the clutter. To all this, add a few lengths of rope, and that is about all you can do.



The above photo is a selective enlargement from a photo taken by Mr. B. Waters. The location is at County Hall, Worcester. I was rather hoping that in taking the Knarr to the County Hall would offer me a better chance of recovery if anything went wrong with the vessel. As it happens something did go wrong, there was too little wind. It was a good morning, and in good company, discounting the wind, what more could you ask.

ACKNOWLEDGEMENTS.

For those who like to make models or just read about ships and shipping, books are a wealth of knowledge, but where to look is always a task when you start something that sometimes you wished you had not.

My references were;

The Viking Ship Museum of Roskilde.

The International Journal of Nautical Archaeology.

Sailing Ships , by Bjorn Landstrom.

Ancient Boats in North-West Europe, by Sean McGrail.

The Sutton Hoo Ship Burial, by R.L.S. Bruce-Mitford. The British Museum.

APPENDIX.

Sails

As indicated, I attach some additional information on the sails used on this type of vessel. The following, is taken from the Viking Ship Museum Web site, and will give you an idea of the task of deciding the sail plan/ size, and as a result of the no wind Sunday at County Hall, I still do not know if the sail is anywhere near correct. The sail informacopy (not in its entirety) from the museum, and is offered as private reference for information to DSMBC members, and is presented in Italics.

Sail and rigging

The reconstruction of the Skuldelev ship's sails has proved a particular challenge for the Viking Ship Museum, as there are but few traces preserved in the archaeological record. It is therefore necessary to draw on information from comparable finds and ethnological evidence. Below is a summary of the general questions concerning the reconstruction of sail and rigging:

The Viking ships' square sail was, in size and shape, developed together with the individual hull size and type of ship. The central crucial factor is the elementary balance between hull, sail and rudder when sailing against the wind, i.e. sailing close-hauled.

If the sail is too broad relative to the hull and the shape of the hull, the ship seeks away from the wind – it has lee helm, and cannot tack against the wind.

If the sail is too narrow, the ship turns into the wind without the rudder being able to prevent this – it has weather helm. If this is not corrected, the ship is dangerous to sail – in fact it is useless as a sailing vessel.

If the sail is too low, the ship will sail too slowly and it will first sail properly when the wind is very strong.

If the sail, and with it the mast, is too high, the load is too great and it is necessary to reef the sail too early.

Further to all this, it is vital that the individual types of ship are ballasted and loaded correctly.

After reading the above, it makes you wonder why you tried to make this type of boat in the first place.

Nige Dale

Casting of Lead.

The casting of Lead, is relatively simple compared to a lot of other metals. It has a low melting point of 325°C, so you do not have to have fancy furnaces or forges to get the metal to melt, so if you want to have a go there is nothing stopping you. Effectively you heat the lead until it melts, and then pour the liquid into a mould. I am not going to lecture, but offer a few tips.

Melting lead needs to be done outside due to the fumes.

Protective equipment is needed, gloves, goggles, etc.

Lead is heavy (11.5 times that of water) so ensure the utensil you are melting it in, is strong enough in the body, **and the handle**. A long handled spoon is also required.

All molten metals do not like water, residual moisture content can be acceptable, wet is not!

The dangers of too much moisture in the mould when casting is greater within an enclosed mould, rather than a mould which is open. For me, I prefer to design out the necessity of an enclosed mould when I am doing the casting, that way you can use cruder methods to achieve your goal.

Melting the lead, in an old saucepan is probably the most common way of doing it. A steel pan is fine, as well as an aluminium pan, but in using an aluminium pan the heat needs to be spread over the whole of the pan, as the localised flame of a blow torch, may just blow a hole in the pan, without melting the lead.

Due to the lower temperatures involved, you can use a variety of different mould materials that you cannot use with other metals.

Steel, ideal for lots of repetitive work.
Hard wood, for 1 offs and small works.

For me, I use either a shape in the ground (or compost, the once, which was not that good) and line it with aluminium foil. Thick foil is the best but the thin stuff from the kitchen works just as well.

The use of aluminium pie cases for a mould are very good, when consolidating all your pieces of accumulated lead into larger bits. Aluminium pie cases need little support, light soil or sand will do.

A wooden mould lined with kitchen foil will work, once or maybe twice, any failures can be re-melted and used again. Kitchen foil lining can be used.

Molten lead will have a scum (slag) floating on the top, remove this prior to pouring into the moulds by using the long handled spoon.

The shrinkage from molten to solid for lead is 5/16" to the foot, but for small parts and ballast ingots, it probably is best to ignore that data. For ingots to fit into a void make the pattern a little smaller than a perfect fit this will give you flexibility in the final part, and also designs in, "the just in case" factor.

2019 Final Laser TT Race Gosport 26th October

This report is for the final day of racing in the 2019 Laser TT series. It is also a lesson in boat maintenance. It took place at the end of October when torrential rain and flooding caused havoc across the country. Setting off from home at just after 6-00am, the roads were like streams with puddles the size of small lakes. The conditions stayed this way until I got as far as Swindon, where it suddenly stopped raining and it was dry all the way to Gosport. I arrived at the Cocker's lake at about 8-45am. After booking in for the race I went into the clubhouse boat store. There I was able to set up my boat out of the wind and cold. I provisionally chose the D rig. Both of my boats had been checked out thoroughly at home and everything seemed ok, so it was up the stairs to the cafe for some breakfast.



Comparison A and D Rig

The Picture above shows the difference between an A rig and D rig, B and C rig are somewhere in between.

With wind speed ranging between 20 and 40 miles per hour sail selection was between the C and D rigs, C giving more drive but losing control in gusts or the D maintaining better control.

Briefing was at 10-15am giving a couple of minutes left before the racing was due to start at 10-30 am.

I returned to the club house to collect my boat, turned it on and the rudder went hard to right. After checking the transmitter settings the servo would only move part way back to centre. I was running out of time so I decided to use my spare hull. Panic run to the car to collect it, change the rudder and keel over. Switched the second transmitter and the boat on and nothing! It was completely dead. At this point I could not see me making the start of the first few races.

Step in one of the three Rogers. Roger White from Australia (In the TT series there are three of us called Roger, I'm the good looking one, and we have our own race within the race as we are a similar standard i.e fair to c---) He lent me his spare hull, so with a quick change of all the fittings I was ready on the start line with a minute to go. Sailing Rogers's boat was completely different, using a different transmitter similar to a Skyfly computer set. The stick movement and the feel of the transmitter being completely different to my Spektrum set.

As an aside there is a warning given by the Gosport club as due to its proximity to Portsmouth harbour and the coast guard station Planet T2 Transmitters although 2.4 GHz suffer from interference, and so did mine.

This meant that from the start to the windward mark everything was fine, but when I rounded the mark and set course for the leeward mark on a run before the wind, I encountered an area of interference. The boat suddenly turned 90 degrees to the left, I put in opposite rudder to correct this and nothing happened, then all of a sudden it turned 180 degrees to the right

It did this several times until the boat got through this patch and then normal control was resumed. This lost me about 20 yards per lap. On the funny side of things in one race I was sandwiched between two boats on the run, the interference kicked in and I bounced of each boat incurring three penalty turns. I sailed the first four or five races like this until we stopped for coffee (YES).

This gave me some time to re look at my own boat, The rudder was still hard over when I switched on, At this point I decided to use the rudder servos torque in its neutral position and physically force the rudder back into its central position causing the control horn to jump on the servos splines. Full movement was then restored in both directions. What must have happened was when I was having breakfast someone must have knocked the rudder to the right causing the splines to jump and then it was re centred by hand, with the boat switched off there would be very little torque in the servo to resist this movement. Coffee over I was back in business with my own boat. The boat I had been using was returned to Roger White with many thanks as without his kind gesture I would have missed the first few races completely.

Rudder hard over with control arm jumped on servo splines



Back on the water and the weather turned. The rain came in and given the wind strength it was almost horizontal driving straight into our faces! This provided a bit of fun for those of us wearing glasses. At one point I could hardly see the lake never mind the boat!

The next few races were slightly better but the rudder kept jumping on the splines causing some interesting sailing and a DNF. I tightened the screw on top of servo as a temporary fix, but will need a new control horn for next season.

The boat was still not sailing consistently well and this highlighted my next problem. Earlier in the year I had changed the boom sliders to the latest design, these being easier on the fingers when making adjustments. Perhaps not such a good idea as they did not seem to grip the boom so well in these conditions. This caused the two main sail shape adjustments to move giving more camber and twist in the sail. Too much camber can make tacking impossible, and make it more likely to submerge the bows when going down wind. Too much twist causes the top of the sail to lose drive, not enough and the top of the sail can stall. This was fixed by the addition of some insulation tape on the boom, another problem temporarily solved.

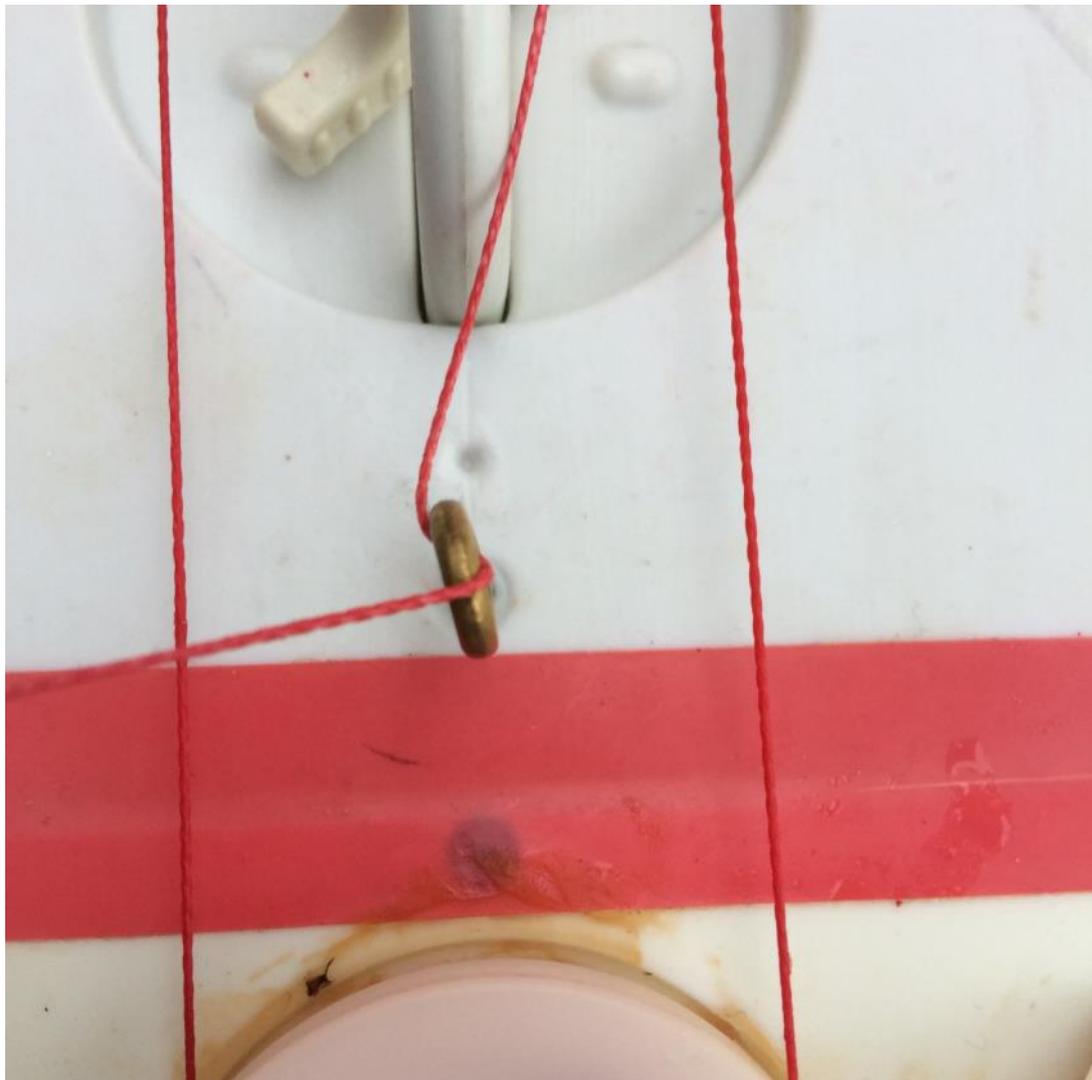


Deck Sliders on D rig Boom. On the left is the Clew outhaul its position sets sail twist and affects the camber as well. The one in the middle is where the main sheet attaches to the boom. The one to the right pulls the sail down to the clew and also adjusts camber and twist.

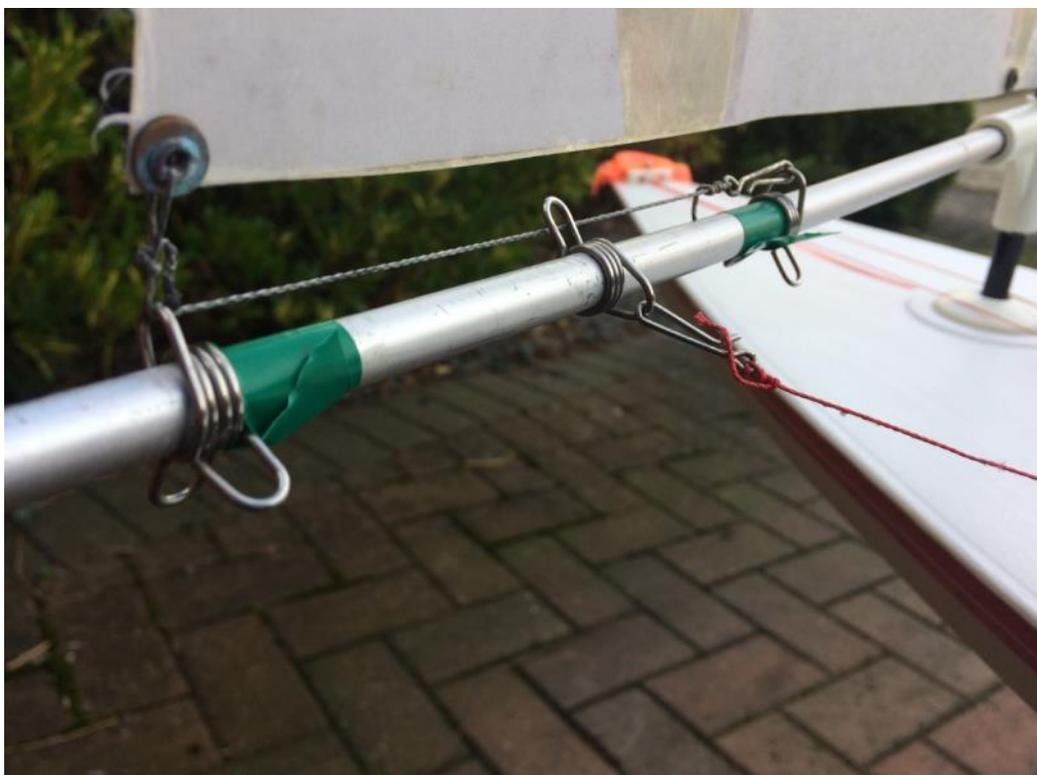
Next problem encountered was caused by the deck eye which the main sheet runs through twisting through 90 Degrees, this caused a large wrap of approx. 270 degrees of the sheet round the eye (See Photo).



Deck Eye normal and twisted positions.



This was further compounded by the last fault to be fixed. The boom slider in the middle of the three on the D rig boom (where the main sheet is attached) had twisted in strong gusts, probably when the boom was right out on a run. This created two issues. First on one tack the sail did not come in far enough when beating to windward. On the other tack it came in too tight. The other problem was the clew outhaul line passes between the two thumb grips on this slider when it twisted it reduced the camber in the sail. These problems were pointed out to me by ex. world champion Dave Fowler and were soon fixed.



It had taken until 2-00pm in the afternoon to get the boat right for the weather conditions. I had been lucky to finish in the top half of the fleet up to now, but the last two races gave me two fourth places.

In conclusion it just goes to show that for a boat I had sailed all season and checked the day before the event needed more attention to sail in those conditions (Lesson learned). Mine was not the only boat to suffer problems, a few brave souls persisted with C rigs one had a sail blow out and torn and another had a broken mast. Some had radio and servo problems. With all this going on it was still a great days sailing but we were all relieved when racing finished early due to the weather.

Back in the club house with a hot cup of coffee (Great). It was time for the results and the prize giving for this event and the complete TT series. I was quite surprised to have finished twelfth in the event and seventh in the TT series for which I received a cut glass tumbler and a bottle of beer.

The Journey home was quite uneventful and arrived at 18-30 but not so for others John Armstrong who joined the club last year finished sixth in the TT series, due to the flooding did not get home until 02-30 Sunday morning

Spektrum Radio earlier in the report I mentioned that my spare hull was completely dead when I switched it on. After I got home I did some investigation as to why as it had worked perfectly the day before the race, what I found was the receiver had lost its binding with the DX6i transmitter, this has been re bound and everything works fine again. I think the reason for this might possibly be on the night after doing the checks I had the transmitter on my knee and decided to tidy up the Model memories as some of them were used by models I don't have any more. Using the delete and copy functions I re arranged the existing boats without any problems. I checked all the parameters and it all seemed ok. What it hadn't done was copy the bind settings. Again lesson learned, has anyone else experienced this?

That's it for this season

Good Sailing

Roger

Many thanks once again Roger for an excellent report on your trials and tribulations, I'm sure the rest of the club wish you all success in the 2020 series, I also think you have won enough glass tumblers over the past few years and the shield and cup will look good on the mantelpiece hopefully this year.

Alan

Mike's Mutterings: late 2019

AKA "the trials of a scratch builder"

Viking Poseidon (VP)

After my last burst of boat building activity everything went quiet as I got involved helping both my son Chris and then Jacky's daughter Charlotte to move homes. Much DIY support was also needed as Chris's new home had not been touched since 1984 and needed a lot of modernising and new lighting in every room.

I finally returned to VP in December and moved construction back indoors as the workshop was bitterly cold and uninviting.

For no particular reason I decided to finish off the lifeboat stations, which I had left for about 2-years after I first build the recess boxes.

The 2-lifeboats are the 'all enclosed' type. I was going to use a block of blue modelling foam my sons used at university, but had my doubts it would spray paint. A test proved me correct as the foam just melted away under the paint so I glued 11-sheets of blown plastic board together to create a solid block and then cut and sanded them to shape. By accident the joints acted as contour lines and made it much easier to get each side identical.

The lifeboats were quite heavy so I drilled out holes on the inside face too lighten them as much as possible



I added recessed led lighting into the boxes and made the davits and life rafts and associated frames and finally glued everything together hoping I hadn't missed anything.



Mounting them in the hull was quite a challenge. Not least the control board with all the radio gear on had to be rebuilt and repositioned to give me full access to it in future. The hull had to be balanced on each side in turn and each box glued in place overnight with Gorilla glue. When this was hard I added frames to transfer the weight into the hull and then for good measure added some fibreglass patches to really stiffen it up. All this had the added advantage of strengthening the hull sides which were rather flimsy up to this point as so much had been cut away to create the shape.

I also fibre glassed a lifting handle into the bow to assist in moving the hull.

My next job was to add leds into the bridge. I did not want to 'overlight' the bridge so only recessed 4- leds into the deck. Having reached that decision this allowed me to plan the wiring run, which in turn released me to finish the bridge ceiling and glue in the yellow perimeter sections and although it most certainly isn't, it appears much more finished with this done, great!

The bridge decks also underwent a weight loss programme, much of the internal ply framing has been cutaway while retaining the structural strength.

Although I say it myself the build is coming together rather nicely and has been worth all my efforts so far. Just hope I can do justice to the crane and get it to operate, its touch and go if the mechanism from the Huina digger will fit into the arm to be the correct scale. Fingers crossed!



At this point Christmas got in the way, with lots of family visits, eating and the odd hangover so work has ground to a halt again. Hopefully I'll get inspired again soon and crack on the with the next phase

Cheers Mike

Can't wait to see this model finished and on the water, I will freely admit, that when Mike purchased that hull, many months ago, I thought that he had bitten off more than he could chew, but he has proved me wrong, a really superb job and a true masterpiece.

Alan

**TRANQUILITY BASE COUNTY HALL BEFORE SOMEONE MADE
THE WATER LUMPY**



Photos by Roger Atkins



Club 500 building notes



Introduction

The idea behind Club 500 racing at the DSMBC started with a conversation between myself and Pete Thornton whilst manning the stand at Warwick Boat Show back in November. Pete mentioned that he was interested in building a fast electric boat, Tim had just purchased a highly modified Club 500 boat from the Howes stand, I said that I'd been thinking of getting a Club 500 for a while, and that was it – a chat with the committee and we had a plan!

We currently have six boats race-ready and five more under construction, with our first proper meeting scheduled for the 1st of March at Lakeside. I have only just completed and tested my boat and our esteemed editor asked me to provide a review for the newsletter, so here it is.

What's in the bag?

My boat was collected directly from the manufacturer, Club 500 Slipway. The kit comes securely packed in a stout polythene bag, with all the vacuum-formed parts covered in bubble-wrap and tissue for additional protection. There's also a 550 D/C motor, universal joint, propshaft, propeller and rudder, plus some brass and plastic rods. You need to provide suitable glues, radio-control equipment, an electronic speed controller, and batteries.

A bit of shopping around will get a functional boat in the water for less than £100; thanks to this being a one-boat, no-modifications class, you can't improve your success by chucking lots of cash at it.

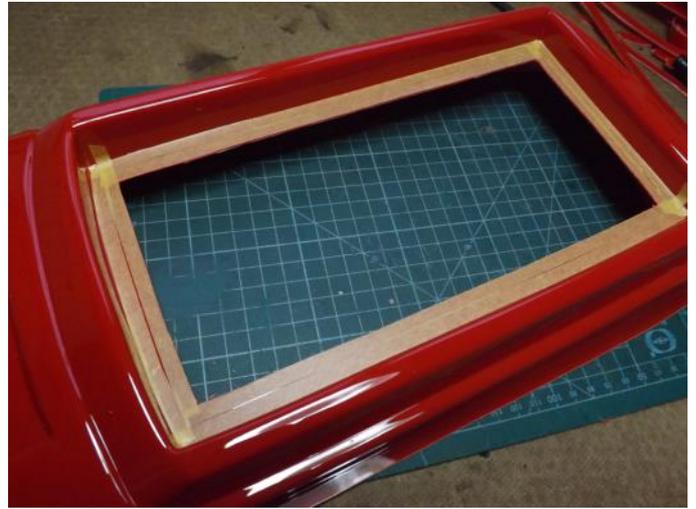
The build

I have enclosed some pictures of my build but refer you to the following site for an excellent pictorial construction sequence:

https://www.modelboatmayhem.co.uk/My_models/Club500/index.html

The vacuum-formed components arrive partly trimmed but need freeing from backing material. The kit instructions suggest using a pair of scissors to do this but I used the score-and-snap technique whereby you score a line around the part using a utility knife, then bend and snap the plastic to free the part. This gives a good finish but requires careful wielding of the knife. To get a good bend and snap, it's best to limit compound curves and, where possible, cut down to the finished line in multiple steps. In the case of the deck hatch, I drilled holes in the corners to stop the cuts running beyond where they were needed.



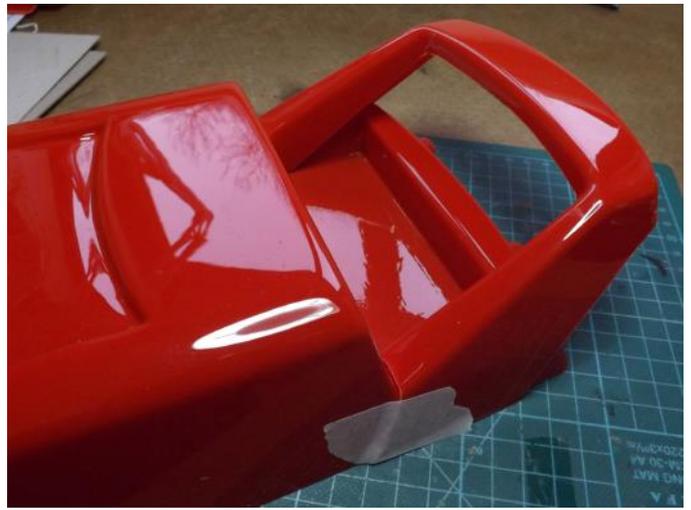
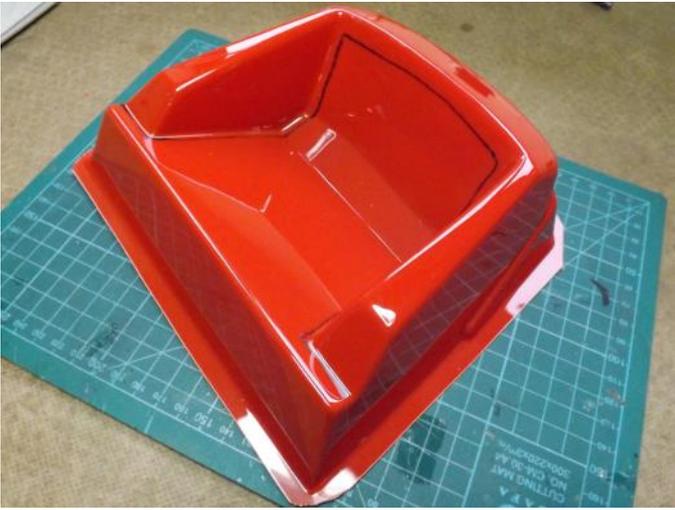


Small components were sanded to final size and the rest were trimmed using a razor plane. The razor plane works particularly well and results in a pile of plastic shavings rather than static-laden dust – much easier to clean up when working indoors on a cold, wet day!

Some thought needs to go into trimming the hull and deck to the correct size as there are no moulded lines to follow. The instructions do provide approximate cutting positions, and I used masking tape as a cutting guide for my knife. Both the hull and deck flair out around their edges and if you take off too much material they won't fit securely together.



The other component that needs a bit of thought is the rear spoiler, which can be fitted facing forwards or backwards. The moulding is cut slightly differently depending on your decision. I chose to fit mine as a classic spoiler, and while there are some moulded cutting lines to follow, you do need to be careful when trimming to get a good fit. It makes sense to plan the cut by marking the final shape in “the jelly-mould blob” using a pen and masking tape before making any cuts.



Having completed the laborious bit, I was presented with a set of fully trimmed mouldings and was ready to start glueing.



The nice thing about a moulded hull is that you have plenty of room to install and test everything before glueing the deck into place. In this case I started by installing the rudder, consisting of a top-hat moulding and plastic rudder tube. All internal glue joints were made using 30-minute epoxy; this has the benefit of allowing plenty of time to square everything up whilst providing a very strong joint.



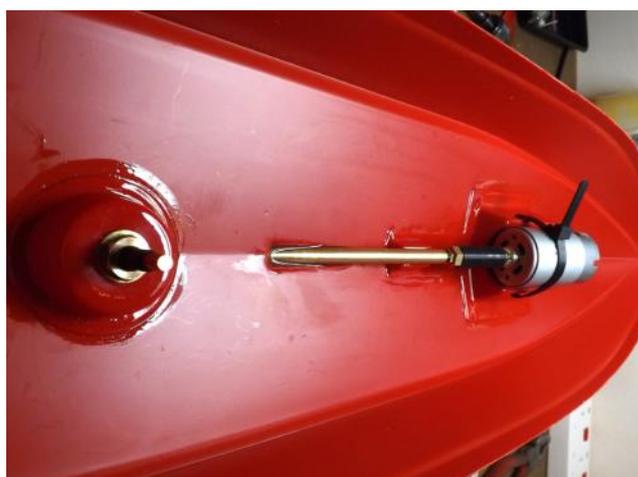
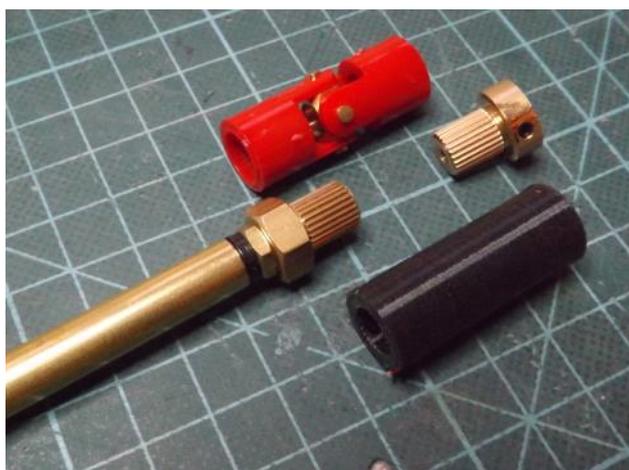
On the subject of glue, I did some tests using good old-fashioned Humbrol Britfix Polystyrene Cement and found it gave an excellent plastic-to-plastic bond, so that's an option for some joints. Where plastic-to-metal is concerned, slow-setting epoxy is suitable. Finally, Soudal Fix All Crystal (or silicon sealant) can be used as a glue/filler on the rather generous hull-to-deck joint.



I then turned my attention to the motor mount. The instructions suggest using bent wire clips and rubber bands to hold the motor in place; I'm sure this works fine, but motor access is restricted once the deck has been installed and I could see that replacing perished rubber bands would be a right pain offcuts of plastic inside the mount. I also glued a piece of thin foam rubber between the motor and mount to prevent motor movement.. Instead I employed a reusable tie-wrap and strengthened the motor mount sides by glueing

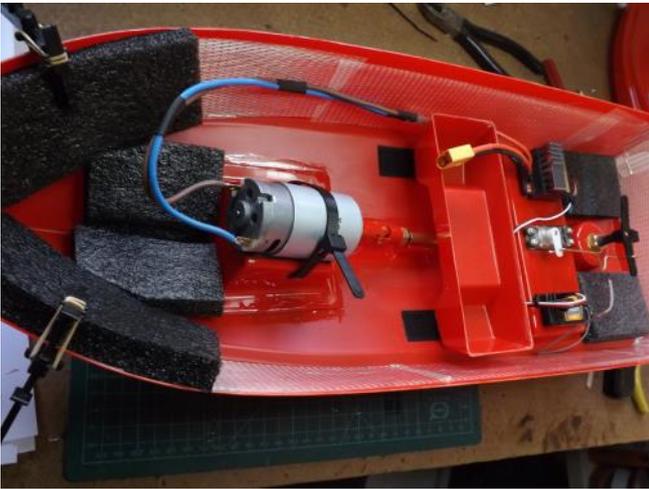


Next, I drilled a hole in the hull to take the propshaft. The propshaft, motor mount and motor are all installed in one operation, and the idea is to get perfect alignment between the motor shaft and propshaft so as to maximise efficiency. A universal joint can compensate for poor alignment but it saps power doing it, so the less work it has to do, the better. Club 500 Slipway sell an alignment tool, a turned brass rod that replaces the entire UJ during installation. I chose to design and fabricate a simple plastic replacement on my 3D printer. This utilises the UJ brass fittings and is swapped out after everything is glued into place.



With the drive-train and rudder installed, I moved on to the radio gear. For this model I used a midi-sized servo, a model car electronic speed controller (ESC), and my usual Flysky 2.4GHz transmitter and 3-channel receiver. The car ESC works well and is cheap and rugged ... well, the one I used was – some folk haven't been so lucky. Unlike a standard boat ESC, there is a superfluous braking function, meaning that you can't go from full ahead to full astern by just whacking the throttle stick in one direction or the other. You have to stop in neutral for a split second before selecting reverse. On a racing boat, you are supposed to be going forwards as fast as possible all the time, so this shouldn't be a problem.

The final part of the hull build was to apply cross-weave packing tape around the inside and cut and glue sheet-foam into the bows for buoyancy and additional perforation resistance. Apparently the thin hull walls can be holed in a high-speed accident, and the packing tape and foam make this significantly less likely – well, that's the theory; the carnage of competition will prove or disprove the hypothesis!



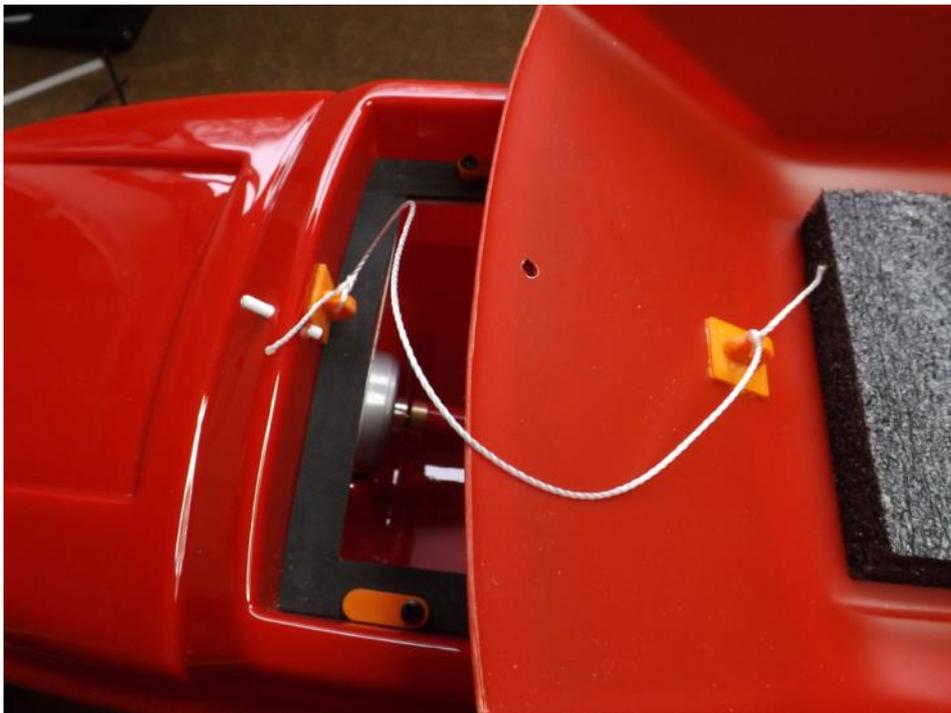
Moving on to the deck, I glued strips of 2mm Plasticard around the underside of the deck hatch, made a seal by glueing sheet foam (available from Hobbycraft) around the upper hatch, and cut a rectangle of Plasticard to form a cover. When racing, it is possible to lose the cabin (more anon) and, without a decent hatch cover, the boat will soon fill with water – especially if it is also upside down at the time! Club 500 Slipway sell a clear Perspex hatch cover which is being used on some of the boats. Its major benefit is that, being clear plastic, you can see instantly if there's a problem under the hatch.



I designed and fabricated some catches to secure the hatch cover. Spare servo horns would do the same thing, but what can I say? I like using my 3D printer.



Finally, I made and fixed a couple of securing loops to the deck and cabin and tied them together with a few inches of strong cord. If the cabin becomes detached during an altercation, it will at least remain attached to the boat.

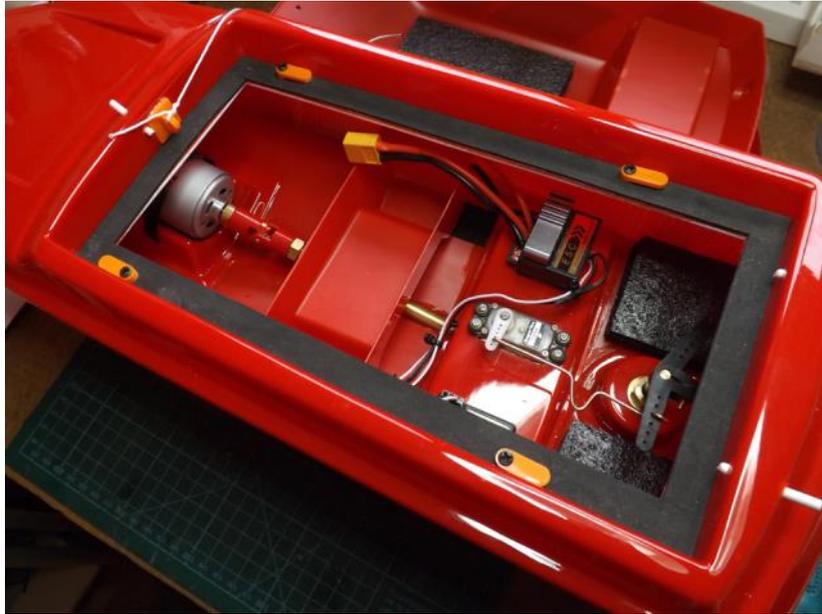


Having completed all the deck work, I glued the deck and hull together. As mentioned earlier, Malcolm at Club 500 Slipway had suggested using Soudal Fix All Crystal to do the job. This is a clear adhesive with similar properties to silicon sealant. However, Keith and Bob used it and reported problems with curing time. I decided to adopt a slightly different approach: I glued the deck and hull together with polystyrene cement and, once set, used the Fix All as additional glue/filler around the deck-to-hull joint.

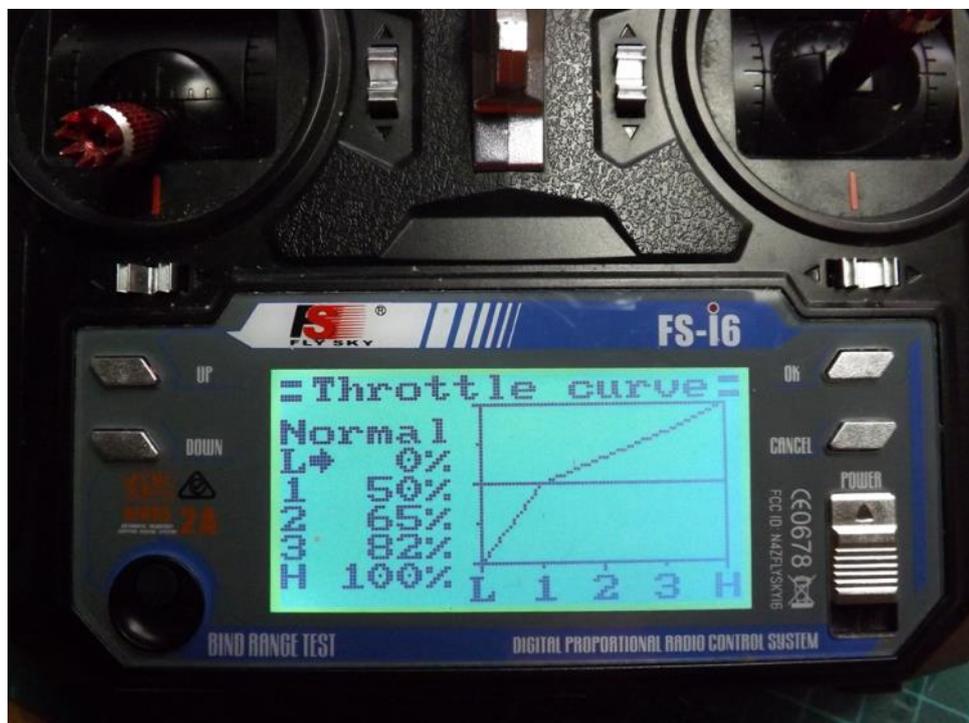
Setup

The battery box was secured using Velcro strips, enabling fore and aft movement to balance and trim the boat. I didn't fit a propshaft oiler as they slightly limit the movement of the battery box. Instead I injected the propshaft with Vaseline, which will need topping up on a regular basis. So far, half the boats that have been built feature oilers and the rest don't; we'll see if they have any effect on performance and longevity as we progress through the season.

As previously mentioned, I am using a model car ESC with a built-in battery elimination circuit (BEC), so no receiver batteries were required. The ESC also has an on/off switch fitted. I removed this and soldered the wires together so that it is always armed when the battery is connected. This follows standard model aircraft principles, where a battery is safe only when it is disconnected. It also removes all risk of the switch failing when in use.



As described earlier, the ESC does have forward and reverse functions, with neutral at the throttle-stick middle position. As I'll be travelling forwards most of the time, I decided to programme a throttle curve into my transmitter to provide 75% of the stick travel for forward control and 25% for reverse, giving greater sensitivity when racing.



Finally, I'm running my boat on 2-cell LiPo batteries, and to maximise current handling I replaced the dodgy power-sapping Tamiya-style connectors with superior gold XT60s. The class rules allow for both LiPo and NiMh batteries and we'll see which prove better once we start racing.



Model testing

With the model finished, greased and charged, I was fresh out of excuses and set off for the pool on the following Sunday morning. After taking a couple of safety shots with my camera, I put the boat in the water and opened the throttle. All worked perfectly, and it soon became clear that the Club 500 is not only fast but incredibly manoeuvrable.

These boats sit in the water with a nose-down attitude, but once on the plane, the bows leave the water and they just *go*. If I have one slight criticism, it is that my boat porpoises a fair bit, so I'll need to experiment with battery position to optimise the trim – all part of the fun.





In summary, Club 500 boats may look a little basic and toy-like but they perform surprisingly well. Even if you aren't racing them, they make a fine and easily operated fast electric boat.

Want to join us?

You'll find more information about Club 500 racing in my original article (available on the DSMBC website). If you'd like to join in, please send me an email to register your interest: tony@lizdraper.co.uk

Boats and accessories are purchased from here: <https://www.club500slipway.com/>

The colour list for boats is enclosed and correct at the time of going to press, but please confirm with me before ordering a kit to ensure that you don't end up with the same colour combination as somebody else...

Club 500 boat colours	Deck	Hull	Windows	Extra Trim
Roger A	Yellow	White	Black	
Keith F	Orange	Orange	Silver	
Bob M	Purple	White	Silver	
Alan G	Red	White	Silver	
Graham P	Cream	Blue	Black	
Tony D	Red	Red	Black	
Pete T	Green	White	Black	
Steve W	Black	White	Silver	Orange Stripes
Alan H	Orange	White	Black	
Roger K	Silver Grey	Black	Black	
Bryan H	Yellow	Black	Black	

An enormous thank you to Tony Draper for a wonderful write up on his build of a Club 500 racer, I am really looking forward to the carnage at Lakeside, as the old saying goes "Rubbing is Racing"

Alan

Lakeside Launching



To assist with the launching of our models at University Lakeside, a section has been cut out of the bank near the parking area.

This I believe will have stones placed near the edge to stop people slipping, and I'm sure Robin will appreciate not having his bottom scraped in the mud.

The track leading to the parking area will also have its pot holes filled in, thus negating the need to drive on the grass.

Looking forward to our first session in March already.

Alan

