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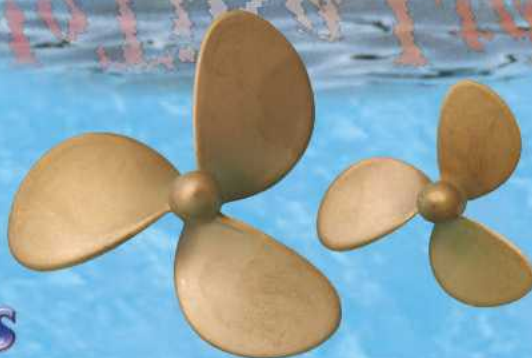
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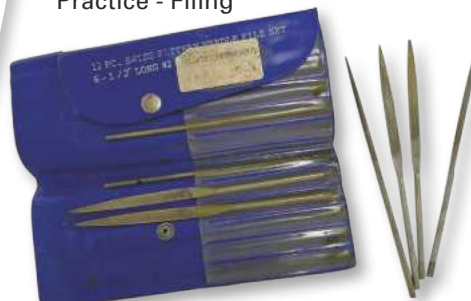
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Bow piece

This issue includes a full-size Free Plan designed by Glynn Guest for Skimmer 5/600, complete with comprehensive building instructions and advice. In addition, David Heaps describes his fully functioning semi-submersible model of a heavy-lift ship and Ron Rees continues with Part Two of the construction of his unique model of the Botnia Marine Targa 37 Police Launch, the fantastic plan for it being now available from MyHobbyStore.

Dave Wooley went to Harrogate for the 2014 National Model Engineering and Modelling Exhibition, an event that has a considerable marine modelling input and his pictures tell the story. We also have all the usual regular articles, including a very nice HMS Vindictive from one of our Belgian subscribers in Readers' Models. Alvaston Pirates are a new club and Phil Button has a report from their rain-soaked official opening day!

A reminder here that the Model Engineer Exhibition is being held again in December 2014 at Sandown Park and this is an opportunity for model boat builders to enter the Marine Competition and perhaps win an award at this prestigious international event. Contact details and forms for model entry may be obtained from Mike Law, contact details in Compass 360, but they will also be included and printed in the forthcoming November issue of this magazine.

Paul Freshney - Editor



Compass 360

Model Boats notice board for your news

Editorial Contact - Paul Freshney

You can reach the Editor, Paul Freshney, on 01277 849927. The editorial postal address is: Model Boats, PO Box 9890, Brentwood, CM14 9EF.

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International Model Boat Show

Just a reminder to note the dates of **Friday 7th to Sunday 9th November 2014** for this annual major model boating event, to be held as usual at the Warwickshire Exhibition Centre, Fosse Way, Nr. Leamington Spa, CV31 1XN. Advance reduced price tickets are available for this event and as of August 2014, over 600 model boats are definitely attending with more than 30 clubs and societies plus over 20 specialist traders. Website

is: www.modelboatshow.co.uk for more information, or tel: 01926 614101.

London Model Engineering Exhibition 2015

This is due to be held once again at Alexandra Palace in North London from **Friday 16th to Sunday 18th January 2015**. This exhibition is regarded as one of the leading model shows in the UK and has been attracting over 15000 visitors in recent years. It encompasses

model boats, steam engines, trucks, planes, helicopters, tanks and even robots, all with substantial trade support. For more information, please check the website:

www.meridienneexhibitions.co.uk

Kent Model Boat Display Team

A group of like minded scale model boat enthusiasts have formed this group, their aim being to enjoy and have fun when giving displays with their various models. They have already in 2014 run a model display at the Biggin Hill Air Show and at Hever Castle, and will be at the Headcorn event in September just after this magazine goes on sale.

They have been asked, in conjunction with Mid Thames MBC, to run the 2015 Spring Model Boat Show at Beale Park, Pangbourne over **Saturday and Sunday 23rd/24th May 2015**. They aim to revitalise this event, which in recent years has perhaps lost some of its sparkle. For full details please contact Richard Stringer, tel: 01732 460074 or email: scalemod62@yahoo.co.uk

Information supplied by
Barry Chapman

Action Electronics

Dave Milbourn has asked us to remind readers that having sold his business to Component Shop nearly two years ago, he is still getting direct phone calls from potential customers. He asks us to make it clear that ACTION

Electronics products are ONLY available from Component Shop, tel: 08432 898528 and that the old 0115 number is redundant.

Richard Dyer

Richard has designed (laid-out) this magazine, together with Military Modelling, for many years now. He has therefore prepared two magazines in each four week design period, their being 13 issues of each publication per annum including the 100 page MB Winter Special Edition. This is no easy task, but he has managed it all very well.

On the 31st August he has become part-time with MyTimeMedia due to ongoing health problems and Steve Stoner who has designed the occasional additional Colin Bishop edited Model Boating Special is onboard from the 1st September to look after the regular issues of Model Boats. Steve has also designed parts of this magazine when Richard has been on holiday, so is familiar with the subject matter and style.

I wish Richard well, as I know that the last two years have been difficult for him because of his health problems and his need now to put his family first. He has done a first class job with Model Boats and we have never missed a deadline whilst he has been the magazine designer and I also thank him for that.

My best wishes to him for the future.

Paul Freshney - Editor

2014 Model Engineer Exhibition

This long running event, sponsored by Model Engineer and MyTimeMedia, is now well into its second century and is being held once again at the Sandown Park Exhibition Centre in Surrey, close to the M25, from **Friday 12th to Sunday 14th December** inclusive. Models such as HMS Warspite by Colin Vass will on display as well as the unique models of Ashley Needham that have been featured in this magazine and on our website forum. On Page 50 is the advertisement for this event and entry forms are available online via the link on our websites, or direct from Mike Law, who is the organiser for the model classes. They will also be printed in the November issue of this magazine.

Marine Model classes:

C1: Working scale models of powered vessels (from any period). Scale 1:1 to 1:48

C2: Working scale models of powered vessels (from any period). Scale 1:49 to 1:384

C3: Non-working scale models (from any period). Scale 1:1 to 1:48

C4: Non-working scale models (from any period). Scale 1:49 to 1:384

C5: Sailing ships and oared vessels of any period – working.

C6: Sailing ships and oared vessels of any period – nonworking.

C7: Non-scale powered functional models including hydroplanes.

C8: Miniatures. Length of hull not to exceed 15 inches for 1:32 scale; 12 inches for 1:25 scale; 10 inches for 1:16 scale; 9 inches for 1:8 scale. (No limit for smaller scales).

C9: Any model boat built from a commercial kit. Before acceptance in this class the kit must have been readily available for at least three months prior to the opening date of the exhibition and at least 20 kits must have been sold either by mail order or via the retail trade network.

Mike Law can be contacted at: 12 Maple Drive, Elkesley, Retford, Nottinghamshire, DN22 8AX, or by email: post@michaellaw.co.uk.

Southport Model Boat Club

ABOVE: An overview of the pond and its facilities.

This club has been at its purpose built pond for ten years, but has been in existence much longer. The site is shared with Southport Model Engineering Club who offer the general public model train rides throughout the year. The site is at Rotten Row, Southport, PR8 2BZ, five minutes walk from the famous Lord Street, with all its wonderful shops. The club's regular sailing times are Wednesday afternoons and Sunday mornings throughout the year, although the members, now numbering over 100, may sail 24 hours a day, seven days a week if they wish. There is off road parking, plus toilets and light refreshment facilities on site.

The club has a healthy social scene, having a meeting on the second Thursday of each month at Southport Football Club (except January) and an annual dinner at one of the excellent local golf course clubhouses.

Night sailing and suppers are a regular event at the pond including an annual duck race. As well as open days, the club regularly visit and



A typical scene on a sailing day at Southport MBC.

support events at Martin Mere, Ellesmere Port, Colwyn Bay, Haydock Park and Blackpool, last year winning the trophy for the best stand, and are the host club at the Woodvale Transport Festival now held each June at Victoria Park, Southport.

As with most model boating ponds these days, i.e. engines are not permitted, but steam, electric and sail craft are always welcome. The club has a quarterly newsletter to keep members informed of current news and events and are

proud to support Queenscourt Hospice as their charity of choice. Further information and details of membership can be found on our website: www.southportmodelboatclub.com

Information supplied by
Michael Sandiford

Seaforth Publishing

Available to all Model Boats readers is a discount of 10% for online orders. Seaforth (Pen & Sword Books Ltd.) publish many books, but recent additions include: Big Gun Monitors, Naval Firepower, HMS Hood and German S-Boats in Action. The website is: www.seaforthpublishing.com and the special code is 210408 that needs to be inserted into the promotional box. The alternative telephone number is: 01226 734555.

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model Boats Next issue

The Model Boats November 2014 issue is on sale on the 10th October 2014



The 'Amazing' Depron hull by Ron Rees is the main feature in this issue and it is a basic all purpose easily constructed hull that then became a practical radio controlled U.S. Swift PCF from the 1960's Vietnam War. There will also be a Plastic Magic radio control conversion by Tony Dalton of the Airfix HMS Trafalgar submarine kit, creating a unique surface running model.

See more about what's in **Model Boats** magazine month-to-month in forthcoming issues and see some of the articles you may have missed from past issues and subscription offers on our website: www.modelboats.co.uk

We have a great range of subscription packages that you can choose from, including **our new Print + Digital package** which give subscribers 13 issues a year with 6 free plans, 13 digital editions to download and keep PLUS access to an Online Archive dating all the way back to January 2007.

Don't forget! The October 2014 issue will be published on **10th October 2014** price £4.50 – don't miss it! Order your copy now! Or better still why not make it your first copy in a year's subscription to **Model Boats** magazine? See our subscription offer on **Page 28** in this issue...

If you can't always find a copy of this magazine, help is at hand! Complete this form and hand in at your local store, they'll arrange for a copy of each issue to be reserved for you. Some stores may even be able to arrange for it to be delivered to your home. Just ask!



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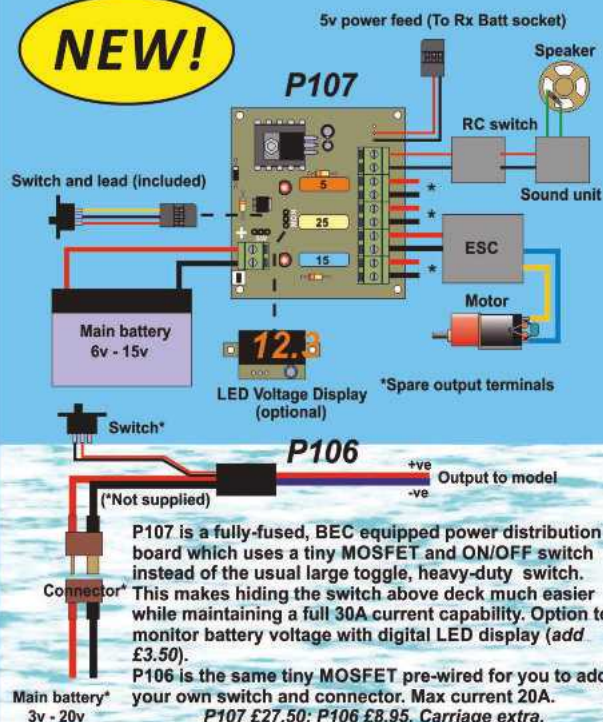


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Skimmer 5/600

Glynn Guest
presents this
month's Free Plan

The idea was to scale-up the design and make it capable of carrying the 500/600 size of motors...

My interest in radio controlled airboat models grew out of a combination of two things. First, in the mid-1980's the then Editor of this magazine suggested trying to build r/c models small enough to fit across a double page magazine spread and a little cunning soon showed that practical models were possible, even when using standard sized r/c gear. The second thing was my return to building r/c aircraft in order to take advantage of the wide open spaces that were only a short walk away from our home.

Luckily, at this time electric powered model aircraft were well established and I found the ones based on the SPEED 400 motors suited me perfectly. When thinking about building another small r/c boat, the idea to combine it with my newly acquired flying skills (which also included tree climbing!) appeared in the form of a small airboat model. This resulted in the Skimmer 400 design which was published in the February 1997 issue of

RCM&E, in the hope of luring the sky-borne antics of its readers down to water level. It seemed to be well received with reports of a few 15 inch (38cm) long things buzzing across the surface of ponds.

Alas, few model boaters appear to read RCM&E and the Skimmer idea was not so widely taken up by them. Paul Freshney rectified this by publishing this design in the September 2007 issue of MB. Again, it seemed to encourage a few to try their hand at air boating, some developing their own ideas, which is always an encouraging sign.

Twice the size and twice the fun....

A few years on and the thought of an enlarged airboat design appeared out of the proverbial 'nowhere'. The original design was powered by a 400 size electric motor and I knew that with r/c aircraft this called for a model weight of no more than 20 ounces (0.6kg). This was achieved by the use of battery packs made up from AA size NiMH cells. The idea was to scale-up the design and make it capable of carrying the 500/600 size of motors powered by a six cell sub-C battery packs, both items being widely available and probably offering the most economical method of producing a high performance model boat. Yes, brushless motors and LiPo batteries, which I do use to pull my aircraft around the sky, could offer greater performance, but if you already have 500/600 type motors and NiMH packs going spare, then why not? Plus, properly built airboat models can be exciting (if not approaching terrifying!) enough without the need for any extra power. From my experience with similarly powered fast electric models, the planned airboat model should be around double the power and weight of the original Skimmer 400 design. Since the hull had a flat bottom with just a curve upwards at the bows, the design process looked to be a simple task for once.

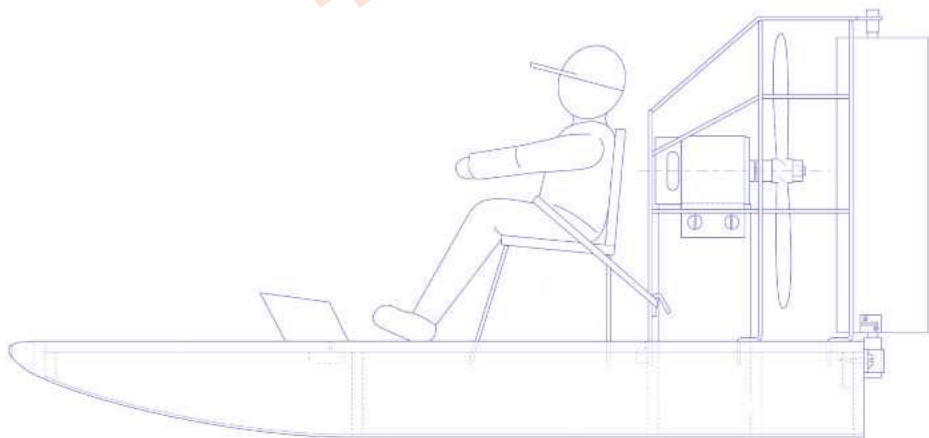
Doubling Up?

Taking the obvious approach of just doubling the original dimensions produced a length of 30 inches (76cm) and a beam of 13 inches (33cm). Drawing this out at full size and it looked way too large. I could not envisage it skimming across the water, wallowing maybe and perhaps even sliding, but never skimming in the exciting fashion you expect an airboat to move.

This is an example of the occasionally overlooked effect of scaling-up something, namely the 'cube law'. If you make something twice the size, in terms of length, then its volume increases by some eight times. This often results in a modeller being surprised at all the extra ballast needed to make their twice-size model float at the desired waterline. Going the other way and making a model half-size results in a model which has only one eighth the displacement of the original which creates the opposite problem.

Thinking that the new model would only need twice the displacement of the original Skimmer (to support twice the weight), the original dimensions were multiplied by the cube root of two (1.26). This gave a model length of about 19 inches (48cm) and beam of 8 inches (20cm). Now this looked better but, perhaps a shade small now?

Another thought was that these flat bottomed models depend on hydrodynamic lift when planing





across the water. This in turn is a function of the area of the hull bottom, so perhaps I just needed twice this area? This could be achieved by enlarging the original design by the square root of 2 (1.41). Such a model would be around 21 inches (53cm) long with a 9 inch (23cm) beam, which was not greatly larger than the double displacement hull size.

Clearly, a hull size somewhere in the region of these two hull sizes would be, as our American cousins would say, 'in the right ball park'. There was also experience with a similarly powered flat bottomed model, but using a water-jet rather than an airscrew, the Scudder (Model Boats Winter Special Edition 2013). With the need to ensure that the water jet was fully immersed when at rest (otherwise full power would likely make lots of noise but little 'go') it had been sized at 18 x 6 inches (46 x 15cm). This was a little smaller than my calculations for the airboat, but that Scudder was no slouch!

Armed with all this information I opted for an airboat hull length of 19 inches (48cm) and beam of 8 inches (20cm). This was a little wider than the Scudder design, but matched the calculated double displacement Skimmer size. It was also a convenient match with standard 4 inch (10cm) balsa sheet widths!

Design changes

Being very much a lightweight model, the original Skimmer design could get away with a simple structure. This enlarged version, with double the mass and inertia, would need something a shade stronger if all the parts were to stay together. Thus, the original balsa motor mount, which was just glued to the deck, was strengthened. A plywood core between balsa laminations was to be used and firmly stepped into the hull and glued to bulkheads and the hull bottom. Sheet balsa was used to make the original's hull bottom, but this looked to vulnerable in the enlarged design. Plywood, 1/16 inch (1.5mm) thick seemed to be a better choice and has so far resisted any impact with the usual flotsam on my local sailing water.

Materials

There is always scope for some changes in the materials used to construct any model. However, care is needed to avoid adding excess weight which will impair the model's performance. Conversely, reducing the weight must not result in any loss in strength. The model, as designed, ought to be able

to cope with the inevitable bumps and scrapes that a fast r/c boat will experience, although the ability to withstand ramming the landing stage at full pelt would be asking too much!

The major wood items used in building the prototype hull were:

Balsawood sheet (lengths)

Two of 1/4 x 4 inch (6 x 100mm)

One of 1/4 x 3 inch (6 x 75mm)

Plywood sheet

One of 1/16 x 8 x 18.5 inches (1.5 x 200 x 470mm)

One of 1/8 x 2 x 5 inches (3 x 50 x 130mm)

Dowel

1/4 inch (6mm) diameter x 10 inches (A spare piece will also be handy for alignment purposes)

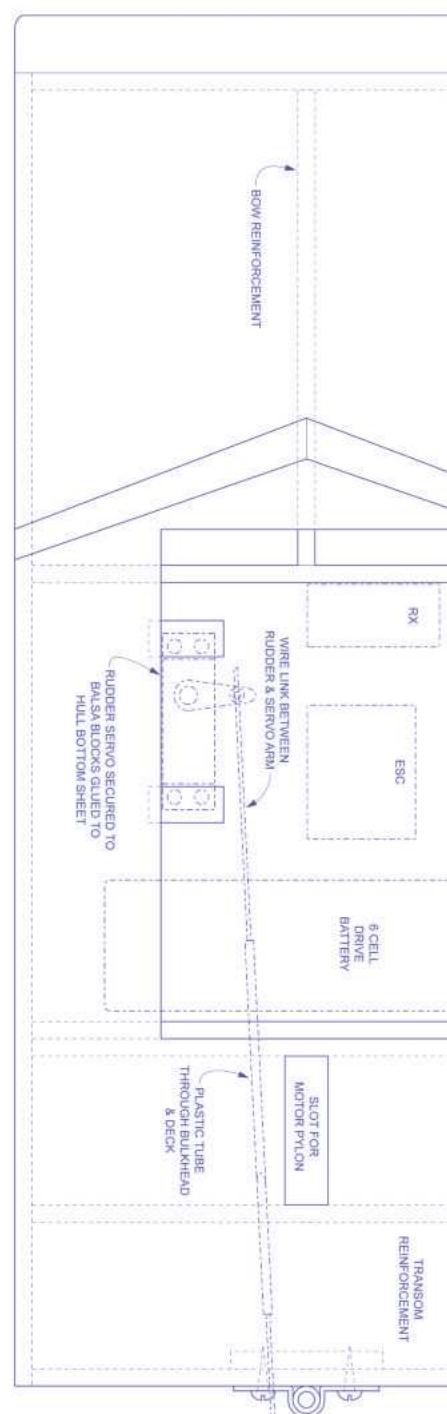
Other items were used to complete the model, but these could be made with substitute materials as mentioned in the construction notes. The wood to wood joints were made with a weatherproof woodworking adhesive. A small amount of epoxy adhesive was needed for the wood to metal joints in the wire safety cage. Epoxy could be used for the metal to metal joints in this cage, but I preferred to solder those.

The motor needs to be one of the higher power versions in the 500/600 range. Using a mild RE540 type will only result in disappointing performance. A suitable prop' adaptor is needed to mount the airscrew on to the motor shaft. As for the propeller size, I found my model to work well with a 6 x 4 inch (150 x 100mm) two blade type, but some experimentation will probably be needed to get the best results.

Hull construction

All the parts were cut out of 1/4 inch (6mm) balsawood sheet, an easy task since only three of them have anything but straight edges, **Photo 1**. It worth checking that all the edges of these parts are square to produce well fitting glued joints. Likewise, check that identical parts really are identical!

The two halves of the deck were glued together and kept flat until full set. I found it easier to cut the openings in the deck after gluing, **Photo 2**. The part cut out for the access opening must be saved as it forms the hatch to seal this opening. It is a good idea to mark the hatch part to indicate which way it fits into the deck.





The hull parts could be glued to the underside of the deck ensuring that they are square and are held firmly together whilst the glue sets, **Photo 3**. I made liberal use of pins pushed through these parts to prevent any movement. The square balsawood strip across the front of the second bulkhead where it is glued to the deck was added. This acts as a support for the deck hatch when fitted into the deck opening. An internal reinforcing piece made from scrap balsawood was glued to the inside surface of the transom.

Before reaching for the glue, the hull surfaces that the plywood bottom sheet was to be glued to were sanded using a sanding block wider than the hull. This was to ensure that these surfaces were flat and thus made a strong glued joint. The bottom piece was added to the hull in two stages. First, to the flat section between the bulkheads and transom using suitable weights to keep the glued joints firmly together, **Photo 4**. The second stage was carried out only when satisfied that the previously applied glue was fully set. I allowed the glue manufacturer's recommended setting times and added a little more just to be safe. After glue had been applied to the remaining edges of the hull, the plywood was bent to form the curved section and held in place with suitable clamps, **Photo 5**.

The rounded bow shape was created by gluing laminations of scrap balsa in place and then carving/sanding them to shape, **Photo 6**. You might have noticed that rather than trimming off the excess plywood that extended beyond the hull's bow piece, I incorporated it into the bow shape as it was just easier to do it this way.

Sealing the hull

Before adding anything to the hull, it seemed best to start the waterproofing process and preparation for the final coats of paint. Working on flat surfaces is so much simpler than on curved!

All the external surfaces were sanded smooth using medium and then fine sandpaper, wrapped around sanding blocks. When running at speed we want the water to break cleanly away from the hull bottom and not run up the hull sides or transom.

For this reason the lower edges of the hull must be kept as sharp as possible. Using thin plywood for the hull bottom helps to achieve this. Any cracks, gaps or dents need rectifying during this sanding process.

There are many different ways to waterproof a wooden model hull, but there is no perfect way that you must use. The only requirements are that it must waterproof, strongly adhere to the wood and form a smooth base for the paint. Wood primer and undercoats could be used; I'd recommend starting with thinned coats to ensure the wood grain is penetrated. Rubbing back, repainting repeatedly is needed to create a smooth surface without adding excessive weight.

Commercial water based resins, possibly along with thin woven cloth are favoured by some modellers. I'll confess to having no experience with this method, but suggest that if you do use it, then keep the weight down and the corners sharp!

I went with cellulose dope and tissue (model aircraft type) knowing that this would be quick and



also toughen the balsa against impact damage. A couple of thinned coats of dope, sanding after each, were followed by pieces of oversize tissue laid over the deck, sides and transom. These were held in place by brushing neat dope through the tissue, working one flat panel at a time, trimming off the excess from the edges before tackling the next panel. The outer surface of the hatch was also covered with dope and tissue.

No tissue was used on the plywood bottom sheet as I figured that its fine wood grain would be well sealed with the next two coats of dope applied. Light sanding of the doped tissue produced a smooth surface whilst still keeping the lower edges sharp. I suppose that the flat hull surfaces could also be covered by one of the plastic films often used on model aircraft. Again, it is something I've never tried, but some waterproofing of the wood prior to its application would seem wise.

Motor pylon

As mentioned earlier, the greater mass of a 500/600 motor required a more substantial mounting. A piece of plywood sandwiched between two pieces of balsa was made up, **Photo 7**. To ensure maximum strength, the pylon parts were kept firmly pressed together whilst the glue set.

The pylon was then checked for a snug fit through the deck slot with its bottom face on the plywood bottom sheet and perpendicular to the deck. When happy with this fit, the surfaces of the bottom, the slot and the two bulkheads that the pylon would be in contact with, were all coated with glue and the pylon pushed home.

Whilst waiting for the pylon glue to set, the spray deflector was added to the hull. It was cut from card to make a vee-shape that angled forwards when glued to the deck ahead of the access opening, **Photo 8**. When the model is correctly trimmed, little water comes over the bows at speed, but this deflector is handy for the occasional accident!

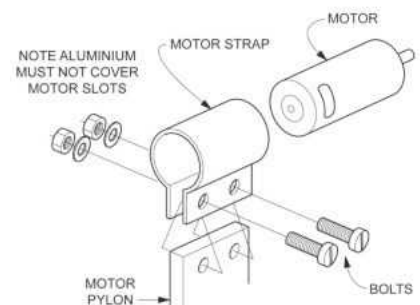
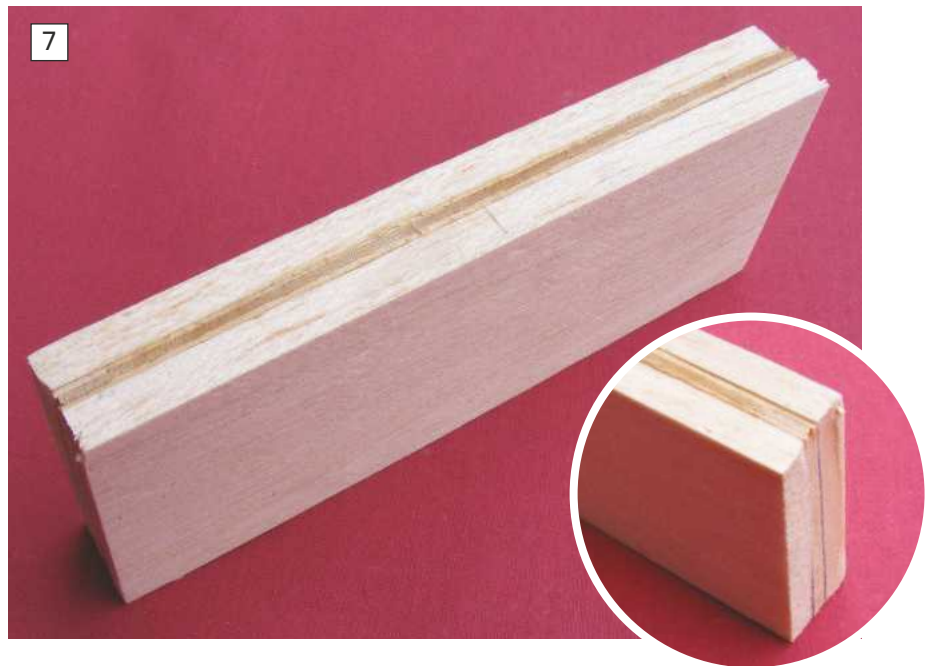
When the glue was dry, the pylon, deflector and whole external surface of the hull were given a couple of coats of neat dope. One great advantage of cellulose dope is that each successive coat partially dissolves and melts into the previous coats and avoids delamination.

The motor was secured to the top of the pylon with an aluminium strap, wrapped around its body. Flanges at the ends of the strap extend down on the pylon for two bolts to hold it in place, **Photo 9**. If the strap is a little too large to firmly grip the motor then some tape can be wrapped around the motor case, but do take care not to cover the ventilation slots in the motor case.

Propeller guard

You could operate this model without the guard, but it seems a sensible precaution against curious spectators and absentminded modellers! This guard also acts as the top support for the air rudder and convenient anchor points for the driver's seatbelt which also helps keep the hatch in place.

The prototype guard was made from some brass wire, about 1/16 inch (1.5mm) in diameter found in the scrap box. It may look a trifle flimsy, but has proven strong enough. Anything larger, and





two screws through the transom and into the internal reinforcing piece. The upper bearing was soldered into a loop made in the piece of wire running across the top of the guard. You could use epoxy adhesive, but again I'd also wrap some thinner wire around the tube and guard for extra strength.

To keep both top and bottom bearing tubes correctly aligned whilst fitting to model, a spare length of dowel was slipped through them, **Photo 10**. This simple idea can save a lot of problems when the rudder is fitted!

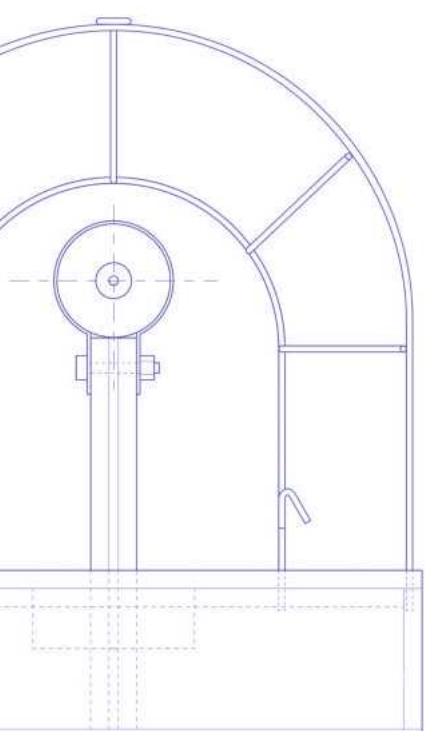
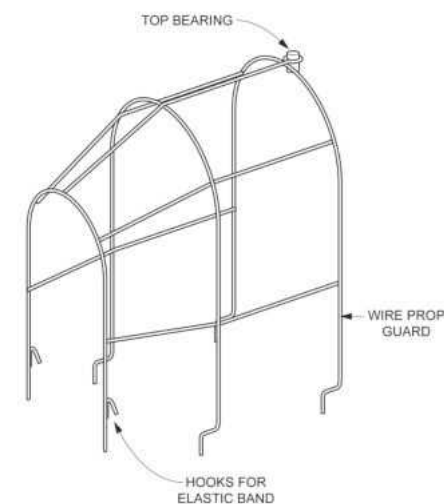
Rudder servo

With the rudder fitted to the model, its linkage to the servo could be made. A small plastic control horn, the type used on model aircraft, was secured to the bottom of the rudder. The servo was installed in the model using two blocks of balsa glued to the plywood floor, **Photo 11**. If your servo will not fit in upright, then it can be installed on its side.

Using the rudder horn and servo as a guide, a hole was made through the deck and second bulkhead. There was no finesse in my 'hole-making' technique - I just pushed a screwdriver through the balsa then opened up the holes with a small round file and through these holes a plastic tube was threaded.

The actual wire used to make the linkage was a length of plastic coated steel wire. It was the type sold in the display of plastic sections that any good model shop ought to have. It is favoured by plastic modellers whenever small sections are required, but with greater strength and stiffness than just plastic could offer. This wire has the advantage of having a smooth low friction surface and is ideal when you need it to slide inside a tube. Also, being plastic coated, it will not rust inside the tube, a problem once encountered in a kit model and since avoided like the plague!

A Z-bend was made at the wire end which fitted into the rudder horn, about as simple and secure method as you can make, **Photo 12**. The other end of the wire slid through one of those adjustable connectors secured to servo arm. It was a simple job to adjust the linkages until a smooth and even action giving something like 35 to 40 degrees of rudder movement in both directions, was obtained.



hence heavier, would add unwelcome extra weight high up, which might impair the model's stability. Steel wire would be a good alternative material otherwise.

The guard was made from two large arches and one smaller one, the curved shapes being formed by bending them around paint tins. The lower ends were bent into a Z-shape before being epoxied into holes in the deck. This will produce a stronger fitting than leaving the wire ends straight.

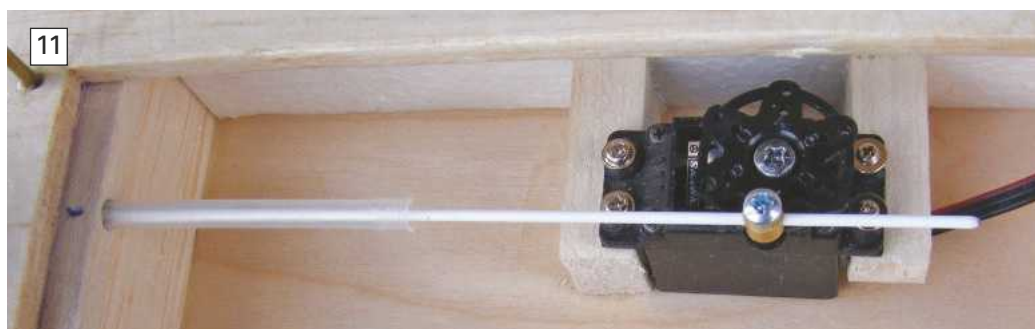
The arches were then joined by five pieces of wire bent to accommodate the smaller front arch. I soldered the wires together for strength and speed, but epoxy could be used provided the wire surfaces are cleaned first. I'd also be inclined to reinforce each joint by tying some thinner wire around the joints before applying any epoxy in those circumstances. Two small hooks for the drivers' seatbelt, were secured to the bottom of the front arch and do get them the right way around!

Air rudder

You could use a rudder that was hinged to a fixed fin aft of the propeller, but like its smaller brother, this model featured a balanced all moving rudder. As a result, this required a bearing on the transom and one at the top of the prop' guard.

The rudder was made from balsa laminations around a central length of dowel, please see the plan for dimensions. This allowed a streamlined rudder section to be made whilst the lower end of the dowel acted as the shaft upon which it rotated. The rudder was then sealed with 3 to 4 coats of dope, sanding between each.

The bearings for the rudder dowel were made from lengths of brass tube (from scrap box again), but any other tubes could work, provided it can all rotate smoothly. The lower bearing was secured to the transom by an aluminium strap held in place with



DRIVER FIGURE CARVED FROM FOAM
OR USE A LIGHTWEIGHT DOLL

13

Hatch and driver

Two small pieces of balsa were glued to the underside of the front edge of the access hatch. These could then slide in and under the fixed deck to secure it. The rear edge of the hatch sits in the balsa strip glued across the top of the second bulkhead.

An airboat model could be sailed without a driver figure, but adding one seems to greatly increase the visual appeal of the model. I'd advise resisting the temptation to use a commercial doll to man your boat as it will add significant weight and also high up, which is the last place you need it.

The prototype figure was just cut, carved and sanded out of scraps of expanded polystyrene plus a table tennis ball for its head. The joints between the limbs and torso were strengthened with lengths cut from a bamboo skewer which had been coated with wood glue before insertion. I did attempt to make my driver have the right anatomical proportions, but without any details. As a result, my family suggest that he looks like an escapee from a mad scientist's laboratory, unfeeling lot that they are! A simple seat was made from scraps of balsa and wire secured into the hatch, **Photo 13**.

Painting

The original Skimmer model had been painted silver to suggest the aluminium construction that is often used to make the full-size airboats. This worked well and so this model was also sprayed with an aerosol can of silver paint. The original model also featured a bright red rudder and this had proved handy for the situations when you might have been unsure just which way the model was pointing, so this was copied on this model.

The driver figure required some clothing painting on this body. I did not fancy sailing the model with what might appear to be an 'au-natural' driver. To seal the expanded polystyrene body, it was given a couple of coats of some left-over domestic emulsion paint which had an approximate flesh tone. Some enamel paints were then used to suggest the driver was clothed, after which he was glued to the seat with latex adhesive.

Radio control installation

Although the model was designed with sealed and hopefully watertight compartments in the rear, some extra internal buoyancy was added. This took the form of expanded polystyrene wedged either side of the central compartment under the fixed deck. So far the model has not needed to use the extra buoyancy, but I do feel better for adding it. Knowing that this type of model needs to balance about one third of the hull length ahead of the transom, the internal items were moved around until this was achieved. The six-cell battery pack was found to be best sited against the front of the second bulkhead.

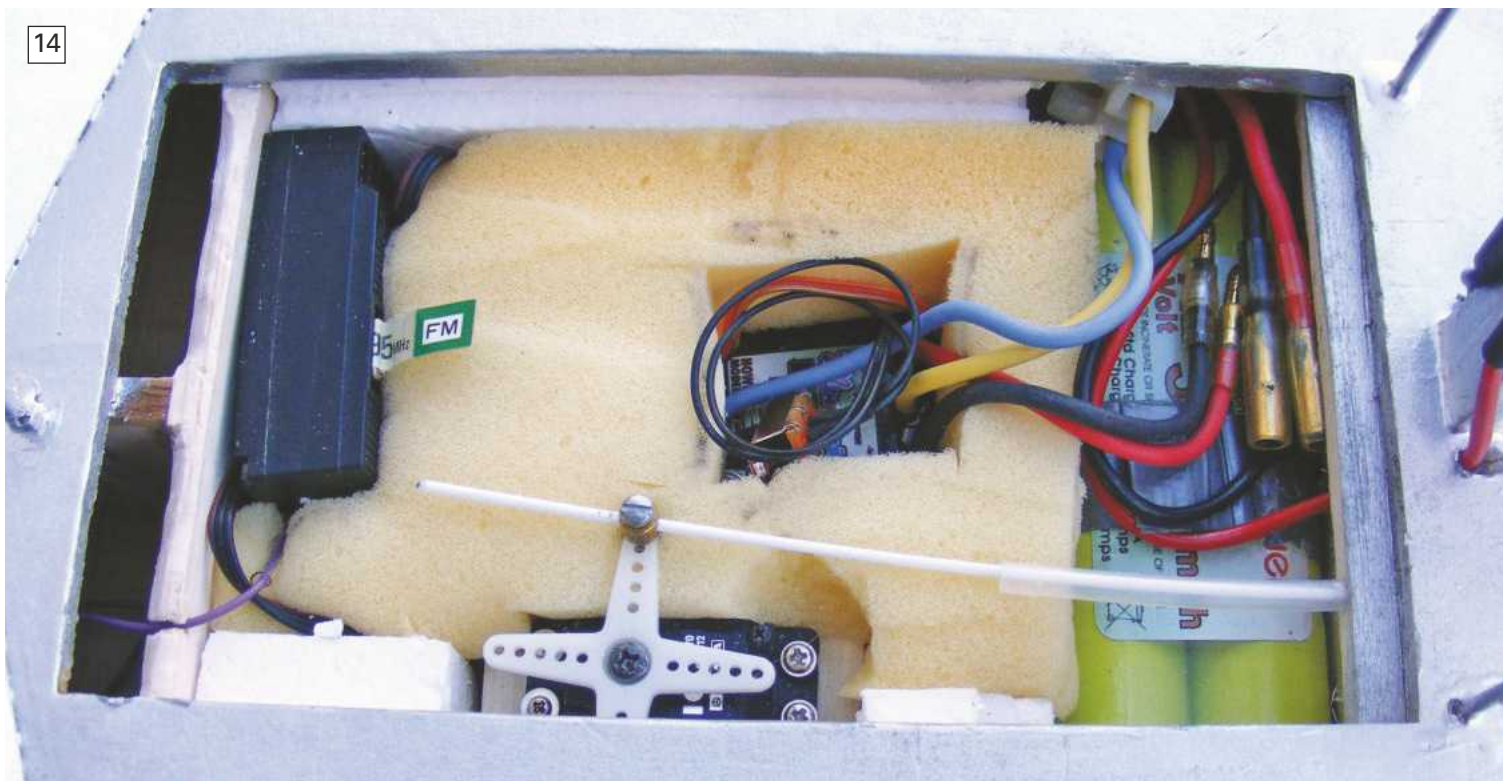
A piece of foam plastic was cut to fit into the compartment and hold the battery firmly against the bulkhead. A couple of cut-outs were made in the foam to hold the electronic speed controller and receiver in position, **Photo 14**.

As a 40MHz radio outfit was being installed (no reason for using it other than it was lying idle and I knew it was reliable), an aerial had to be fitted to the model. Just running the aerial around the inside of the



...my family suggest that he looks like an escapee from a mad scientist's laboratory...

14





15

“...some people are happy to throw their latest model into the water as soon as they have shovelled the radio gear inside the hull, a little checking is usually prudent!”



hull would not be a good idea when safe operation of a fast model is needed. A 12 inch (30cm) length of plastic tubing was fitted and glued through the deck just behind the spray deflector. The receiver's flexible aerial wire runs up this tube with a short length hanging free, giving an adequate operating range, but is of course no substitute for ensuring that the rest of the r/c system is working perfectly!

If using 2.4GHz radio, with its shorter receiver aerial(s), then I would be inclined to install the Rx as high up as possible. Airboats can produce spray and splashes when sailing and this higher frequency can be absorbed by water which might lead to loss of control.

The power leads to the motor were run down and through holes in the deck, then through the bulkhead and into the radio compartment. A little sealant where the leads entered the hull maintained its water tightness. After fitting the propeller adaptor to the motor shaft, the propeller was fitted taking care to get it the right way around in this 'pusher' mounting.

With the hatch in place it should be secured at the front edge with the two balsa pieces slipping under fixed deck. They should be 'snug' and if needed, then some light sanding can be used to remove any excessive tightness. The rear of the hatch was held down with an elastic band stretched between the two hooks and across the drivers' waist, **Photo 15**, which is also the complete model! The model's weight was checked and came out at about 42 ounces (1.2kg). This was a shade more than intended, but not enough to worry about.

Pre-sailing checkout

Although some people are happy to throw their latest model into the water as soon as they have shovelled the radio gear inside the hull, a little checking is usually prudent! The rudder servo should operate in the correct sense, i.e. right transmitter commands produce right rudder movements and likewise,





pushing the throttle stick for ahead ought to generate a healthy draft backwards. It may be amusing to watch the antics of modellers who fail to carry out these simple checks, but it's no fun being one!

A test float is also a good idea. With the balance point as suggested, the model will appear to sit stern down when at rest and this is okay, but I did also wonder if the model's centre of gravity ought to be displaced to one side so as to counter the torque from the propeller. In fact this proved to be unnecessary, so just trim the model to float without any noticeable list.

On the water

If you are the type who puts a new model in the water and hits full power straight away, then you have either now mastered the different art of sailing airboat models and do not need to read any further, or you are now the owner of a damaged model and ought to have read what follows!

Airboats do not handle like normal boat models where you can usually expect an immediate response to any rudder commands when moving at speed. A flat bottomed airboat hull may slew as soon the rudder is moved, but it has the habit of carrying on in much the direction as before whilst the turn takes a little time to develop. Once you get familiar with this characteristic, then it can become great fun to slide about on the water, making wide and high speed turns.

For this reason I make two suggestions for your models and perhaps your own personal safety.

One: Do sail this model on a large enough piece of water. I'd be reluctant to use anything less than a 50 yard (50m) square area of water, at least until I'd become completely familiar with its handling.

Two: Avoid sailing it anywhere too close to other radio control (and more sedate) models.

If your electronic speed controller has reverse then save that for 'emergency stops' only. Any attempt to move at speed astern will, because of the flat transom, rapidly swamp the model. Gentle astern power can however be useful for backing out of trouble, but do not expect any steering!

The high speed running trim of the model should be more or less level with just a touch of the bows lifting, **Photo 16**. If the model 'porpoises', that is the bows repeatedly lift and fall whilst travelling at speed, then the model's centre of gravity needs

moving forwards. This can be done by moving the battery, but with only small changes at a time until this effect stops. I've never encountered an airboat running with its bows too low and thus risking submerging, but if it does happen, then internal weight needs to be moved rearwards.

Applying too much rudder or keeping it on for too long can result in the outer edge of the hull digging-in. This throws water up into the air and quickly brings the model to a stop. This will greatly excite and amuse spectators, but has yet to cause me any problem!

Airboats?

Well, they are different! The differences being handling, appearance and even the noise of the airscrew and water slapping on the flat hull bottom is a change from a normal scale model. They are surprisingly easy to build and very cheap too if you happen to have the bits lying around. So, go on give it a go, or better still, perhaps three or four of you in your club could each build one. They can be as much fun as Club 500 boats and of course never get weed around their propellers!

Enjoy your hobby - **Glynn Guest**

Airboats do not handle like normal boat models where you can usually expect an immediate response to any rudder commands...





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LEFT: HMS Leander berthed at The Boston Navy Yard in the USA.

of HMS Leander when she was under refit at the Boston Navy Yard in the USA between January 1944 and late-August 1945. These pictures show the many changes made in terms of weapons, radar and her overall appearance. These pictures are limited in scope, but do provide an insight into the fittings of the day providing the model builder with some useful information not always available from the drawings. It was common practice for all warships going into US Navy shipyards to be extensively photographed with images as good as any digital picture produced today.

A bit of history

Before commencing the Photo Tour, here is a general overview of the ship. HMS Leander was laid down at Devonport Dockyard on the 8th September 1930 completing on the 24th March 1933. Length overall was 554ft 6ins with a beam of 55ft and a standard displacement of 7386 tons. This class of ships was built to conform to the six inch gun cruiser conference resolutions of 1929. She was designated as a light cruiser and was fitted with eight 6 inch Mk. XXIII guns in Mk. XXI mountings, having a particularly high elevation of 60 degrees. Also originally fitted were four 4 inch Mk. V guns in single mountings, which were upgraded to four twin mountings before WW2, eight 2 pdr AA guns, plus twelve 0.5 inch machine guns. There were also eight 21 inch torpedo tubes in two quadruple mountings and a single catapult, but no aircraft hangar.

Propulsion was provided by four propellers driven by geared steam turbines developing 72000shp in total. HMS Leander introduced extensive welding as part of her construction and as a cost reduction feature, an aft fire control director was not installed, thus reducing the ability to engage more than one target at the same time.

From 1933 until 1936, HMS Leander served as Flagship of the Second Cruiser Squadron in the Home Fleet and in 1937 she was transferred, initially on a three year secondment to the New Zealand Navy Division and represented that country at the Spithead Coronation Review of that year. At the start of WW2, HMS Leander was patrolling New Zealand waters and later supported Commonwealth forces from the Red Sea to the Mediterranean.

With Japan entering WW2 in December 1941, the now HMNZS Leander became part of the original ANZAC Squadron. She later joined US task Force 36.1 in July 1943 in the Kula Gulf area of the Solomon Islands group, better known as 'The Slot'. The aim was to thwart re-supply efforts by the Japanese destroyers of the so called 'Tokyo Express'. In the confused night action of the Battle of Kolombangara (also known as the Second Battle of Kula Gulf), she was hit by a number of torpedoes. Although severely damaged, she managed to return initially to Auckland for repairs before being sent to Boston for an extensive refit. Following that refit, she reverted to the Royal Navy becoming once again, HMS Leander.

HMNZS (HMS) Leander in the Boston Navy Yard

We can commence our Photo Tour with a general picture on the starboard side, **Photo 1**. Moving over

Range Finder



Dave Wooley with his *Worldwide Review of Warships and Warship Modelling*

Welcome once again to our regular sortie into the world of fighting ships and we have a look at the light cruiser HMS Leander during her 1944/1945 refit in the USA. We also have the last part of our mini-scratch build project of the Halmatic Pacific 24 RIB and our usual Mystery Picture slot.

HMS Leander

It's not often that onboard detailed pictures emerge of RN warships from the WW2 period. Thanks to the research of Bill Clarke, a small number of superb black and white images were made available

PHOTO 1. An excellent starboard side view of the hull where extensive use was made of welding.





PHOTO 2, A view of A and B turrets with the detail on the rear of the turrets clearly visible.

PHOTO 3. Port side of the bridge showing the distinctive type 285 Yagi array secondary battery radar director.



to the port side in **Photo 2**, we have a better view of A and B turrets and some of the detail behind them.

Part of the refit was to improve gunfire control and which included the port and starboard type 285 Secondary battery radar with its distinctive six Yagi antennae, **Photo 3**. Above that, on top of the bridge is the 'double cheese' of the type 274 six inch battery fire control radar. I used the word 'double' as the radar mounting uses two superimposed arrays, each measuring 14ft x 7ins, and a better view of this can be had in **Photo 4**. Also this picture shows a considerable amount of the detail around the bridge superstructure. Immediately behind the main fire control director is the raised platform of the Type 277 radar, a hugely successful device for surface search, height finding and as a low flying detector. This was a radar considered by Norman Friedman in his book 'Naval Radar' as the best British naval radar of WW2, **Photo 5**, and it's worth noting the structure supporting it.

Photo 6 enables you to see the tripod foremast and the funnel casing and in the same picture is a good view of the aft four inch twin turret and in the foreground the port 21 inch torpedo tube mounting. Note the riveted seams of the funnel casing, whereas much of the hull was welded.



PHOTO 4. There is a wealth of information in this picture to aid the model maker, an example being the pipework on the side of the bridge structure.

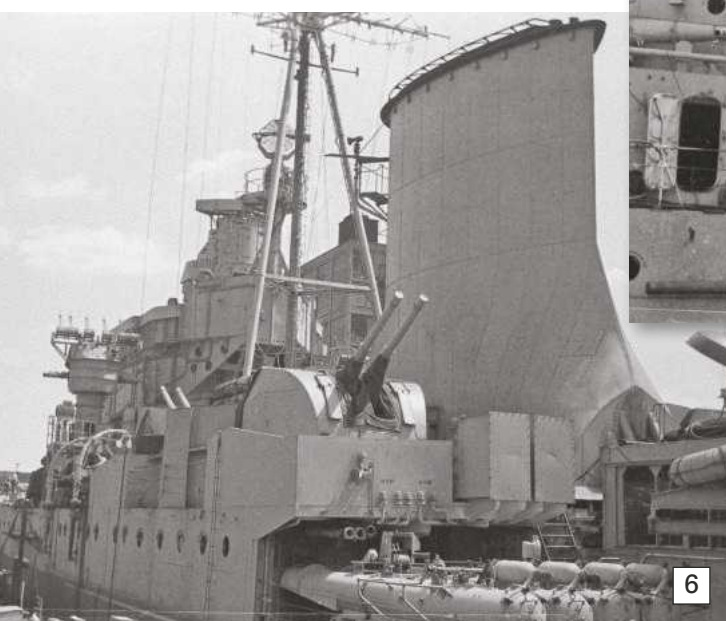
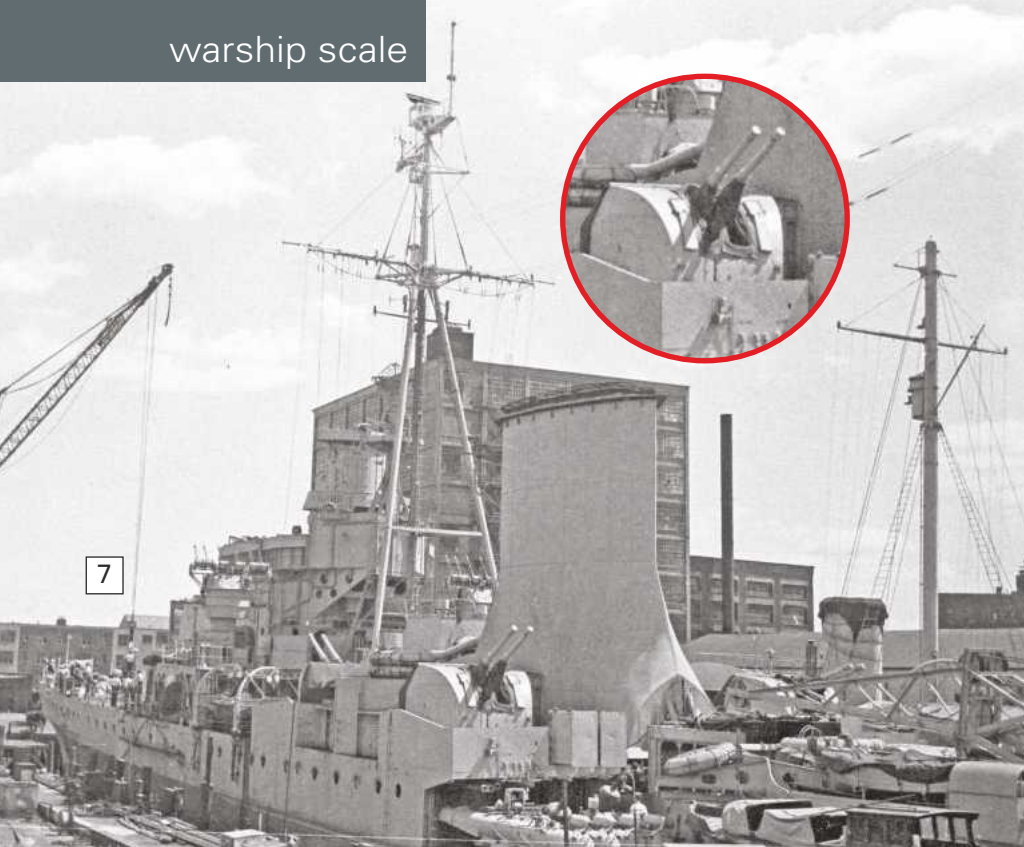


PHOTO 5. As part of the refit at the Boston Navy Yard, an extension was made aft of the bridge to accommodate the raised platform for the Type 277 radar.

PHOTO 6. Aft of the funnel casing with the quadruple 21inch torpedo tubes in the foreground on the main deck.





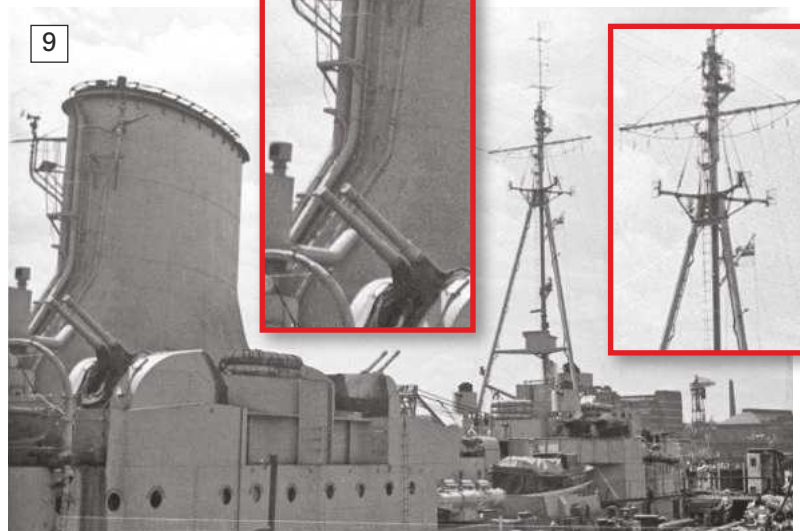
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PHOTO 7. A more general picture from amidships looking forward.

PHOTO 8. The amidships area of HMNZS Leander was extensively modified, although retaining the crane. The aircraft catapult was removed and some of the boat storage space used for additional anti-aircraft guns.



8



9

PHOTO 9. Here the pipework around the front of the funnel casing is clearly visible, along with the structural detail surrounding the 4 inch battery.

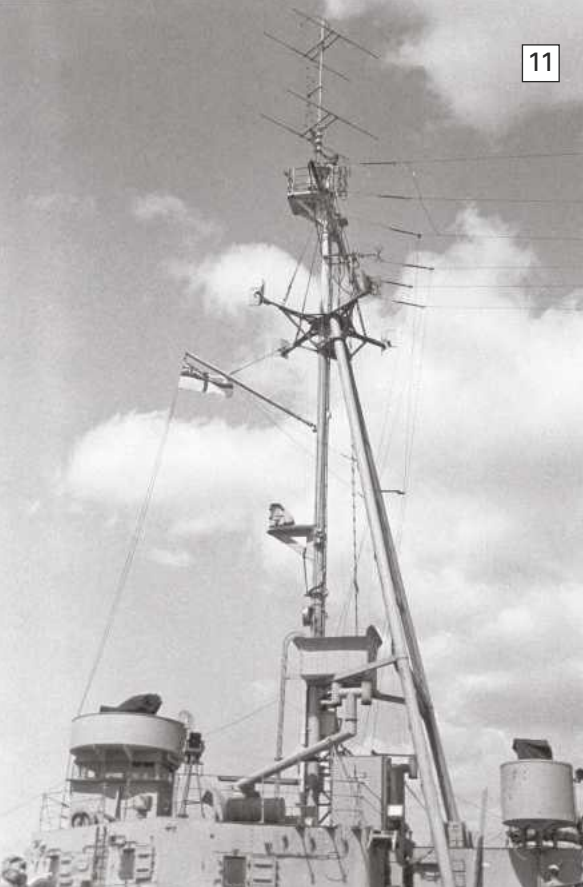
PHOTO 10. As part of the refit, quad 40mm Bofors were added just forward of the main mast and these can be seen covered in canvas.

Moving further aft, **Photo 7**, amidships we have a more general view of the area so far discussed. As part of the refit, and just forward of the main mast, a section of the boat deck was taken by raised tubs (port and starboard) for quadruple 40mm anti-aircraft guns. One of these is clearly visible here, together with the ship's motor boat adjacent to the crane, **Photo 8**.



10

In **Photo 9**, which is a more general view looking aft on the port side, we can see more clearly the main mast and the pipework tracked up the front of the funnel casing. Further aft, but still on the port side and now looking slightly forward in **Photo 10**, are some of the platforms for the Carly floats.



11

PHOTO 11. A starboard side view of the main mast.

Our next picture focuses on the main mast, **Photo 11**. Note how the tripod is back to front, in that its two supporting legs are forward of the main upright and you can also just see the white ensign. On its first upper platform where the legs meet the upright, there are four struts supporting what appear to be four concave dishes. There is no information available as to the function of these, but my guess is that they may be passive radar detectors. At the head of the mast are two H Type arrays for the 279B Air Search radar.

Photo 12 is an interesting picture as it shows the absence of X turret which was removed during the early part of the refit, with the space being taken by single 20mm guns to port and starboard and a power operated twin 20mm on the centre line. Note the covers for the windows of what are probably the wardroom and/or officers cabins.

Photo 13 is a view looking aft at the quarterdeck and the activity thereon. The remaining pictures are a real snapshot in time as they not only show more of this work and details such as the hatches,



12



13

but also the shore workers, such as the carpenters, getting HMS Leander back into fighting trim, **Photos 14 and 15**. All a bit different then with no hard hats, hi-visibility clothing etc. and I have not got a clue what the function is of the large concrete weights on trolleys in this last picture!

It's a pity we don't have more pictures showing more of the on-board detail, but to have access to these few is a bonus and they may be of some help to those wishing to build this HMS Leander cruiser.

PHOTO 12. X turret was removed to provide space for additional anti-aircraft weapons.

PHOTO 13. Y turret with 40mm single gun tubs sited on the quarterdeck.

PHOTO 14. A superb view of the deck hatches and importantly for the model maker, the width of the deck planking can be readily determined.

PHOTO 15. A clear view of the front of Y turret.



14



15

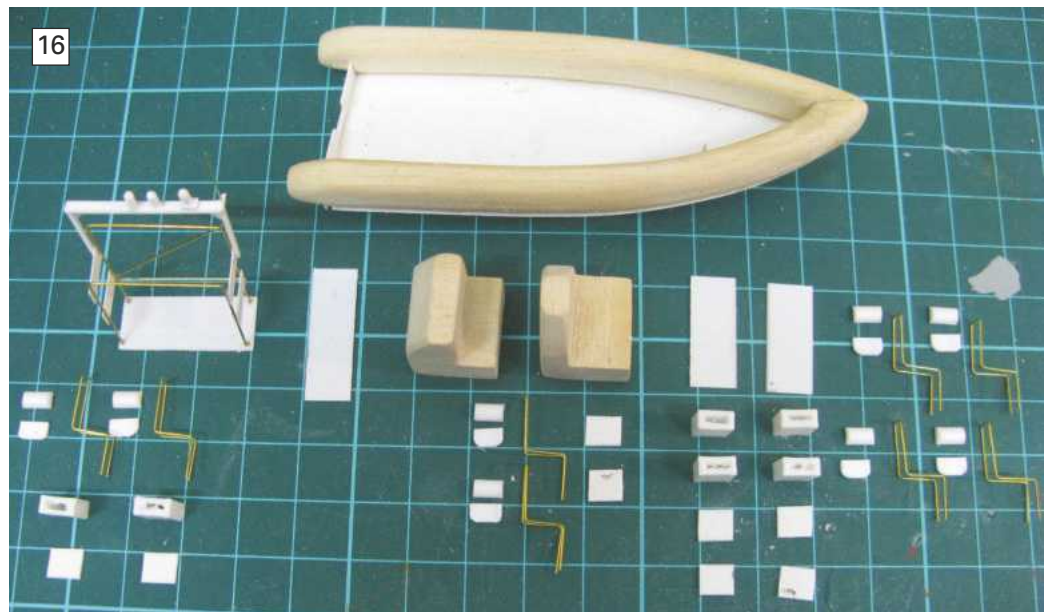


PHOTO 16. Most of the basic internal fittings for the Halmatic RIB are ready in this picture.

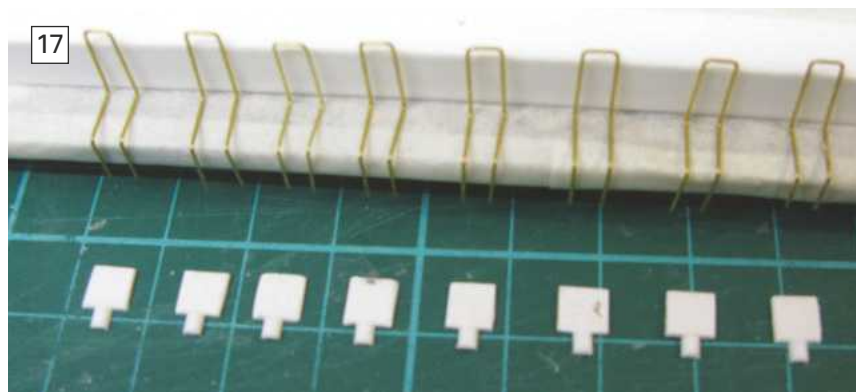


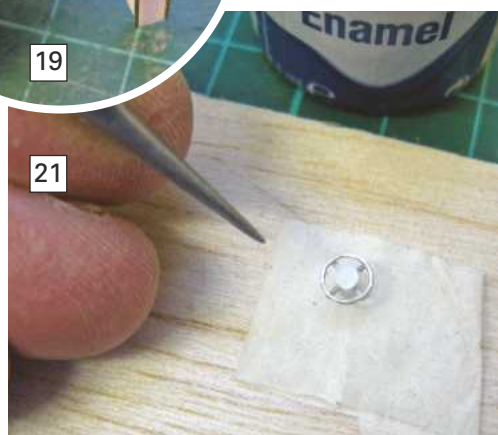
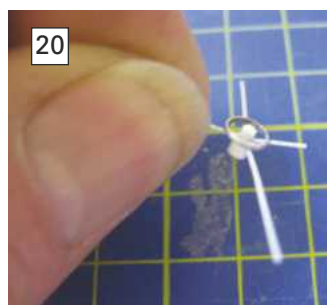
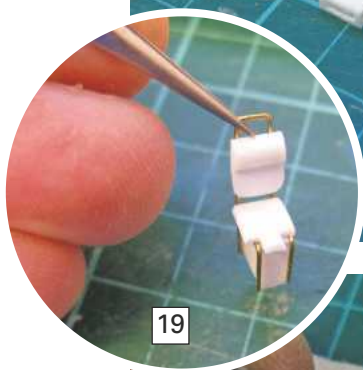
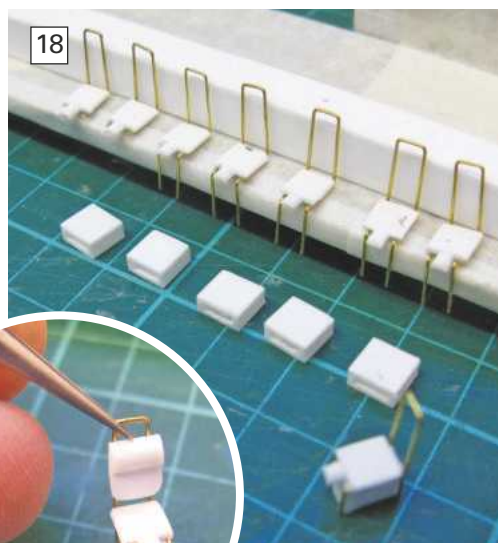
PHOTO 17. Seats and more seats!

PHOTO 18. Styrene rectangular box section was used for the seating supports.

PHOTO 19. A fully assembled seat with its back padding in place.

PHOTO 20. The steering wheel(s) used aluminium tube, litho plate and styrene rod.

PHOTO 21. A completed steering wheel.



Halmatic Pacific 24 Rigid Inflatable Boat - Part Two

In the September issue, we concluded with the basic RIB hull complete and the next task was to prepare its internal fittings and jet drive.

The Halmatic Pacific 24 is designed to operate with two crew and seating forward of the conning position for six persons. Using the various pictures available and those taken of HMS Daring's own RIB, the dimensions of the modular seating were determined, together with the various other fittings which includes the support framework for the self-righting system. Add to that the engine box cover and control console, and in **Photo 16** we have most of these parts laid out. This 1:72 scale model measures 103mm in length x 43mm in beam, so it is quite small and I shall now explain how some of these parts were made and it was painted.

Seating

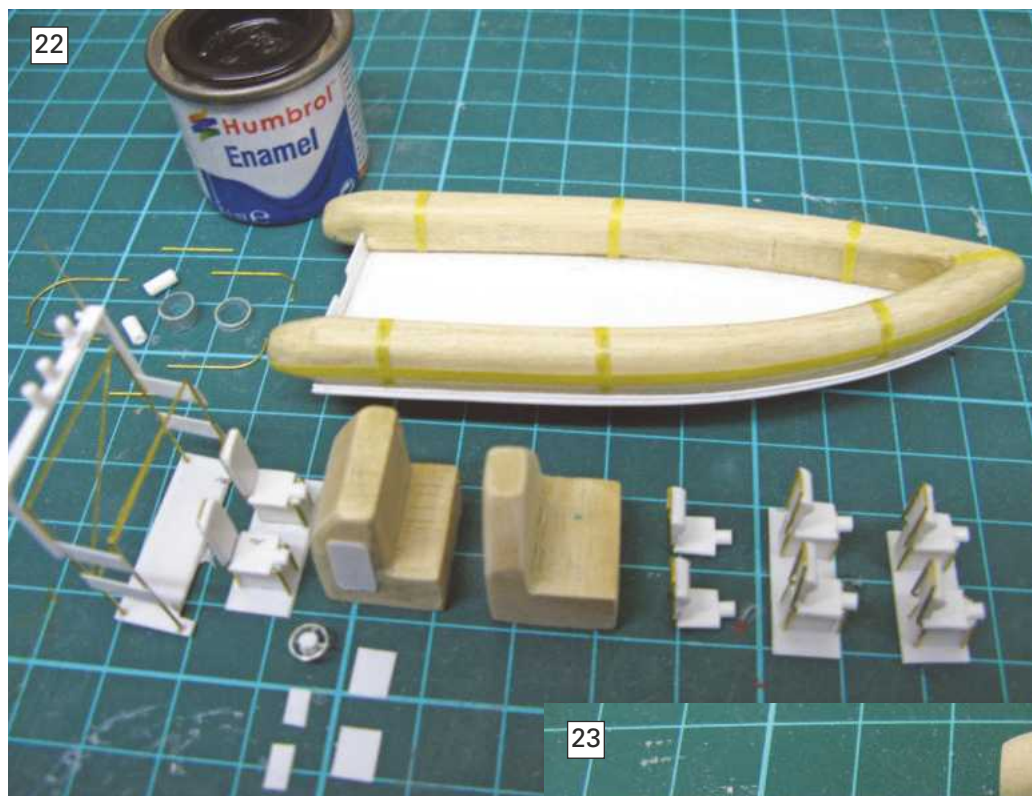
Using a simple jig, the basic frame for each seat was folded into shape from 0.45mm brass wire. All the frames were temporarily attached to strips of timber covered with masking tape, the purpose of which was to enable the easy positioning and fixing of a seat and its back rest. Each seat was made from 1mm styrene sheet cut to size and rounded on its edges. A half-round styrene strip 2.5mm (Evergreen 143) was fixed to the front edge as in **Photo 17**.

With the bottom 'cushion' in place, the frames could be attached to lengths of box section 3.2mm x 6.3mm (Evergreen 257) which formed the base into which each seat could be located, **Photo 18**.

Each frame is fitted with a back rest. This consists of a lower portion made from 1mm styrene sheet, slightly radiused, and the upper 3.2mm half round section (Evergreen 125), **Photo 19**. All one now had to do was make enough for the two RIB's!

Steering wheels

These can be made from a suitably sized photo-etched wheel available from manufacturers such as Scale Link, website: www.scalelink.co.uk. However, I decided to create each steering wheel using a section cut from a length of 4mm o.d. aluminium tube. This was chosen because there is a noticeable thickness of the rim and the edge of the aluminium could be gently rounded to become like that seen on the Halmatic Pacific 24. The centre of the wheel was created using 2.4mm o.d. styrene tube (Evergreen 223) with a centre of 1.6 mm styrene rod and strips of litho plate forming the spokes, **Photos 20 and 21**.



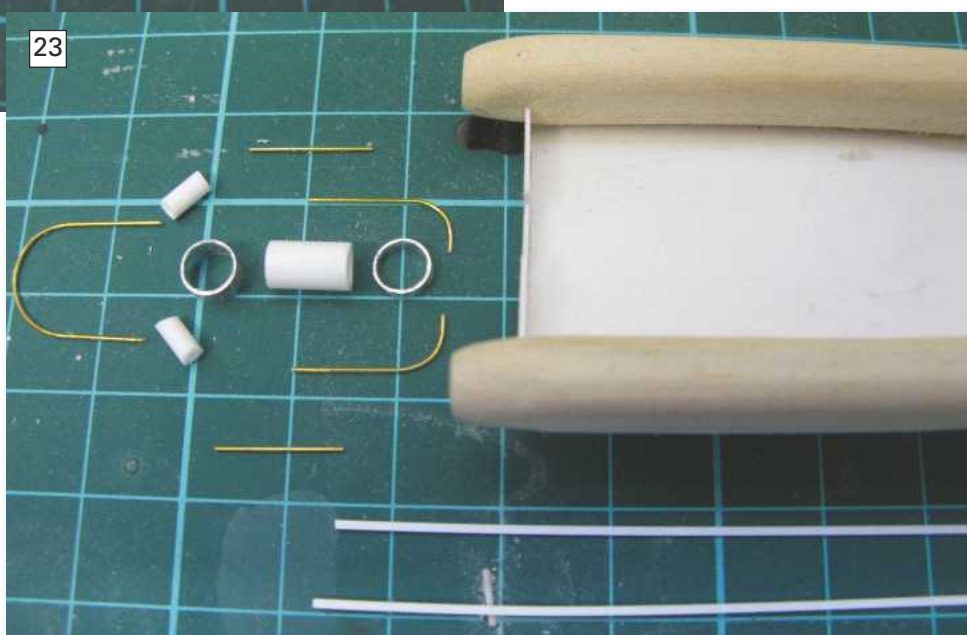
The Halmatic Pacific 24 is water jet powered by a six cylinder Yanmar marine diesel engine.

Preparation for assembly and painting

To help in the assembly process the seating was located on strips of 0.5mm styrene sheet. This ensured that their location and spacing was consistent throughout whilst also making the ultimate installation of such small items less troublesome. **Photo 22** is of all the internal parts now laid-out. The control console and engine cover are cut and shaped from Jelutong timber, but you could use an alternative. The self-righting inflatable bag will be made fitted on completion of painting.

Jet drive assembly

It's worth mentioning this, which can be seen behind the hull in the last picture. The Halmatic Pacific 24 is water jet powered by a six cylinder Yanmar marine diesel engine. The actual jet unit was made using a series of tubes. This is a simple process, yet produces a realistic enough appearance when assembled. Basically there is the securing ring using 5.5mm o.d. aluminium tube fixed to the transom, into which is inserted a 4.8mm styrene tube (Evergreen 226) to create the body of the jet drive, and then there is the outer ring and two lengths of 2mm o.d. styrene tube for the rotating water jet heads. Around this assembly is a frame to protect the jet drive unit and this consists



of five individual parts in total: The horizontal U frame; two radiused side supports and two straight lengths that will be fixed to the underside of the U frame and to the transom, **Photo 23**.

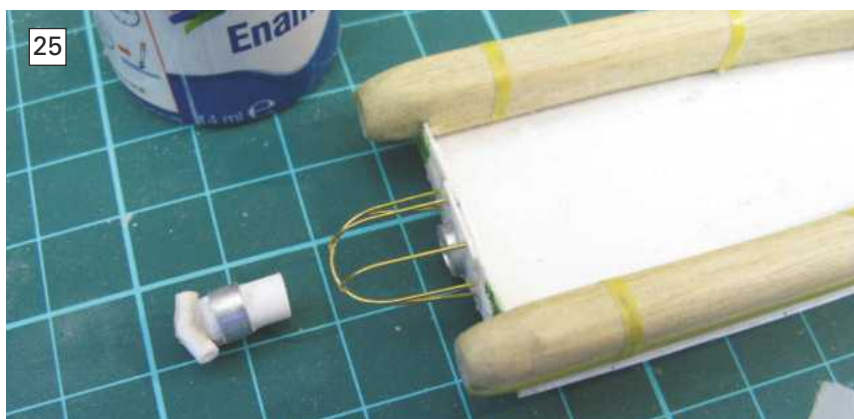
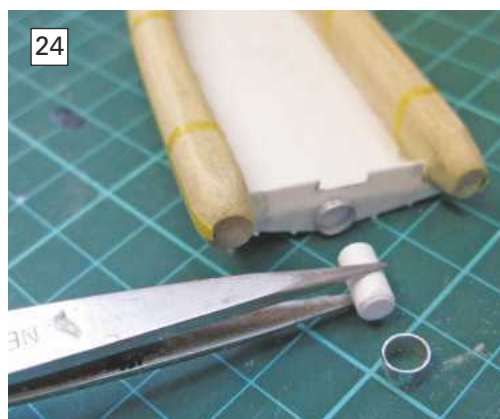
The styrene tube blanked off at the end was aligned with, but not fixed to, the aluminium tube on the transom, **Photo 24**, and the two smaller tubes were added as in **Photo 25**. Please note that the frame covering the jet drive has been added to

PHOTO 22. A Halmatic RIB hull and its fittings all ready for airbrush painting.

PHOTO 25. The jet drive protective frame has been fixed to the transom.

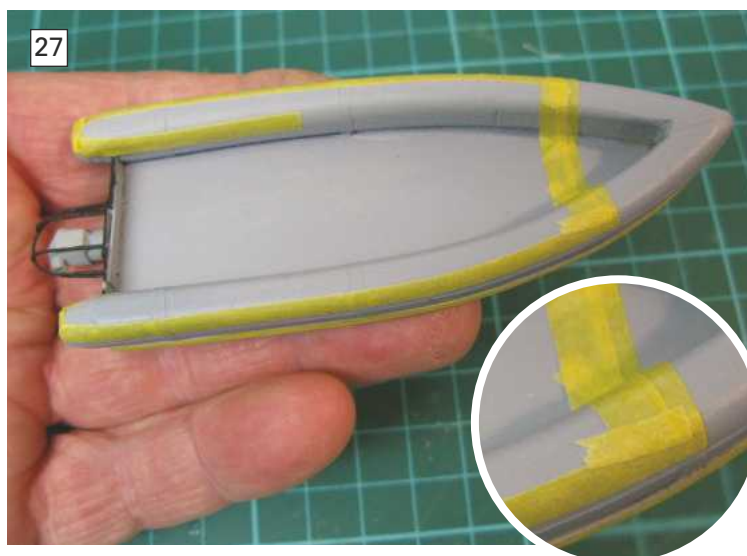
PHOTO 24. A bit fiddly, but the jet drive unit does all fit into the transom.

PHOTO 23. Pre-positioning the seating on a dedicated bases makes their final fixing in place a much easier task.

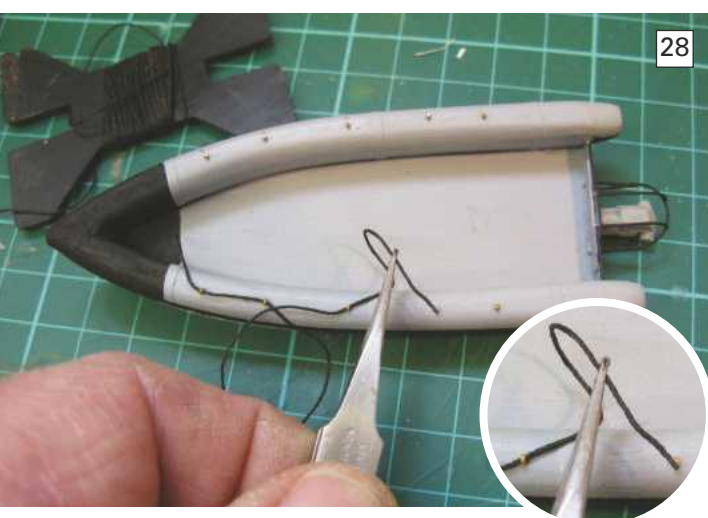




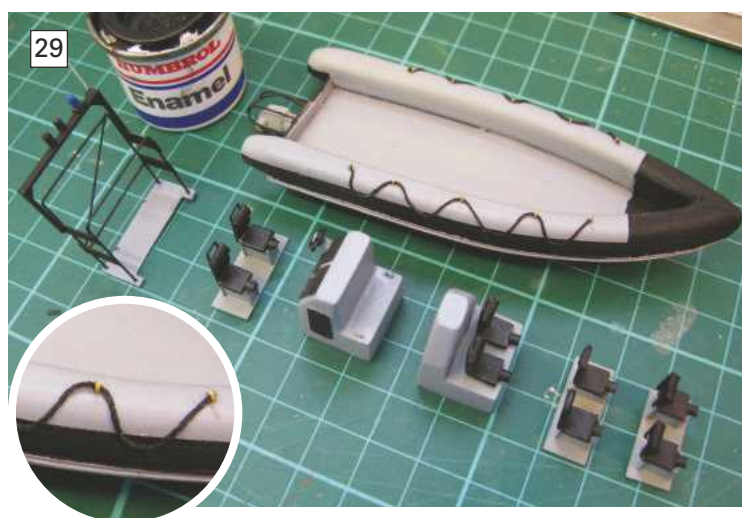
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27



28



29

PHOTO 26. All the parts were airbrushed with WEM Modern RN Grey.

PHOTO 27. Low-tack tape was used to mask around the parts of the collar that will be painted black.

PHOTO 28. Threading the eyes to form the hand grips on the top of the collar.

PHOTO 29. With all the fittings painted, final assembly of the Halmatic Pacific 24 can commence.

PHOTO 30. Additional touches include the instrument panel and the single point lifting harness.

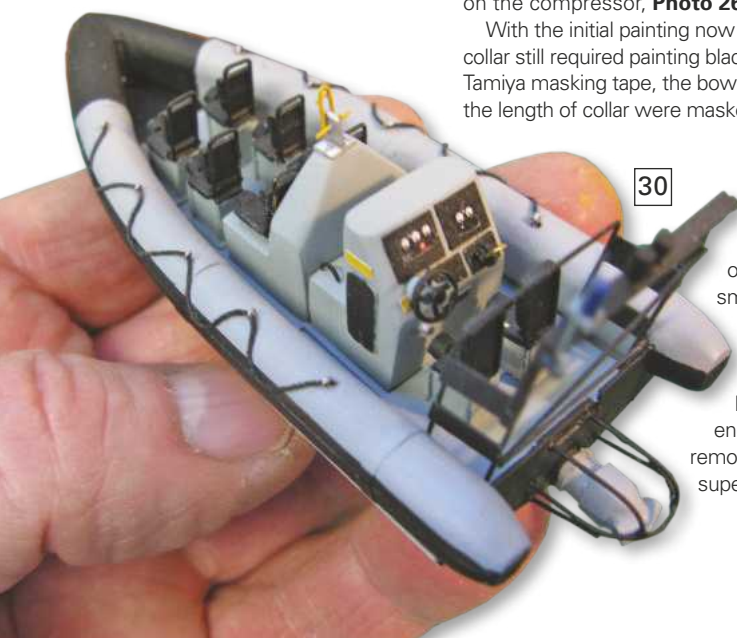
the hull, but the drive unit can remain unfixed for the time being. For fixing the frame, it was bonded into place using cyanoacrylate metal adhesive.

Painting

All of the parts now prepared were temporarily secured for air brushing. Once again I used masking tape, sticky side up, on a small revolving cake stand that is ideal for this sort of job. The paint used was White Ensign Models Modern Navy Grey (as for the rest of the HMS Daring model), all air brushed with a simple suction feed air brush using a 30psi setting on the compressor, **Photo 26**.

With the initial painting now completed, parts of the collar still required painting black, so using low-tack Tamiya masking tape, the bow section and strips along the length of collar were masked off as in **Photo 27**.

their ends. All of the internal fittings had now been prepared and were ready to be fixed into place, **Photo 29**. A few final jobs remained, including fixing the single point lifting harness and the instrument panel decals. The latter were sourced from the wide range of aircraft instrument decals readily available online or from one of the many plastic model kit trade shows around the UK. In **Photo 30** you can see the single lifting point and the control console dials. A self-righting system is mounted on top of the aft framework which automatically inflates should the RIB capsize. Producing the 'bag' is straightforward and involved using masking tape which can be effectively shaped and painted. I used conventional 20mm wide tape folded over three or four times, **Photo 31**, and then cut to size with a 3mm flap to fold around the back bar of the frame.



30

Last tasks

On the top side of the collar are a series of flexible grips. Using small eyelets formed from fine fuse wire, black thread was looped through each,

Photo 28. Any loose ends were carefully removed with a spot of thin superglue then sealing



31

PHOTO 31. Ordinary masking tape was used to form the shape of the self-righting bag.

Two Halmatic Pacific 24's were actually made and here in **Photo 32**, in my hand is one of them completed, hooray! Yes, a challenge, but when broken down into small units, such a project is not that complicated or stressful to produce.

Answer to the September Mystery Picture

The clue was: A Saint by any other name.

As Mystery Pictures go this is a difficult one, but for those familiar with ships of the First World War period and those of the Austro-Hungarian Empire it's easily recognisable. For many with an interest in the naval aspects of WW1, there is a tendency to concentrate on the British and German rivalry in the North Sea, yet there was also a corresponding rivalry in the Adriatic between Italy and the Austro-Hungarian Empire. The latter saw the construction of the Italian dreadnought Dante Alighieri as a potential threat and in response ordered the construction of four dreadnoughts; SMS Tegetthoff, SMS Prinz Eugen, SMS Viribus Unitis and SMS Szent István, this last ship being last month's Mystery Picture. In some respects these four dreadnoughts broke new ground by being the first to have four triple turrets mounting 12 inch 45 calibre guns, but still retained a secondary battery of twelve casemated 5.9 inch guns. The other innovative design feature was their reduction in overall size bearing in mind the number of guns carried, their being 495ft long, 89ft 6ins beam and steam turbine powered. SMS Szent István was built in the Hungarian shipyard of Ganz Danubius of Fiume, being commissioned in December 1915. This was a construction decision that had unfortunate consequences as this shipyard was not noted for its quality of construction and expertise. The external features that marked SMS Szent István from her sister ships was an extended searchlight platform from just aft of the bridge to the aft funnel and a large box like ventilator just forward of the main mast. Internally, she was very different, only having two propshafts instead of the four of her sisters.

As the war was drawing to a close in June 1918, SMS Szent István, together with the other dreadnoughts were sent on one last mission to bombard the Otranto Barrage which was an Allied naval blockade of the Otranto Straits between Brindisi in Italy and Corfu on the Greek side of the Adriatic Sea in the First World War. SMS Szent István was accompanied by SMS Tegetthoff, but due to mechanical difficulties the former could only operate at a reduced speed as she made her way down the

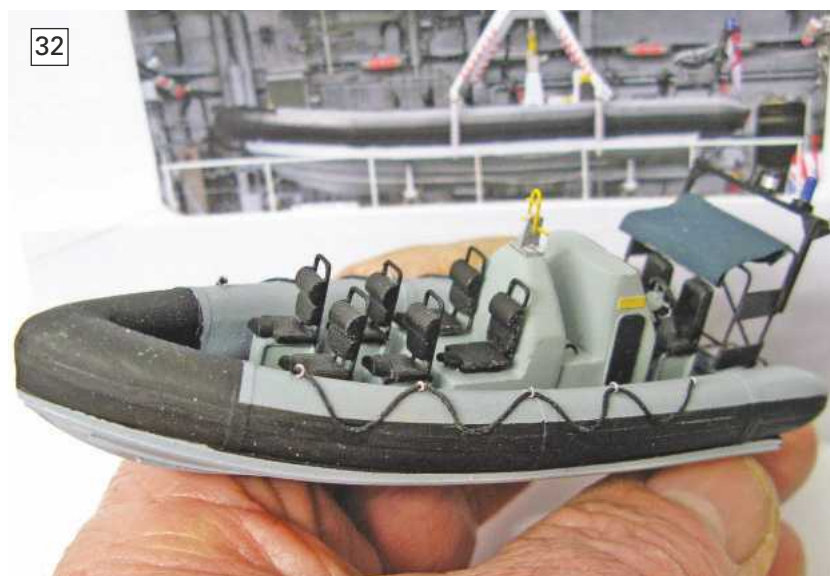


PHOTO 32. A completed Halmatic Pacific 24.

Adriatic. As a result, the dreadnought was an easy target for two Italian MAS boats, one being under the command of a Captain Rizzo, and it was his torpedoes that struck SMS Szent István. In direct consequence of the damage caused, stability was lost due to the poor quality of her construction which also contributed to the premature loss of all power to the pumps and as a result, the dreadnought capsized and sank with a considerable loss of life, and the proposed attack was then immediately cancelled.

This month's Mystery Picture, Photo 33

The clue is: The Battle of Aboukir?

Reference and acknowledgements

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An International Encyclopedia by M J Whitley, pages 96 to 100.

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Austro-Hungarian Battleships

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Jane's Fighting Ships of WW1.

Halmatic Pacific 24 ref:

HMS Daring and HMS Dragon. ●

“...when broken down into small units, such a project is not that complicated or stressful...”



PHOTO 33. The Mystery Picture and the clue is: The Battle of Aboukir?

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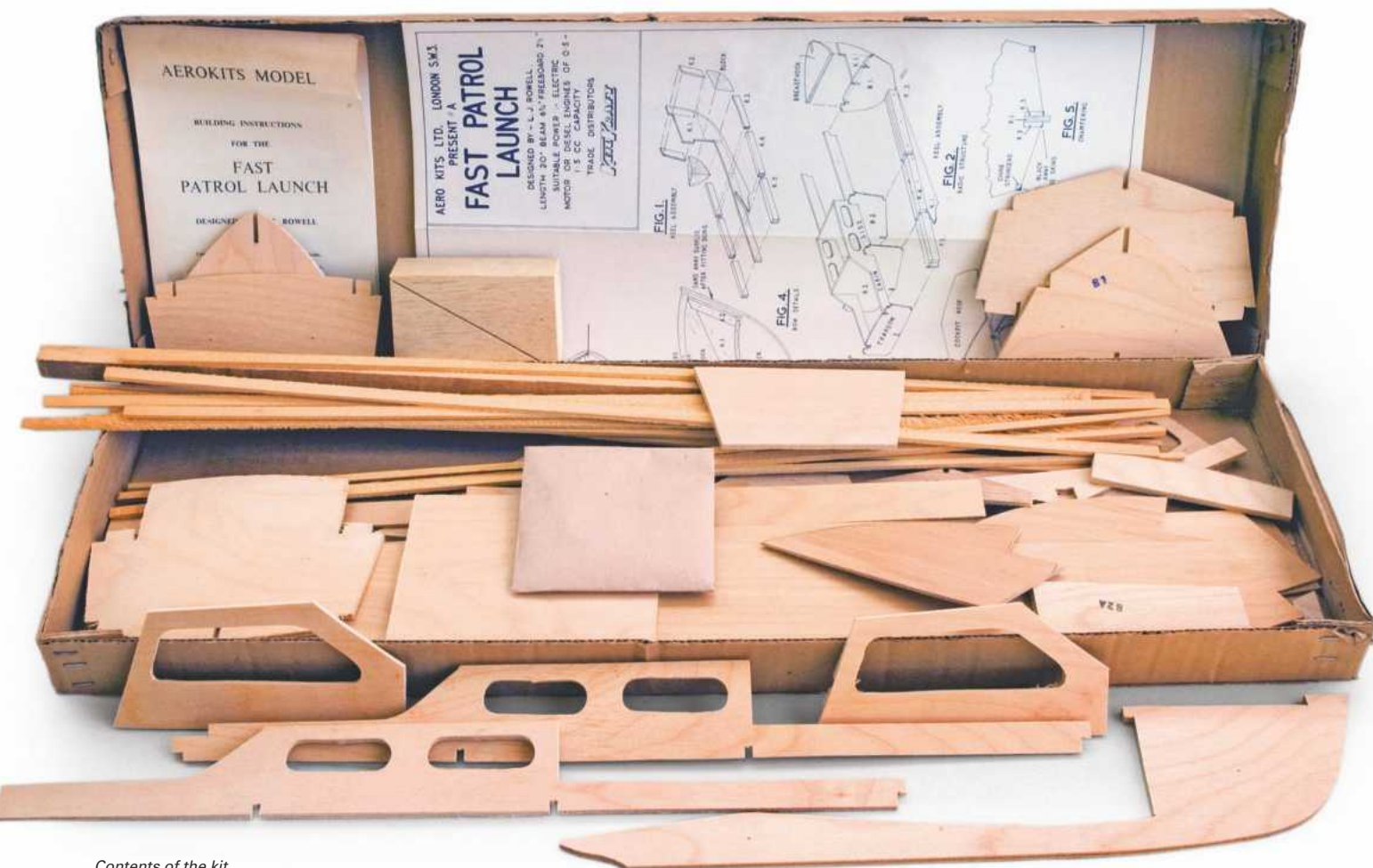
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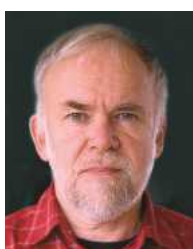
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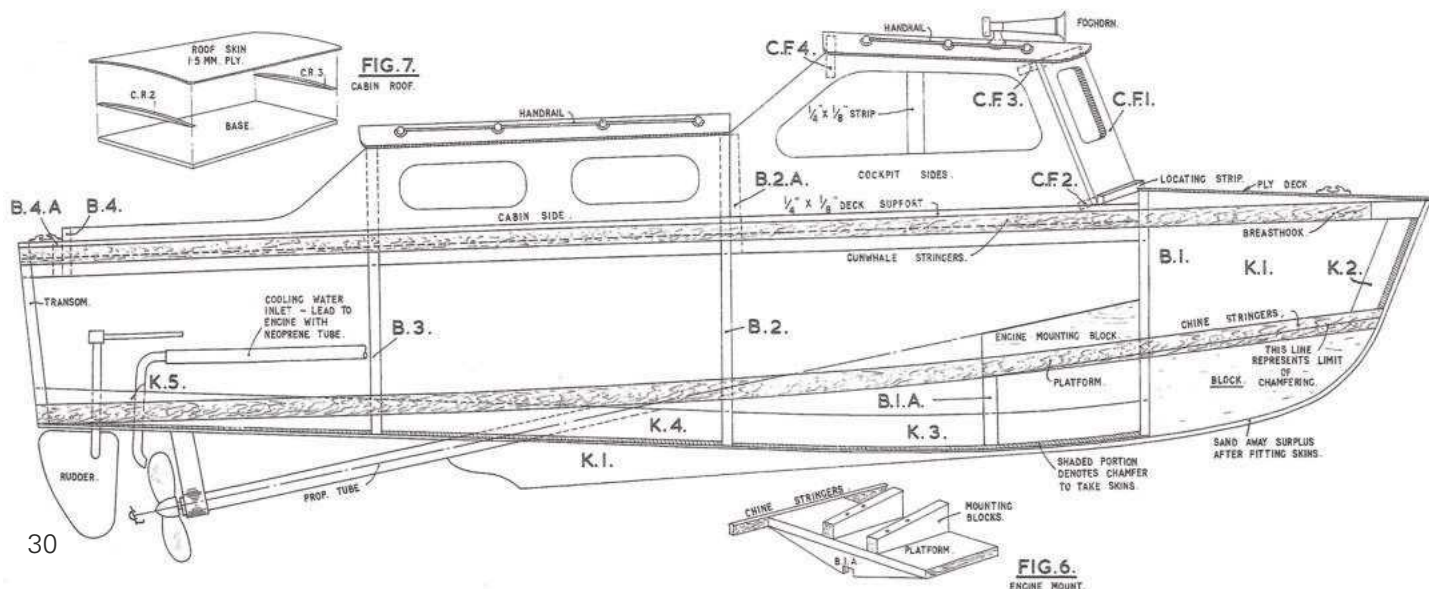
John Parker delves into the archives

19: Aerokits Fast Patrol Launch

There currently seems to be a great deal of nostalgic interest in the wooden model boat kits once made by Aerokits Ltd of Gorleston-On-Sea, Norfolk, and later of Farnham, Suffolk. Distributed by Keil Kraft, they could be seen in just about every model shop throughout the fifties, sixties and into the seventies. Aerokits'

regular advertisement in *Model Maker* showed an expanding range that by the summer of 1956 consisted of the 18 inch (457mm) *Sea Nymph* at 21 shillings and seven pence halfpenny pre-decimal currency (21s/7 1/2d), or some £22.95 today (adjusted for inflation); the 24 inch (610mm) *Sea Scout* at 36s/- (£38.15 today); the 29.5 inch (749mm)

Side profile of the Fast Patrol Launch.



Sea Rover at 54s/- (£57.20 today); the 34 inch (864mm) Sea Commander at 72s/- (£76.25 today) and the 34.5 inch (876mm) RAF Crash Tender, also at 72s/-. The 20 inch (508mm) Fast Patrol Launch joined the family in 1958, priced at 32s/6d (£32.25 today).

Kit design

These kits were generally of cabin cruisers or patrol boats and featured pre-fabricated hardwood construction using slotted ply pieces for the frames and superstructure, hardwood stringers and thin ply sheeting for the single-curvature hull panels. They were of quite heavy and strong construction, primarily intended for diesel power, with the larger models capable of carrying the bulky radio control installations of the time. Electric power was an option if the resulting lower performance could be accepted. How well I remember, as a young lad, staring at these kits propped up on the back wall display shelves of my local hobby shop, wondering how difficult they would be to make and which one I would buy if I had the money (the Sea Commander, please!). But they remained out of reach, both physically and financially, until some decades later when I was able to buy an Aerokits Fast Patrol Launch from an Internet auction site. By this time the kits had long disappeared from the shelves of the hobby shop, along with the hobby shop itself, come to think of it. Being re-united with an object of desire from your youth can be a recipe for disillusionment, and I have to say here a plot spoiler warning, as this was the case with my Fast Patrol Launch.

Quality?

The first thing that struck me when I opened the box and began to examine the contents was the absolutely appalling quality of the stripwood. Many of the pieces looked as if they had been allowed to whip as they were run past the teeth of a circular saw, leaving torn tendrils of wood and a very rough surface. Yes, they could be cleaned up, but that would leave them seriously undersized. The stock used for cutting one of the larger pieces had never been large enough in the first place, leaving a dark inner bark layer on the undersized side! I don't know how a beginner could be expected to cope with this. The plywood looked to be of good quality, but further problems arose when I attempted to slot some of the interlocking framework pieces together. Now, wouldn't you think that if one piece is intended to slot into another, the slot width would suit the thickness of the piece to be slotted into it? This is not the case here, as I have tried to show in one of the photos. Most slots are only about two thirds of the required width and the parts won't fit together at all. The constructor needs to widen all these slots, bringing the likelihood of them moving off-centre. It would be easier to cut the slots from scratch. The slots have the appearance of having been cut with a saw, rather than die-cut, with overruns to the cuts and saw marks on the edges. Saw-cutting parts on a bandsaw using a template as a guide would bring considerable scope for inaccuracy.



Confidence in a good result is further undermined by the contents listing, a printed slip which has corrections made to it by hand, including the addition of the cockpit sides and roof, apparently overlooked when the list was first drawn up! The assembly diagrams also show signs of poor checking. Figure 2 for example showing the keel assembly being fitted to the starboard chine notches of the frames instead of at the centreline. The construction is very much of a traditional hammer and chisel carpentry style, rather than the lightweight glued construction we would now take for granted. The hull skins must be attached to

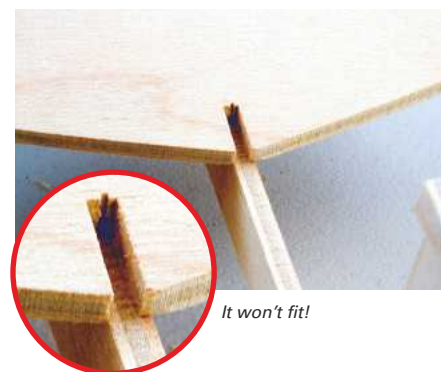
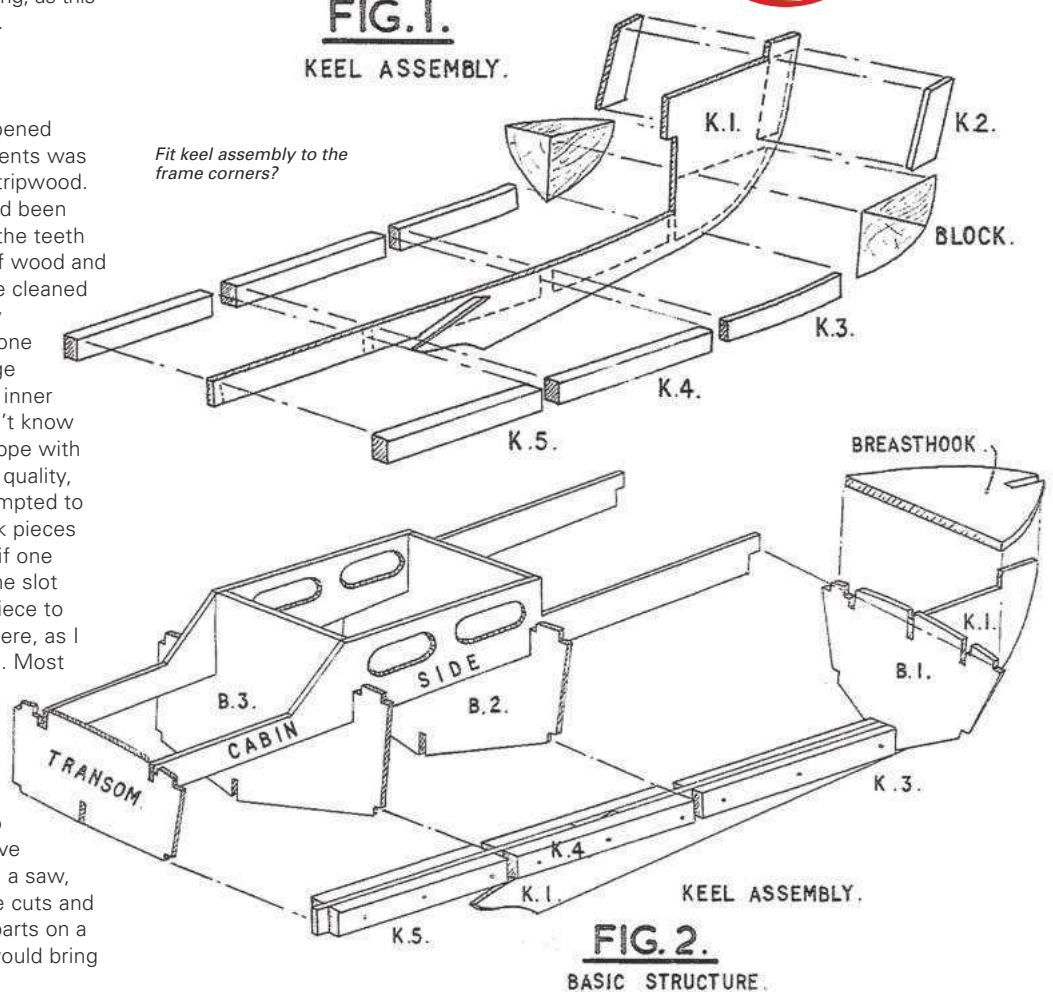


FIG. 1.
KEEL ASSEMBLY.

Fit keel assembly to the frame corners?



...these classic designs are available once again from manufacturers offering replica kits made using modern production techniques...

1 Foredeck support	4 mm. plywood
1 Deck (7 pieces)	1.5 mm.
2 Hull side skins	1.5 mm.
2 Bottom skins	1.5 mm.
10 Pieces stripwood for stringers and deck supports	1/4 x 1/2 strip
3 Pieces stripwood, rubbing strakes, etc.	1/4 x 1/2 strip
1 Propeller shaft skeg	Brass
1 Packet brass nails	
1 Plan	
1 Instruction leaflet	
1 MAIN CABIN ROOF SKIN	1.5 mm
2 COCKPIT SIDES	3 mm

In the event of any part of this kit being damaged or missing please apply to AEROKITS LTD FARNHAM SAXMUNDHAM SUFFOLK

ABOVE: The corrected Parts Listing.
BELOW: The Aerokits range in December 1959.

the framework using small nails hammered into the edges. These nails are listed as 'brass nails' on the contents list, but although my kit box shows no signs of water damage, the nails have thoroughly rusted in their sealed envelope, which puffed out dark brown clouds when prodded. Would you want them below the waterline, even if well painted over?

Conclusion

Having said all that, I think the design by Les Rowell, is a corker. Given just 20 inches (508mm) of length to exercise your imagination, as well as price and production constraints, there's not a lot you can do, yet the Fast Patrol Launch manages to capture the character of a small patrol launch to good effect. There's just enough detail and interest in the cabin design to carry it off, and none of the clunky ugliness of many other simple kits. A good sense of proportion is evident in all the Les Rowell Aerokits designs.

Aerokits rode a rising wave of popularity as Britain emerged from the post-war era, their sales apparently unaffected by the quality control problems that I found with my own Fast Patrol Launch (and a few other Aerokits I have inspected). To some extent it was a case of limited choice, lower expectations by buyers and the Aerokits models looking better than most of the opposition. The range expanded to include the Sea Hornet, a 25 inch (635mm) open speedboat, the tiny 16 inch (406mm) Sea Urchin, a larger 46 inch (1168mm) version of the Sea Commander, the Sea Queen, a larger 46 inch (1168mm) version of the RAF Crash Tender and a 40 inch (1016 mm) Patrol Torpedo Boat.

And now?

Several of these classic designs are available once again from manufacturers offering replica kits made using modern production techniques such as laser cutting for the plywood parts. They perform well with modern running gear and, I presume, don't suffer the same quality control issues of the originals, or introduce new ones! They may well be the way to go if you want to re-live your youth, but just beware that as someone once said, nostalgia ain't what it used to be!



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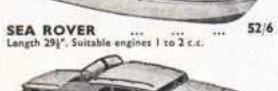
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SEA ROVER
Length 29", Suitable engines 1 to 2 c.c.
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SEA COMMANDER
Length 34", Beam 11", Engines up to 3 1/2 c.c.
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FAST PATROL LAUNCH
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1:35 HMS Renown (BB604)

This ship is a 50-foot steam pinnacle from around the middle of the 19th Century. These boats had a small forecabin, a room for the crew, a boiler room and a cabin. 14cm (H) x 45cm (L) x 9.5cm (W)

Build Complexity Beginner

£74.99



1:30 Norden Fishing Boat (BB603)

This type of boat was originally designed by local boat builders along the Western coast of Denmark around 1930. It represented an improvement of the existing boats and has remained relatively unchanged. 28cm (H) x 34.5cm (L) x 11.5cm (W)

Build Complexity Beginner

£36.00



1:10 RNLI Waveny Class Lifeboat (BB101)

This former 44-foot Coast Guard is a very seaworthy lifeboat, designed to carry out search and rescue assignments in poor weather and water conditions. With a skilled and experienced crew, this vessel can carry out the most demanding of rescue operations. 23.6cm (H) x 36.3cm (L) x 10.7cm (W)

Build Complexity Beginner

£289.99



1:75 Cutty Sark (B564C)

The most famous of all tea clippers, the Cutty Sark was built to transport tea from China. She was designed by Hercules Linton, whose ambition it was to outstrip the Temppylae, the fastest ship of the times. 67cm (H) x 110cm (L) x 15cm (W)

Build Complexity Experienced

£94.99



1:75 Colin Archer - (BB606)

Built in 1893 and originally named the RS 1 the Colin Archer was used by the Norwegian Society for Shipwreck Salvage and later named after its designer and builder. 50cm (H) x 47.5cm (L) x 12.5cm (W)

Build Complexity Beginner

£379.99

SUITABLE FOR R/C



1:45 Calypso (B560)

The Calypso was built in the USA in 1942 as a minesweeper. She was bought in 1950 by Jacques-Yves Cousteau, and after extensive changes and modifications has become a fully equipped ocean research vessel. research vessel. 33cm (H) x 94 cm(L) x 17cm (W)

Build Complexity Expert

£84.99



1:67 Will Everard (B601)

A 280-ton bark built for F.T. Everard & Sons in Great Yarmouth in 1925 to 1926. The ship is owned today by P & O Containers Ltd. 49cm (H) x 58cm (L) x 12cm (W)

Build Complexity Beginner

£99.99*



1:50 Marie Jeanne (BB580)

Built as the 19th Century was drawing close. This is a "dundee" of 50-60 tons and equipped with many sails, making necessary a ballast of 20-25 tons and a 12-man crew. 50cm (H) x 57cm (L) x 13cm (W)

Build Complexity Advanced Beginner

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Boiler Room

Part Forty Six: Workshop Practice - Filing

PHOTO 1. An example of just what can be achieved with filing skills. This stainless steel bottle opener started out life as a valve spindle. It was first turned down in the lathe to provide the handle then the hand was carved out using nothing more than files and abrasives.

PHOTO 2. You can quite clearly see the grooves cut across the file face in this picture that create the cutting teeth. The shallow angle of the cuts also makes it clear that the teeth density is far greater across the file than along it.

Richard Simpson's
series on model
steam plants



I think it is because a file is such an innocuous looking tool we take it for granted that we do not need to consider any safety aspects...

Following on from last month's look at drilling, I thought we would move on to probably one of the most underestimated of workshop practices and that is filing. In this day and age of readily available machine tools we tend to look for the easy way of doing everything and often forget what we had to do before modern CNC milling machines and lathes came along and did much of it for us. Filing is sadly becoming a lost art, but it is an incredibly versatile means of removing metal and a knowledge of the basics can help you to get a bit more from the process as this bottle opener demonstrates, **Photo 1**.

How it works

A file of any size, shape and type consists of a multitude of cutting points. These could be created by tiny pieces of carborundum or diamond embedded in a resin or actually cut into the face of a hardened steel bar. The density and size of these cutting faces determines the rate at which the file will remove metal and the quality of the surface that is cut. Taking an average standard file, if we look at the surface very closely we can see that the cutting points are generated by grooves cut across the face of the file in a criss-cross pattern that generate a cutting point where they cross, **Photo 2**. The finer this pattern, the more dense the cutting points and the smoother the surface will be. At one end of the scale we have large 'rough cut' files capable of removing big amounts of metal with each cut and at the other extreme we have small fine needle files that remove very little metal, but which can also generate very smooth surfaces.

One point of interest is that the grooves cut across a file's face are not at right angles and they are at a much shallower angle to one another. This has the effect of generating a rhombus shape between the cutting points as opposed to a square. This means that when you cut with a file in the normal forward direction the cutting teeth are actually spaced further apart. When we turn the file through ninety degrees and file sideways, known as 'Draw-Filing', the teeth are actually closer together, so the generated face is much smoother. This is precisely why you remove the bulk of the metal with cross-filing strokes, then finish off by draw-filing to obtain a smoother finish.

Safety

I think it is because a file is such an innocuous looking tool we take it for granted that we do not need to consider any safety aspects, but as usual this is a false sense of security! A couple of points worth mentioning before we go any further relate to safety and are as follows. First, filing produces 'filings', which are the tiny shards of metal removed by the teeth. This is often in the form of a dust, which can be airborne, particularly if you are in an area ventilated by fans, so consequently a pair of goggles is not a bad idea when filing. It may seem over the top, but a couple of tiny filings in your eye will soon change your mind about this!

Next, just as with drilling, the job has to be secure in a vice. It is always tempting to hold a job in your hand or on a worktop, but the chances of slipping and cutting yourself or losing your footing and becoming unstable are far higher. Put the job in a secured vice and leave your two hands available to hold the file as this is not only safer, but significantly easier as well.

Finally, most hardened steel files consist of a metal blade with a pointed tang on the end, which is to enable it to be held in a handle. Some, such as wooden ones, are tapped in and some, usually plastic ones, are actually threaded, but this means that you don't have to throw the handle away when the file is worn out. Frequently people use a file without a handle because they can't be bothered to fit one, or because they think they don't need it. For a start you are holding a sharp tang which is uncomfortable, but more significantly, if the file sticks and your hand slips, you push your hand forward such that the point of the tang is against



3

the underside of your wrist. Wrapping a rag, glove, length of insulation tape, hose pipe or piece of wood and a jubilee clip are all no substitute for fitting a proper handle. Don't be tempted to use one without, as a hole in your wrist will generally make quite a mess on the workshop floor!

Types of file

There are many types of abrasive mediums attached to a flat backing that could loosely be described as a file, but these all have the disadvantage of the density of the 'teeth' being the same in all directions, so one of the big advantages of a proper file is therefore lost. For this very brief look at files, we will only consider a standard hardened steel file with the teeth cut into the surface of the file. These files typically start at the smallest end as 'Needle Files', **Photo 3**, and are usually obtained in a set generally comprising the common types that cover the majority of shaping requirements, namely a round rat-tail file, flat, tapered, triangular, half-round etc. These files do have properly cut teeth in them and should not be confused with similar sized and shaped items with diamond or carborundum embedded in the face. From the needle file sets upwards, there is a file of every imaginable size and shape to suit just about every imaginable purpose with the size of the teeth and the density of the teeth determining the amount of metal removed and the smoothness of the finish. There are also many shapes of files, although again the same basic shapes as are found in the needle file set, **Photo 4**.

Process

Having had a brief look at the files themselves, let's move on to having a look at how we use them. Again taking the standard hardened steel file as



4

PHOTO 3. A typical needle file set for very fine intricate filing.

PHOTO 4. A range of typical file types and sizes. These files are fitted with wooden handles, however the round file at the bottom has had the handle removed to expose the tang. Don't be tempted to use a file like this, no matter how quick the job is, as it only needs one slip to have that tang stuck in your wrist, and it will hurt!

our 'base' tool, first of all we get the job ready. As already mentioned it should be secured in a vice and preferably at around your elbow height, with the surface to be filed best secured horizontally. The file should be rubbed with either chalk or grease to help prevent the filings from collecting in the teeth, which prolongs the time required to clean the file. Some engineers advocate oil, however there is always the chance of getting oil on the floor, which will lead to your slipping. Grease also keeps the dust down, but personally I always rub the file with chalk. Stand facing the vice with your feet apart for stability and then consider the different filing actions available to you.



PHOTO 5. Heavy cross-filing with good pressure provided by the heel of the hand on the forward strokes.



PHOTO 6. Lighter cross-filing should be done with a couple of fingers to reduce the pressure while maintaining good control and releasing the pressure on the back stroke.



PHOTO 7. Draw-filing is tricky as there is very little length of file to control, but it should be only for finishing cuts anyway and not to remove large amounts of metal.

PHOTO 8. Most flat files will have a smooth edge and a cutting edge. Take care that you don't hold the file the wrong way around and damage a previously finished surface.



Heavy cross-filing

This process, **Photo 5**, requires your leading hand to hold the handle firmly and provide the forward motion while the heel of your other hand should provide the downwards pressure and the control of the angle. Use long smooth strokes keeping the file flat and releasing the pressure on the back stroke to prevent blunting the teeth. The file only cuts on the forward stroke.

Light cross-filing

This method, **Photo 6**, should be done with just two fingers on the leading edge of the file to provide the downwards pressure and the control

of the file. Again long even strokes using as much of the length of the file as possible and release the pressure on the back stroke.

Draw-filing

This procedure, **Photo 7**, is across the file with the direction of the cut again away from you. Stability is a challenge with only the width of the file to guide, so cross filing is only a finishing cut after the surface has been made flat by cross filing. Usually draw filing will be done at ninety degrees to cross filing to remove any deeper grooves in the surface.

Edge-filing

Finally there is this to consider. Most flat files will have one edge cut for filing and the other edge is smooth, **Photo 8**. If you need to clean out a corner you can use both cutting faces simultaneously, but take care as the edge cut will quickly undercut the face and therefore require dressing-up again with a cross file action. Usually it is safer and better to use the smooth edge against the work, **Photo 9**.

With all filing, clean the file regularly by wiping it with something like a wire brush. I have seen steel wire brushes used, but these can actually dull the teeth fairly quickly, so a brass wire brush is probably better. Run the brush along the same angle as the cuts in the face to remove the debris and then rub some more chalk into the face. Year's ago there used to be a special tool for cleaning files called a file card. This was basically a wide flat wire brush that you could put into another vice, brush side up, and run the file over it a couple of times to clean it, before going straight back to the job, but I haven't seen one for a few years now.

Conclusion

So there we have filing in a nutshell! I hope it has tempted one or two of you to have a go and see just how effective and useful a tool a file is, and what we can achieve with it. On a final note I would always advocate, without exception, looking after all your tools and files. I think most of us have at some point or another come across a drawer full of files, all thrown in on top of each other. The cutting faces of a file are quite delicate and they should always be stored in either a rack or held up by their handles. Knocking them around in a drawer will lead to their teeth becoming damaged, which could well eventually translate to a deep scratch across your nice smooth freshly filed metal surface.



PHOTO 9. Delicate filing is always best done with fingers rather than the heel of the hand, particularly when finishing off a corner.



National Model Engineering and Modelling Exhibition - 2014

Dave Woolley reports



TOP: The superb 1:144 scale model of the aircraft carrier Admiral Kuznetsov built by Paul Bannon.

LEFT: Arthur Barlow (centre) confirming he is in good health!

BELOW: The steering wheel on Arun 52-01 is very different from that on the later Arun class lifeboats. This model is becoming a work of art by Arthur Barlow.



ABOVE: Part of the riveted tail surface for the large scale BH 7 hovercraft model, still under construction.

BELOW: Phil' Scales is best known for his master touch when it comes to weathering and creating authentic surfaces. It's hard to believe when looking at these anchors that they are made from styrene.



This event is now in its 21st year, and was held between 9th and 11th May as usual at the North Yorkshire Show Ground in Harrogate, with the exhibition housed in three large halls. Essentially it focuses on model engineering in all its forms with a substantial model boating input. Competition plays a significant part in the event with sections encompassing the whole spectrum of model making. There is a significant model ship and boat presence on many of the engineering stands, apart from the traditional model boat club and association displays. Trade support is slanted towards model engineering, but again there is some marine support, so overall a good show to visit. The event title is a good description of what you will find at Harrogate!

Models

I had the time to take a close look at the models on display and it is here that I never fail to be impressed by the variety and quality of them, not just in the competition sections, but also on the club stands. I was really impressed with the superb model of the MV Australia Star, built by Bill Carpenter of the Tynemouth MBC. This model included a highly detailed model of its 300 ton Stülken jumbo derrick, no easy task given the number of blocks, their types and cables.

At the other end of the spectrum was an interesting and unusual model of a beached Arab dhow on the Stewart Park MBC stand, a club which seems to specialise in models built from wood.



ABOVE: A fine model, built by Bill Carpenter of the Tynemouth MBC, of the Blue Star refrigerated cargo liner Australia Star.

RIGHT: This light cruiser SMS Emden is based on a Deans Marine hull, but was entered into the competition as semi-scratch by Ian Stewart.

BELOW: Entered in the competition was this RN 45ft Admirals Barge c1919, built by Brian Young.



Not all models are stand-alone exhibits, as there was a real snapshot in time diorama of a quayside scene c1950's complete with a Clyde puffer and trawler all to 1:24 scale, built by R. McMahan. The entire diorama can be illuminated, including the street lighting, shops, the puffer and trawler.

Paul Bannon (remember his HMS Hermes from the 2013 event), displayed a truly magnificent



ABOVE: Miss E. Dyson's Titanic received the Junior award.

RIGHT: The cable layer Norseman was entered into the competition by Brian Young.





The Shi Au dhow is seen here beached for repairs in a mini-diorama.

model of the Russian aircraft carrier Admiral Kuznetsov. Paul likes to work on a number of projects at the same time and this model has actually been under construction for more than five years. The volume of research performed is a real credit to Paul considering the limited availability of onboard pictures. Although to a scale of 1:144, Admiral Kuznetsov is still a large model and like Paul's previous aircraft carrier projects, the hull can be split in two for ease of transport.

Competition

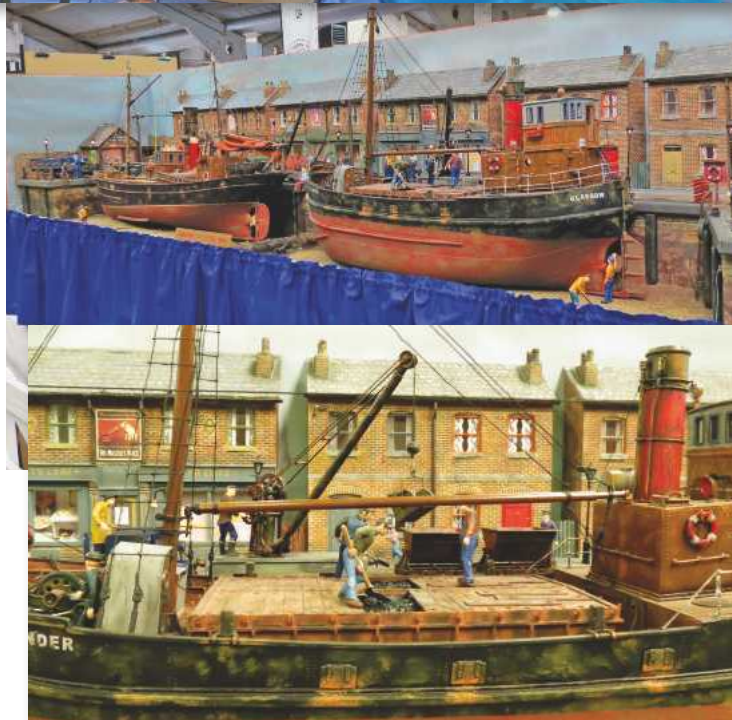
There was a disappointing entry of model ships into the competition classes. The standard was still high, but the numbers lower than desirable. Judging is to a standard, so no one is disadvantaged and I hope more model boating enthusiasts will take part, as achieving an award can be personally very satisfying and recognition of the skill and effort involved.

A 1:50 scale Soviet Zubr attack hovercraft entered was a particularly well-built model and was accompanied by a lavishly illustrated building log showing pictures of both the original and the model during each stage of its construction and all this was suitably rewarded. Also gaining a top award was a highly detailed model of the cable ship Norseman, built by Brian Young who also entered a c1919 admiral's barge, achieving a Commended Award for this very nice piece of craftsmanship. This year's best Junior entry in the model boat section was a small scale SS Titanic approaching the iceberg, all constructed by Miss E. Dyson, a talented young model maker in the Kirklees MBC.

Clubs

There was so much to see on the club stands of all types, so the time I had was not really enough, but here goes with what caught my eye. On the Kirklees MBC stand there was a large scale model of a BH7 hovercraft under construction with a huge number of rivets needing to be fitted, how's that for dedication!

On the Ship Modelling Society stand was a model all in brass of an army general purpose workboat, built by Harry Barrow. This model has been featured before in these pages, but is well worth mentioning again, because of the skill and dedication that has gone into it. Harry had actually recently painted it, but then decided he preferred it in pure brass again, so has recently stripped and cleaned it all, which is no mean feat.



Conclusion

This Harrogate event is one of the largest model engineering shows in the UK and is very well organised. Like all model shows there would appear to be a slight decline in trade support, but nothing of consequence. The model boating club support is significant and SHG Models and Component Shop are regular trade supporters that we know well. Stuart Models still manufacture steam engines and boilers suitable for model boats and had a well filled stand and of course there are all the model engineering traders, with much of value to us.

Parking arrangements are excellent and many clubs organise coach trips for their members. The lighting is generally good with plenty of space in the aisles, but both Friday and Saturday can be very busy, in particular when it comes to perusing the trade stands. A good show and well worth a visit, or perhaps combining it with a stay in the spa town of Harrogate? ●

ABOVE & INSET: A large harbour diorama by Richard McMahon. The vessels are from Mountfleet kits. Richard's harbour diorama includes much intricate detail and weathering.

BELOW: This Zubr hovercraft was awarded the Eventex Shield for Best Model Ship.



Botnia Marin Targa 37

Part Two

Ron Rees
builds a
FAB-U-LOUS
model of this
boat as used by
the Metropolitan
Police on the
River Thames

Ron Rees aboard Patrick Colquhoun II
during the summer of 2013.



At the end of Part One in the September 2014 issue of Model Boats, we had the basic hull completed, so we are now continuing with the superstructure.

The cabin body

I considered making the cabin from balsa wood and thin plywood which would do very well and be quite light, but I had stocked up on styrene sheets of various thicknesses for my first major foray into the use of this material. Regular readers will remember that I had planned to build the Fairey Huntsman from Richard Webb's plan (free with Model Boats, August 2007) using styrene as specified, but had

trouble getting to grips with it, so gave up and built that boat's superstructure in plywood (See 'Away with the Faireys' in MB, July 2013).

Looking at the nice flat lines of the Police Targa 37 I thought I would give it another go. So apart from some real teak panelling, the whole cabin assembly is in styrene. Basically it is a very pretty box and I felt sure I could manage that. In the end the styrene proved to be the best choice and as I grew more familiar with its properties I grew to quite like it, as there was hardly any sanding, so no dust. Scoring and snapping the thick pieces was easy and the material is quick to glue. Compared to a sheet of plywood of the same size, overall it was also cheaper as well.

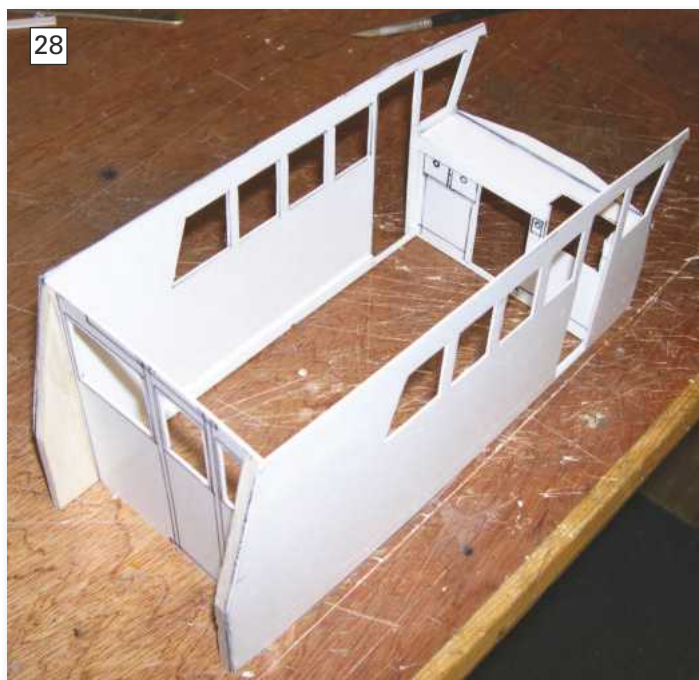


PHOTO 28. Make a start on the cabin by cutting out the sides and window frames from 1mm styrene and adjust the width of front and back pieces over the actual hole in the deck. The cabin should fit flush to the top of the deck. The cabin door to the front lower cabin was left open for airflow to the motor, which is directly under it.

It really came into its own when it came to painting, as no sealing was required. As the cabin was all painted white except for a blue strip and the styrene was white already and very smooth, a light primer coat to add 'grip' and then a top coat and it was all done.

The cabin started with the two identical sides, cutting out the window and door apertures, then adding the back bulkhead and the cockpit console and dashboard. Once held straight and square, the corners were glued and a bit of 2.5mm strip added within each corner joint and all left it to dry, **Photo 28** and **Photo 29** is of it placed over the hull interior opening. Now you can see how it is all going together!

There are then overlays fixed over the cabin sides and **Photo 30** is of the port side piece and **Photo 31** is of the starboard one in place. These two pieces are mirror images of one another.

At that time, I had not realised how difficult it would be to cut and later fit the clear glazing inside the individually cut outer, but very narrow edged, frames. It could all have been approached in a different way, by either making the entire window section in clear styrene and adding the window frames in strip styrene, or even masking-off the relevant areas and painting-on the window frames. Hindsight is a wonderful thing! Anyway, I ploughed on in the conventional way by making individual outer frames that created a small ledge in the main cabin side for the individual window glazing to sit within - all very fiddly!

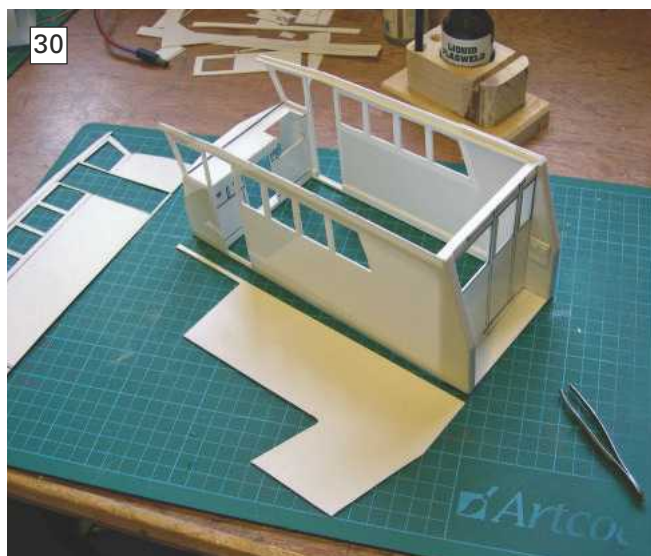


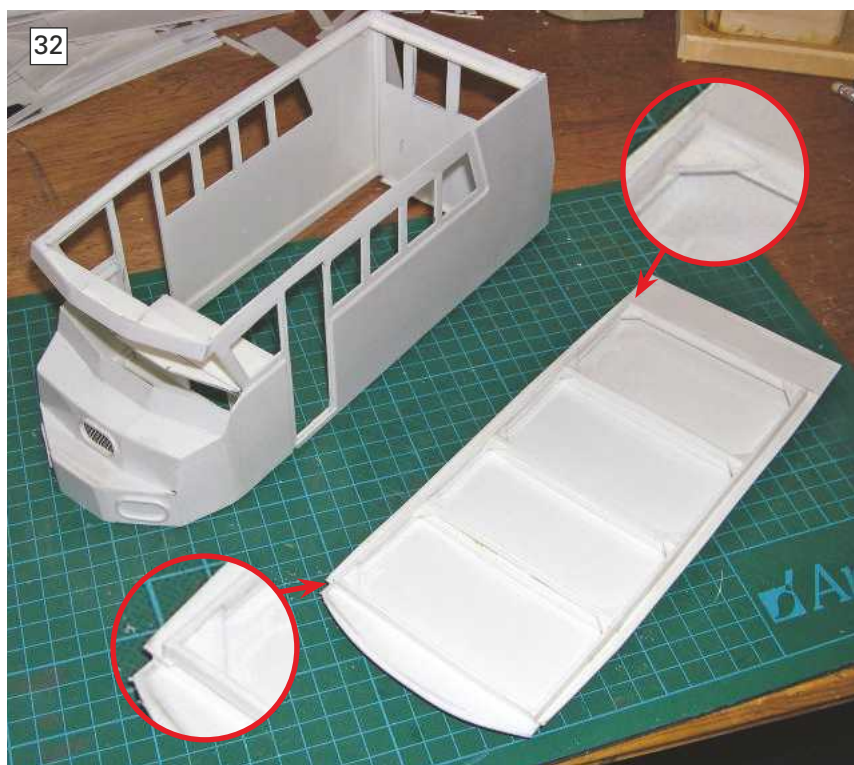
The sharp-eyed amongst you will have now noticed that the cabin front, with its odd shape was a bit of a challenge and left until after the basic roof was made. A bit of a cop-out, but sometimes if something looks to be too taxing, it is best to do something else. In any case, the shape of the front of the roof helps determine the angles of the cabin front window frame pieces, so it probably made life easier in the long run.

PHOTO 29. The cabin must be a decent 'tightish' fit over the coaming.

PHOTO 30. 1.5mm thick outer cabin side skins are added after cutting to size and chamfering the top at 45 degrees.

PHOTO 31. This is the starboard side cabin outer skin in place. You can also see the strip inside the cabin sides' top edges to support the roof.





The cabin roof

The roof has a very slight curve to it from one side to the other up to a line above the doors and from there it slopes and is flat to its front edges. This roof was made from 0.75mm styrene with a 1mm thick supporting framework, **Photo 32**. Once the pieces are cut to size, the first job was to attach the curved formers to the underside of the roof panel with liquid polystyrene adhesive. These supports are extended a little and angled at the ends to support the blue edge that will overhang around the sides and front of the cabin. These were all glued-on after a chamfer was cut at each corner and the whole thing fitted, tested and re-fitted to the cabin body until the shape was right. This is a removable cabin roof, so small 1mm triangles were added to the rear corners, plus a small block at the front of the cabin body so that three servo mounting screws can hold it all together. **Photo 33** is of the roof, well on its way to completion, but no cabin front as of yet!

Cabin front

It is handy here to refer to a picture of the full-size version, **Photo 34**, because this is what we want to end up with. On the prototype model, the lower front panel parts (and window frames) were each cut from styrene sheet and the whole thing was created using really fiddly individual little panels. As you will have already noticed, the lower panels were relatively easy, but I delayed making the window frame surrounds until after the roof was made and fitted, since their final shape depended on their matching the angles of the roof's front section. Even though I cut the individual parts to fit and made identical pairs where able, initially it all looked a bit 'wonky' and the window frame main panels (the last to be made) had to be remade several times before it all looked okay.

In hindsight (once again!), I would have carved the whole front lower section out of foam or balsa wood and skinned it with 0.5mm styrene, and this idea is shown on the plans. Since this is part of the cabin that is panelled within, no one would ever be the wiser.



PHOTO 32. The roof is built on a framework that just fits nicely inside the main cabin body.

PHOTO 33. Here is the roof in place, but not secured and no cabin front windows yet!

PHOTO 34. The front of the full-size Targa cabin. A lot of tricky angles to be resolved when constructing this from styrene pieces.





PHOTO 35. The front of the cabin on the completed model. This area was perhaps one of the most tricky construction jobs to complete to a good standard.

The three front windows on the lower part of the cabin front were made by cutting thin slices from a piece of 15mm (5/8in) oval plastic electrical conduit. The higher centre one is backed by a piece of aluminium mesh to allow some air flow over the motor. There are also two lower windows on the flanks on the bottom of the cabin front that are painted black which is how they appear on the real boat.

Photo 35 is of the completed cabin front, which was to be truthful an absolute pain to get just right.

Interior

I wanted to have working lights on this model and full interior detail. Those of you who aren't bothered with all these fiddly bits could, if desired, not include the cabin windows at all, but simulate them with self-adhesive black film and there would thus be no need for interior detail. So time had to be spent thinking about how it could all be done.

A Eureka moment came when it was realised that the bulk of the interior, as a unit could come out via the completely removable roof void opening. This meant it would be much easier to include all the interior detail and also make it possible to install electrical wiring to power the lighting on both the inside and outside of it all. To this end I installed a small ledge around the inside bottom of the after part of the cabin, hidden by the seating. The floor is in two parts, split at a line across the beam at the cabin's

side door rear edges. Everything in the rear (and forward) parts of the interior, in terms of seating etc., is fixed to the floor pieces, but this does mean the roof has to be 100% removable as well and of course the removable rear section has to go through that hole, even if a bit of 'wiggling' is necessary.

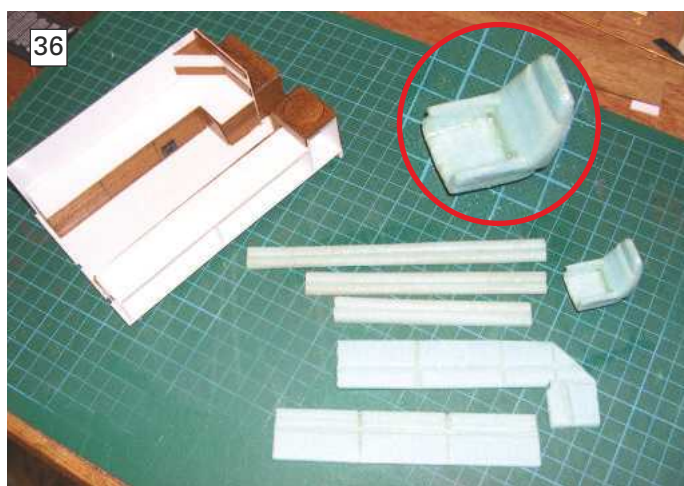
The corners at the bottom of the cabin were reinforced to ensure its sides and ends remained square and work then began. Pictures tell a thousand words, but suffice to say that much of the cabin interior has blue vinyl covered seating, with teak panelling on storage cupboards etc., **Photo 36**. The seats and their backs were made from shaped blue foam offcuts and coated with epoxy resin before a careful final sanding, **Photo 37**, and a coat of paint. The under-seat lockers were made from thin cuts of real teak, details are shown on the plan. The dashboard and control position at the front of the cabin is shown in **Photo 38**. The 'break point' in the floor can just be seen between the forward seats and this front section is permanently fixed within the cabin, but it could be removable if you wish.



PHOTO 36. The rear part of the cabin interior is all built on a removable floor.

PHOTO 37. The seats are from foam, the same as the hull suitably shaped, sealed and painted

PHOTO 38. An overall view of the cabin interior. The front part back to the helmsman's seat is fixed.





40



41

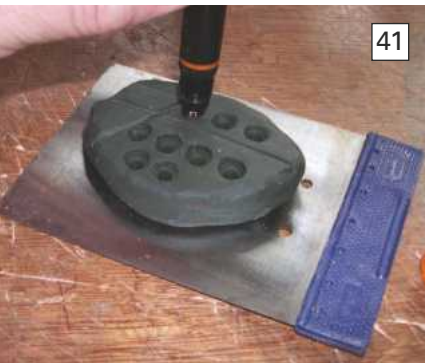


PHOTO 39. The rubber floor is simulated by matt black self-adhesive decal, cut to shape.

PHOTO 40. How do you make an aerial base? The business end of a redundant drawing pen proved to be just the right size.

PHOTO 41. By pushing it into some modelling clay (or Plasticine) a one-off gravity feed mould can be easily made.

PHOTO 42. The aerial bases created from the end of the drawing pen can be seen in the centre of this picture.

The floor on the real Targa has a sort of non-slip rubber or black linoleum with a square raised pattern with circles in it. For this, matt black sheet 'Stick-a-Trim' was used, suitably cut to shape, **Photo 39**.

The earlier 'command vessel', i.e. pre-September 2012, had a tubular metal pole running from the floor to the ceiling and this supported mid-way up its height, a table, with the seating curving through 90 degrees. The ceiling also had drop down flat-screen monitors which I did not notice on my visit to the newer craft so did not fit them on this model.

Roof equipment

The roof is festooned with equipment so these items were gradually made and test-fitted before the roof was painted. In the end, masters were made of most of the fittings on the boat and silicone moulds from them using the Sylmasta Starter pack (as advertised in this magazine), from which the final polyurethane resin castings were moulded. Fittings included on the roof are: Cowl vents; a 360 degree thermal camera; antenna bases; lifebelts; Raymarine radar dome; roof vents and running light units, these last being cast in a clear resin.

An example of what can be achieved with ready to hand bits and pieces are the aerial bases, where the pattern was the nib end of an old Rotring drawing pen, **Photo 40** inserted into moulding clay, **Photo 41**. Once cast, the resulting item was carefully drilled through the centre and a piece of 0.3 or 0.5mm brass wire glued in place with superglue. A small bend was made in the top of all the aerial wires and squashed flat as a form of protection for the human eye! As the Meerkat says: 'Simples'!

The only exceptions were fittings that needed to be cast in white metal, and for those, heat resistant silicone moulds were made from which castings

were taken. Items such as the special cleats and fairleads fall into this last category.

The liferaft canisters were shaped from balsa block, a join line added with styrene strip, then several coats of sealer, primer and gloss white to obtain a smooth finish. Fine thread was added with a painted bead for the pull cord fast release after they were painted and the liferafts sit on a bent metal frame on two teak runners fixed to the roof.

Photo 42 is a general view of the completed roof and its fittings with the Rotring 'pen end' aerial bases mid-way along it.

Lighting

Targa has a huge number of lights, so early on it was decided that on the model, where possible they would work. Due to the small size of some of them, creative thought was needed to come up with a system that would work. There are eight working lights in bulkhead-type fittings around the blue painted side of the roof. To scale they came out at 6mm long by 3mm wide and 3mm deep, and have a metal base unit with a lens on top. I fiddled with these quite a lot and threw away many of the earlier attempts in an effort to make them look right. In the end, each whole unit was cast in clear resin encapsulating a 2mm square bright white LED within, and then the base was painted silver. A small press tool was made from styrene, a bit like the end of a lolly stick with a 0.5mm raised lip around it to create the dummy metal base. This tool was pressed to a depth of 3mm into plasticine (rather like the aerial bases), the hollows coated with Vaseline and then the LED suspended over it with just the chip inside the hollow. Clear casting resin from Hobbycraft was then injected into the mould from a syringe. Because of the number of bare wires involved, the positive legs (the long ones) were painted with red nail varnish up to nearly their ends, so there would be no mistake when it came to connecting them, particularly as the legs needed to be trimmed level as they were fitted. The nail varnish also acted as a sort of insulation. These completed lights can also be seen in the last picture (**Photo 42**), mounted on the blue part of the side of the roof.

Two very large warm white LED's were fitted in the ceiling of the cabin hanging down from inside the roof and they look like the domed fittings on the real boat. More 2mm square bright white LED's were used for the bow and stern roof mounted

42





night working lights. Their shaped cases were made from 0.5mm styrene then painted inside with Humbrol Chrome enamel. I tried lining them with foil, but it shorted out the LED legs, so yes, model making can be a steep learning curve! The LED's were glued in with a cocktail stick drop of epoxy before the whole thing was filled with clear casting resin. A larger domed and more powerful bright white LED was used in the main roof mounted forward facing searchlight with the inside treated in the same way. The blue lights on stalks mounted on the roof are flashing 2mm LED's cast into clear resin to which was added some blue transparent dye (from Hobbies).

Not wanting loads of thin wires all over the place, it was decided to make the lighting circuits from copper sticky backed tape, as used in doll's houses, but its width had to be cut down to 3mm to fit two lengths under the sun visor. More strips were stuck under the roof for the lights running down the centre with a bit of white insulation tape over them where they crossed over each other, **Photo 43**.

All these tape circuits, and there were four in all; port and one front light; starboard and one front visor lights; main and secondary spotlights; flashing blue lights and interior lights, were each individually fitted with a resistor once I had decided from where to power them all. The wiring is further is routed via two more main supply tapes that run down a bulkhead inside the cabin to underneath its floor. They are covered with white tape so can't be seen and a pair of bent contacts make the connection where the roof clips on and off. After testing the whole concept on scrap material, I discovered that you can stick the tape to styrene sheet and solder wires to it and to itself without too much danger of melting the plastic, provided you do it quickly with a hot, but small, soldering iron. At the moment this prototype Targa has been rigged with a simple manual slide switch, but radio controlled on/off operating would no doubt be possible.

And the power supply? The only space left was under the cabin floor, so an old Nokia mobile phone battery was ideal, it being very small and slim and rated at 3.7 volts and 1250mA, **Photo 44**. According to the mathematics of it all, in theory this would run them all for about a day!

In the case of the flashing lights, I'm still playing with these and trying to build a circuit small enough,



to be fitted under the front visor. The full-size Targa also has a strobe effect moving blue light display which scans from one side to the other, but you can't see it until it is on and in the dark, so that hasn't been fitted at the time of writing.

To be continued in November 2014 Model Boats.

Suppliers and useful contacts

Silicone rubber and casting resins:

Sylmasta,
website: www.sylmasta.com,
tel: 01444 831459

Blue Styrofoam board and clear casting resins and dyes:

Technology Supplies, website:
www.technologysupplies.co.uk,
tel: 0845 5670000

Heat proof silicone and white metal:

Hobbies UK,
website: www.hobby.uk.com
tel: 02087 614244

Plasticard sheet, profiles and glue:

SHG Models,
website: www.shgmodels.com,
tel: 01785 840308

LED's, resistors. Batteries:

Component Shop,
website: www.component-shop.co.uk,
tel: 08432 898528

Neoprene fenders, tube, edging:

Seal Plus Direct,
website: www.sealsplusdirect.co.uk,
tel: 0845 226 3345

Boat parts & bespoke printing:

Ian's Boats,
website: iansboats@virginmedia.com,
tel: 02082 526702

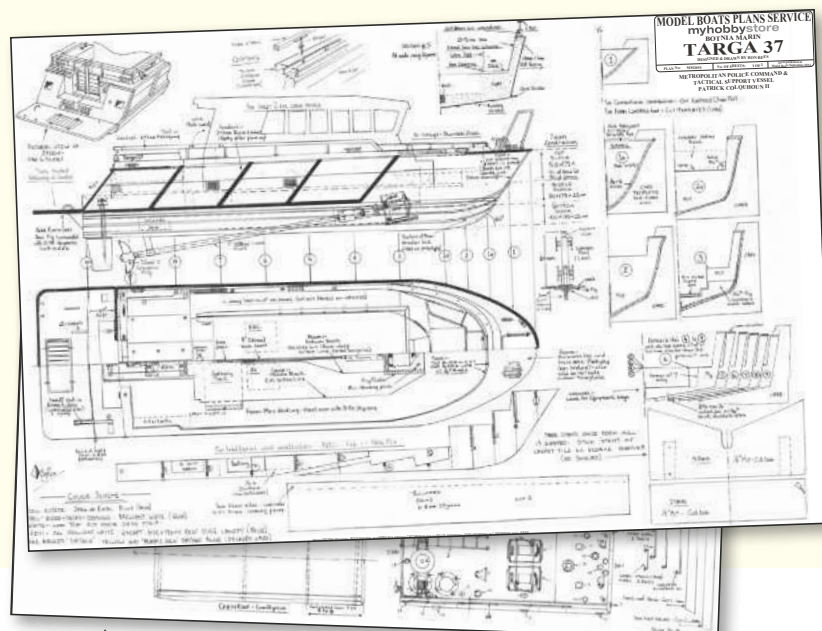
For fittings, stickers, photos of police boat, please contact **Ron Rees**,
email: rontheatricalprops@ntlworld.com.

PHOTO 43. Doll's house copper strip connector, provides the wiring loom for the roof and interior lights.

PHOTO 44. A redundant mobile phone battery provides the power for the lighting circuits.

Plan for Botnia Marine Targa 37

The two sheet full size plan **No. MM 2093** is available from MyHobbyStore Ltd and is priced at £12.50 + p/p as of August 2014. MyHobbyStore plans may be purchased online at www.myhobbystore.co.uk or please call: 0844 848 8822, 1000hrs to 1600hrs, Monday to Friday.





MV Blue Marlin

David Heaps' unique model

ABOVE: The author's completed model show here prior to submerging.

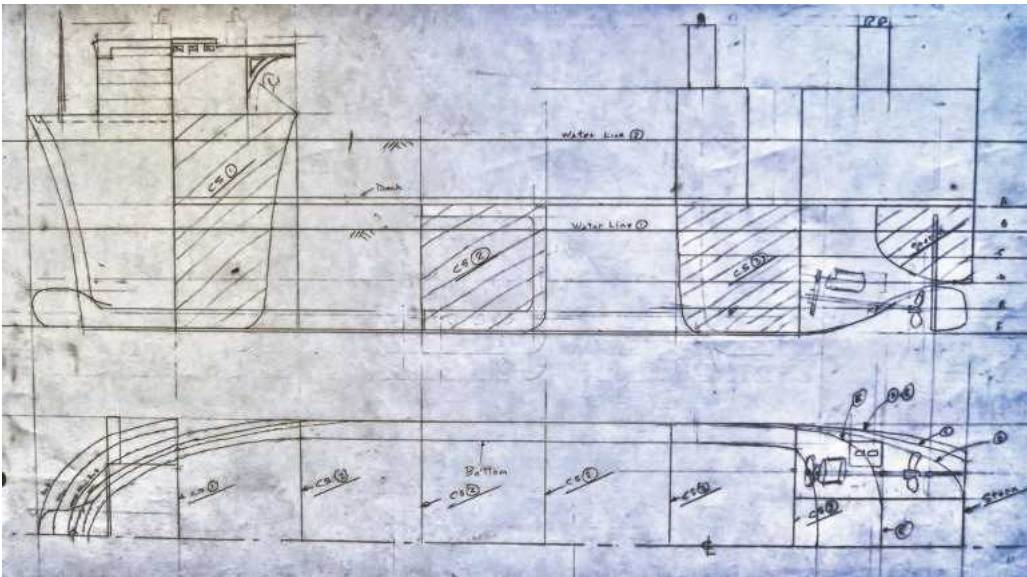
This is a stand-off scale model based on a semi-submersible heavy lift ship working for Dockwise Shipping of the Netherlands. Blue Marlin was built in China at the turn of the century and weighs some 51000 tons GT and can carry 16000 tons. The unusual feature of this type of ship is that they can sink, to allow a load to be floated over the deck, and then be pumped out to raise that load out of the water, **Photo 1**.

My interest in this type of ship was aroused when I read an article about the US Navy bringing home their damaged destroyer, the USS Cole. She had been very badly damaged by a suicide bomber who drove a RIB loaded with explosives into its port side, doing much damage and sadly, killing many sailors, **Photo 2**. There are many examples of this type of ship plying the high seas and the largest can now carry over 100000 tons. My first idea was to make a model big enough to carry a model of the Russian destroyer Sovremenny, however on reflection I realised that my Blue Marlin would then be some 1.5 metres long and weigh far too much for me to handle easily. I then remembered building a model of a Shell Company tanker called Shell Welder and this would be suitable and more to the point, meant that the model could be of a practical size.

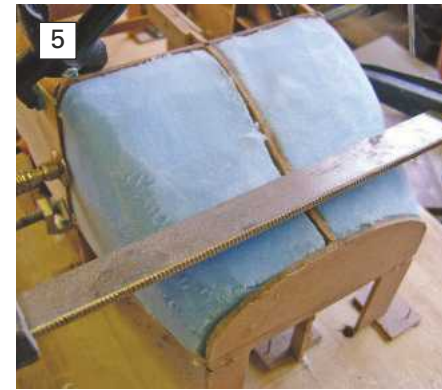
Model design

Having got the scale and the overall size of the new project, one then has to calculate the actual length, width and depth required for it to be a stable and sinkable(!) working model and a basic drawing prepared. For the model to sink and then be pumped out and sail away, there have to be buoyancy tanks in the hull. This is not quite the same as a submarine, which needs total negative buoyancy to operate under water, so the filling and emptying of the tanks does not need to be so precise. Also, when on the surface there is a far greater bulk of the model above water, so the amount of water needing to be taken onboard is far greater than in a submarine of a similar size. To fill and empty the two tanks, my reasoning was that two motor car windscreen washer bottle pumps would do the job. These pumps are normally intended to work on 12 volts, but in practice work perfectly well on 7.2 volts, a standard six cell sub-C NiMH pack being just right. The pumps selected had the advantage of been able to pump in both directions and thus could be used to fill and empty the ballast tanks.





LEFT: The basic concept and measurements drawing for Blue Marlin.



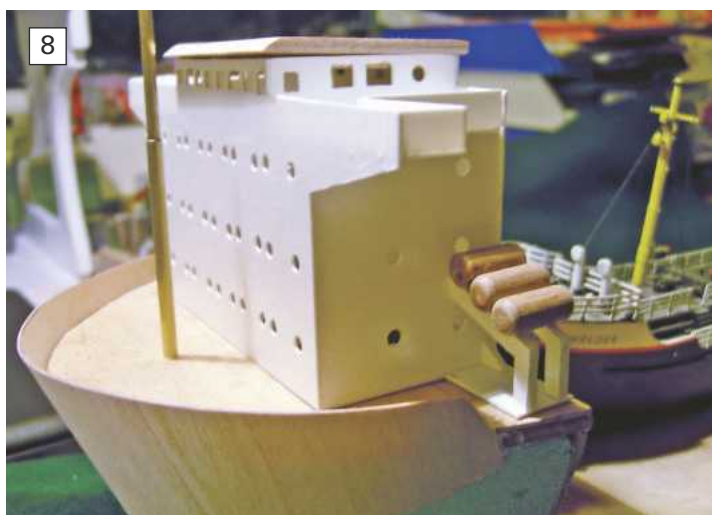
Hull and superstructure

The hull is built from plywood and dense polystyrene foam, then covered with glass reinforced plastic - i.e. fibreglass resin and matting. Because the deck is flat, which is rather handy, it was all built upside down on a baseboard on to which were marked the positions of the bow, stern and frame pieces, **Photo 3**. The amidship frames had to be prepared with extensions above the deck level so that they can be fixed to the board, but these were cut away later once the hull was complete. The building process was simple

in that the spaces between the frames at the bow, **Photo 4**, and stern, **Photo 5**, were filled with blocks of dense polystyrene foam, which is easily shaped to give the curved hull form in those areas. The amidships areas, port and starboard, were skinned with 1mm plywood sheets, **Photo 6**, and the quarter round bilges created with stripwood before skinning the flat hull bottom. This was a simple and quick way to create a hull like this, the block foam inside the bow and stern areas being 'dug-out' to make space within for the r/c equipment etc., **Photo 7**. PVA glue is as good as any

The hull is built from plywood and dense polystyrene foam, then covered with glass reinforced plastic...





for fixing the foam to the plywood frames and a coat of emulsion over the shaped foam in particular, will prevent it being dissolved by the solvents in the GRP once that stage in the project is reached.

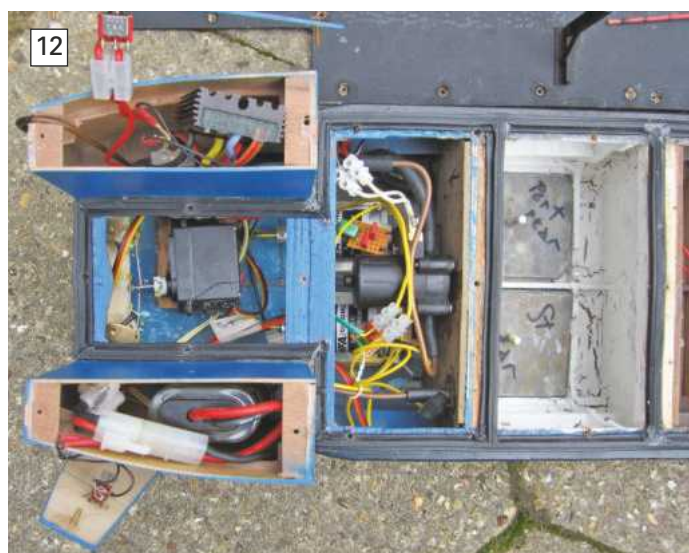
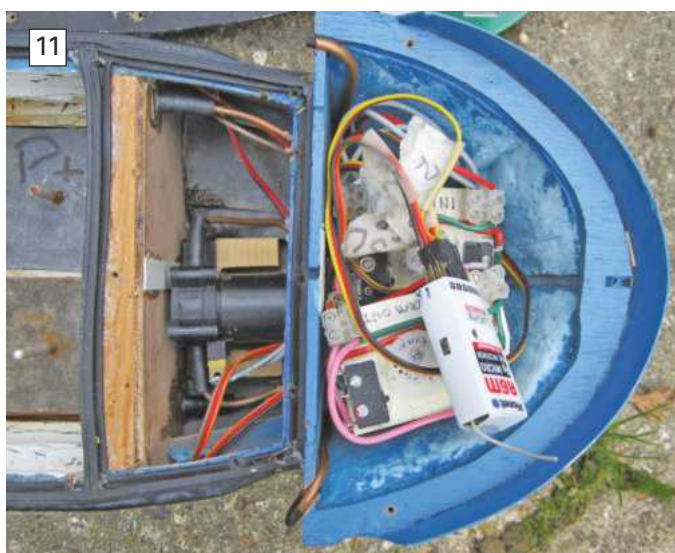
The hull was then completed with its main deck, forward superstructure, **Photo 8**, and the two funnel

housings aft, **Photo 9**. The main deck, which ultimately has to be removable for internal access, has to be attached and sealed to the hull, since when the model is in 'sunk mode', it will be under about 50mm of water. This was all achieved by using a small rubber gasket and 40 screws - not easy! The forward superstructure block is fixed to the forward deck section by a couple of screws. The aft funnel structures are waterproof and permanently fixed to the lower hull section. **Photo 10** shows you Blue Marlin thus far, but the hull has not yet been 'armoured' with fibreglass.

How does it all work?

Photo 11 is of the bow section and here you can see the two servo operated pump switches, the receiver, and in another section the water pump. Conduits carry cabling fore and aft. In **Photo 12** we have the stern section which was a big squeeze! The funnel casings are boxes attached to the hull and externally sealed, since the only way in or out is from the top. As the model sinks, so these casings also become deeper in the water. Here you can see the two drive motors; the pump forward of them on the other side of the bulkhead; the rudder servo just squeezed into place and the battery vertical in the starboard (at bottom of picture) funnel casing. It was not possible to have conventional rudders, so I cheated by fitting steerable Kort nozzles around the propellers to save space.

Water is pumped in and out of the model via copper pipes, the outer ends of these being





LEFT: Normal 'surface' surface operation.

BELOW: That sinking feeling! Blue Marlin 50% through the submerging sequence.

positioned to be below water at all times, but they must be within the hull and above the 'sunk water level' so as to prevent premature flooding of the hull by siphoning action. There is also an overflow pipe to each tank in case the tanks are over-filled. The tanks are just the insides of the hull bottom and sides, suitably waterproofed. In other words, much of the central hull section is itself the water tank.

Two 380 type motors provide the main forward and astern propulsion, but later, as you will read, one was subsequently disconnected. These motors are just about discernable in this last picture either side of the stern mounted pump.

Finishing off

The hull was sheathed with GRP as mentioned earlier and painting was a simple colour scheme. Radio is 2.4GHz and the model is intended to very much 'stand-off' in concept without too much detail, as it was intended to be very much a practicable working model.

Operation

Well, its different and certainly attracts attention when sailing on the lake, **Photo 13**, and in **Photo 14** it is 50% submerged. The next picture, **Photo 15**, is of Blue Marlin 75% submerged and the last in the sequence, **Photo 16**, has it 'sunk' as far as it will go. Blue Marlin actually manoeuvres quite well and has a fair turn of speed. In fact, having two propshafts has proved unnecessary, so one motor has now been disconnected. Funnily enough, just having one propshaft driven, and it being off-centre as a consequence, has made no difference to the on the water handling and steering.

Sinking and raising the model is quite a long process. The pumps work well, but filling and emptying the ballast tanks does take time.

Conclusion

This is a model that is a bit different from those normally seen at the pondside and it does not use complicated electronic gadgetry to make sure it sinks and rises uniformly. The model does not claim to be true scale, but 'does the job' and that is good enough for me and it all works, which is the main thing.

Enjoy your hobby - **David Heaps**



ABOVE: Blue Marlin 75% through the submerging sequence.

LEFT: As deep as it will go! Blue Marlin is quite stable and the kids (and adults!) at the pondside are quite fascinated by it all.



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Raboesch Propshafts



ABOVE: The Deputy Mayor being shown some of the models by Eric Platts of the host club. BELOW: A very tidy Huntsman being launched.

Alvaston Pirates Model Boat Club



Phil Button reports from
their Grand Opening Regatta

BELOW: The club has an inflatable recovery boat with an electric outboard motor, and this is seen here crewed by John Mullarkey and Tim Garrod, setting out the docking harbour and lighthouse, and the weather at the start of the day which went distinctly downhill thereafter!

The day of the Alvaston Pirates Grand Opening Regatta on 11th May 2014 had been advertised in Model Boats and the Derby Telegraph as taking place at the lake within, not unsurprisingly, Alvaston Park in Derby!

Now for a little wishful thinking: The day dawned bright, calm, warm and sunny (if only!), but actually the weather was dull, grey and overcast with a 75 to 100mm swell on the lake and blowing what for model boats amounted to a severe gale. There was also a threat of rain to come at any time, so



all did not bode well. One guy said that you could tell it was getting nearer to summer as the rain was just that little bit warmer! We were supported by displays of model boats from Burton & District MBC, Papplewick MBC and Nottingham MBC, but the weather was already grim!

On the Water

Following a briefing for boat skippers in the welcome shelter of a gazebo, a few brave souls ventured out on to the lake, where conditions were truly horrible! A number of yachts tried to sail, but most ended up on their beam ends and swiftly left the water before disaster overtook them. However, some boats succeeded in beating the weather conditions as the pictures show, but it was not easy, but then why should it always be so?

Official Opening

Councillor Shiraz Khan, the Deputy Mayor of Derby, attended to officially open the regatta, although since the order of the day was to keep out of the weather as much as possible, the opening





ABOVE: Dick Habgood's Henry McSquirter vacuum cleaner novelty boat, making a clean sweep of docking. It is fitted with a water jet, but it was not really needed on the day.



ABOVE: Steve Whitehead's U177 suffering badly from the weather conditions and it's not sinking, it was surfacing!

BELOW: Ben Lawless neatly parked his Club 500 boat on the base of the lighthouse.

Finale

Although the weather calmed a little after the official opening, it did not last long and the rain returned with a vengeance after lunchtime and we were very glad of the shelter afforded by the gazebos. Whilst it was pouring with rain, everyone was tempted out of cover by the sight of Ben Lawless' Club 500 boat parked on the base of the lighthouse. leading to the suggestion that we should have a competition to see if anyone could repeat the feat, but the weather induced a little sanity, so no one else tried it. However, in spite of the weather, a good time was had by all, even though few members of the public ventured out to join us on the day, but I am sure that the nearby 'Mad Hatter Tea Room' did a good trade in hot drinks and food, so all was not lost.

At the end of the afternoon, whilst carrying one of my boats to the car, I was caught by a particularly torrential downpour and took shelter under the eaves of the pavilion. There was so much water that I seriously considered sailing my 1:108 scale tug Lucky XI (Model Boats, March 2014) on the car park, but refrained as I was afraid it might be sunk by the rain!

And the club?

We meet at the Alvaston Park Lake in Derby on Saturday and Sunday mornings (and sometimes other days) when the weather permits. The park has excellent facilities, including free parking, an on-site café, toilets, football pitches, tennis courts, an outdoor exercise area, ducks, geese and swans for the kiddies to feed and a top class BMX bike track.

Website: www.alvastonpiratesmodelboatclub.co.uk.

All the photographs were taken on the day by John Bayliss and are published with his kind permission. ●



ABOVE: David Rodger (in hi-vis jacket), the deputy mayor and his driver making the best of what shelter there was!

LEFT: A successful docking by a Perkasa torpedo boat.



Phil Button's Mosquito' tunnel hull hydroplane from a Glynn Guest design (Model Boats June 2004 Free Plan) passing the harbour.



Richardson Trophy



Roger Stollery
reports on the
Footy team race
held on 22nd June
at Frensham Pond

TOP: Footy yachts racing with rather larger dinghies in the background.

Results:

1st: Abington Park (AP) Assetts

Peter Jackson, Peter Shepherd
and Andrew Sturt (Jnr).

2nd: Swords

David Wilkinson, Scott Wallis,
Sid Sims.

3rd: Frenshpoole

Martin Raishbrook,
Rory Burdock,
Nick Royse/Roger Stollery

4th: Frensham

Keith Parrott, Bryan Stitchbury,
Steve Hill

5th: Abington Park (AP) Blowkes

Richard Sturt, Brian Hawkins,
Nigel Rudd

Five teams of Footy enthusiasts from across the country travelled to leafy Surrey on 22nd June 2014 to race their r/c yachts in teams of three at Frensham Pond Sailing Club. The event was organised by Guildford MYC, but FPSC Model Yacht Group provided all the support for the event, which ran very smoothly.

The weather was beautiful, hot and sunny, but the wind was light and relatively steady in direction from the SSE in the morning, but became more southerly and variable from over the trees in the afternoon. The Footy's sported their biggest rigs for most of the time, which provided some good performances even in the lightest breezes. Only two teams of three were on the water at once, so it was a very relaxed event when you are not sailing and at times provided a spectacle of exciting competitive racing. Competitors were able to use the racing rules, not just to avoid collisions, but positively to slow down the opposition in order to allow a teammate to catch up, or pass. Everyone was aware of the winning combinations, which must be equal or less than 10 and on several occasions the results of the match hinged on the two boats lying in 5th and 6th places; you had to make sure that you finished 5th if you wanted to win the match!

Twenty races were sailed in two rounds of a schedule sailing each other team twice and each team sailed a total of eight races. The names of the teams were created to differentiate between the two teams from Abington Park and a related name for members of different clubs forming a team. The

Swords team got off to a good start by winning all of their matches in the first round, followed by *Frenshpoole* with three wins, *AP Assetts* with two wins and *Frensham* just one win, with the less experienced *AP Blowkes* team unable to win a match. As the wind appeared to die at the end of this round and there were some repairs to be done, lunch was taken.

AP Assetts started Round Two to win from their fellow club members in *AP Blowkes*. The latter stood a good chance in the next match with *Swords*, because David Wilkinson's IAMBUS 2 Footy was unable to finish. However as the remaining *Swords* finished first and second, they could not be beaten as this was a winning combination. *Swords* were in trouble again in the next match with *AP Assetts*, as the rigs of Peter Jackson's SLIM and Sid Sims' ICE became entangled. When they eventually drifted to the shore the other team members had finished with an equal score, so there was a 'match' race to the finish, which was won by Peter Jackson. In the penultimate match there was some real team racing, as *Frenshpoole* started badly against *AP Blowkes*, who were in a winning combination until Roger Stollery's ICE, slowed down their leading pair, Brian Hawkins and Nigel Rudd's ICE forcing them well off the rhum line. This allowed young Rory Burdock's SUPABUG to eat away at their lead and eventually pass Nigel to gain 3rd place and finish with the winning combination 1, 3, 6. However, *Frenshpoole* were not so lucky in the final match with *AP Assetts*, who finished with a 1,2,5 and the top score of four wins in Round Two.

This left the final results with a three-way tie between *AP Assetts*, *Swords* and *Frenshpoole* with six wins each. This was decided by a sail-off with three more matches in which *AP Assetts* beat *Swords*, who beat *Frenshpoole*, who were also beaten by *AP Assetts*, who with a score of 2,3, & 4 won the match and the event.

The prize winning teams thanked the organisers for another good event at Frensham Pond SC and thought that the late Angus Richardson in whose memory the trophy was given would have been pleased with the event; the sporting way it had been sailed and the input by the young dinghy sailors in the *AP Assetts* and *Frenshpoole* teams. ●



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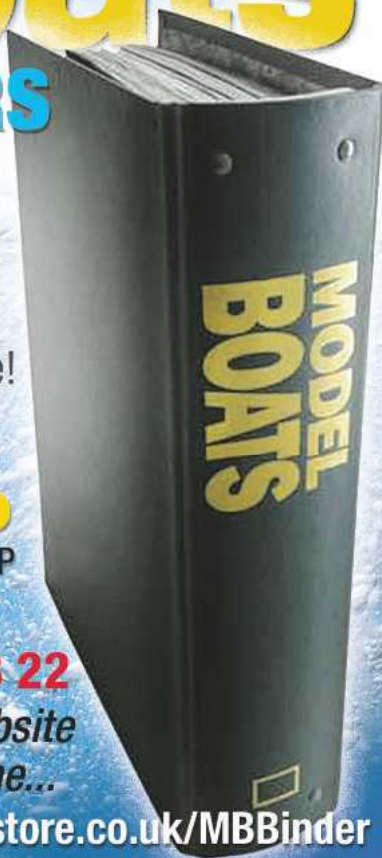
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Dirk Bonne's
1:72 scale model



HMS Vindictive



The resulting model was actually very good to my eyes, so that was the start of a new hobby and many more model ships followed, including several from Deans Marine warship kits alternated with scratch built models, some of which were for static display and some radio controlled.

HMS Vindictive - history

This was a second class cruiser of the RN Arrogant class and it played an important role in the raids on Zeebrugge and Ostend during WW1, now almost 100 years ago. This old cruiser built at the end of the 19th Century, first landed British soldiers on the Mole of Zeebrugge Harbour whilst under heavy fire. The soldier's task was to eliminate German artillery so that three block ships could then blockade the harbour entrance ensuring U-boats could not enter or exit the port.

A few weeks later on the 10th June 1918, the now severely damaged ship had her final task when she was transformed into a block ship filled with 200 tons of cement (when flooded this would become solid and heavy), to obstruct the Ostend harbour's entrance for the same purpose. Unfortunately the raid failed, as the ship didn't sink in her planned position, so the harbour entrance remained open.

The 2013 monument

In 2013, the remaining piece of HMS Vindictive's bow was restored and placed near where the ship sank 100 years ago, **Photo 1**. There was a memorial service with relatives of the original crew, the King of Belgium, the British Ambassador, various celebrities and naval marines as in **Photo 2**.

More than fifty years ago when still a little boy, my model making had already started! My father served as a crew member on the Ostend to Dover ferry route and after every voyage he offered me a present, usually a Dinky toy or a small Airfix plane kit in a plastic bag bought from a toy shop in Dover. Ten years ago I decided to surprise him with a scratch built model of the passenger ship Prince Charles, the last steamship of the Ostend to Dover shipping line on which he served for such a long time.

The plans of this warship were obtained from the British National Maritime Museum.



The model

The plans of this warship were obtained from the British National Maritime Museum. The first model was constructed to 1:96 scale and painted in standard WW1 grey, **Photo 3**. I am a member of the Model Yacht Club Noord Zee Oostende (MYCNZO), a club which concentrates on true scale model boat building, so decided to build another to 1:72 scale, but to be painted in Victorian naval livery as you can see from these pictures.

Hull

Balsawood bulkheads and wood planks were the basis of the hull, **Photo 4**, and **Photo 5** is also a bow view of the partly planked hull. After rubbing down and filling where necessary, it was then finished with epoxy coat, **Photo 6**. The most difficult task was to smooth the hull's exterior and a power sander was a big help, but I recommend doing this work outside and not in a garage, where clean laundry was waiting to be ironed to my domestic misfortune, as the whole place was then covered with a fine coating of epoxy dust and my wife was not best pleased!

Photo 7 shows the hull at a later date, painted and revealing its huge internal volume.

Superstructure

Unashamedly, I use commercial fittings if they are appropriate and Aeronaut, Billings, John Haynes,



Deans Marine, etc. all had their websites checked for suitable 1:72 scale parts and those that looked right or could be easily converted, were utilised.

Ship's boats: Most of these were created from shaped balsawood blocks, covered with plastic strips to represent planking and with green tissue covers, **Photo 8**.

Unashamedly, I use commercial fittings if they are appropriate...

9



Funnels: Tubing of the right diameter could not be located, so a smaller tube was used, cut to length and built-up with plastic strip and filler. Each funnel has a Seuthe 6v smoke generator (please see Photo 8 again).

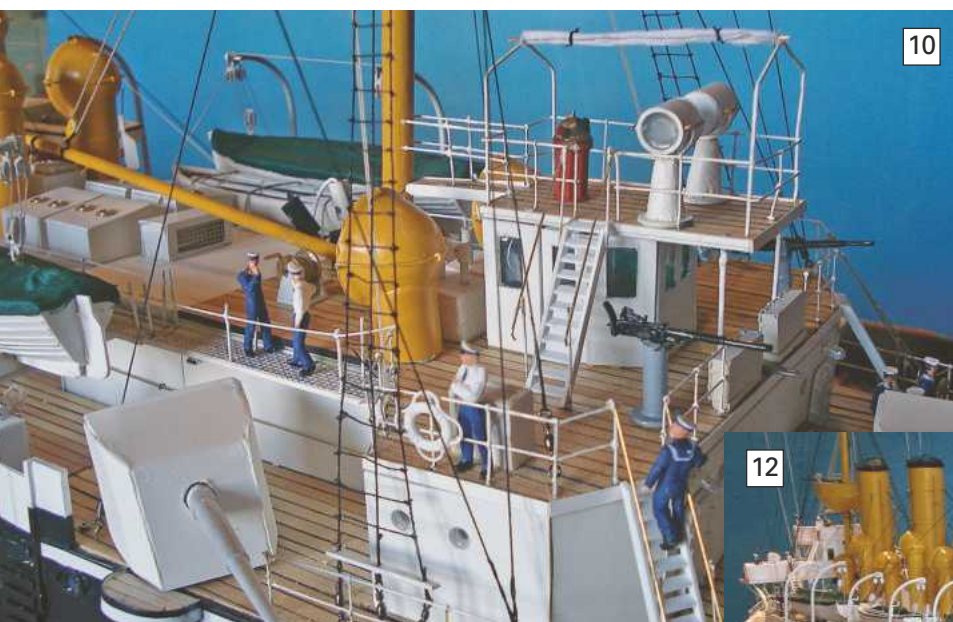
Centre deck part: At 1:72 scale, there is a lot of space in the hull to put batteries, motors, lights, r/c equipment etc. and the inevitable removable ballast, as the model has a total weight of 18kg to float on its waterline. Because the upper part of the main superstructure is rather narrow and all the ship's boats, davits, funnel cable supports, guns, etc. are all around, it can be difficult to insert the removable ballast within (and out of) the hull at the pondside,

without damaging anything. So a method of lifting the centre part of the upper deck with the help of a large screw was created and this section can be slid over the hull, **Photo 9**.

Crew: One of the last jobs was to add humans and Preiser figures were suitably adapted and painted, **Photos 10 and 11**. These figures come in a range of scales and it is not too difficult to find something suitable, or that can be easily modified, for virtually any model ship project.

The finished model

HMS Vindictive is not a small model by any standards, but at 1:72 scale it is an impressive model both on the stand, **Photo 12**, and on the water.



10



11



12



On the water

Last but not least were the first proper sea trials, **Photo 13**, although an initial test was performed earlier in the garden pond. Having a deep draft and displacing 18kg with its large hull, the model

sails very well, its two Graupner Speed 700 motors being more than adequate to propel it.

Time to build? This was 18 months of leisure time, and time well spent as far as I am concerned.

Contact information

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bonne.dirk@hotmail.com

MYCNZO

website: <http://mycnzo.yolasite.com/>

Presier

website: <http://www.preiser-figuren.de>



Kriegsmarine WWII 24 metre KFK

Chris Walters' 1:24 scale model of a Fischkutter based craft

This was built on a Sirmar GRP hull using plans from Kingston Mouldings and apart from the guns, the rest is scratch built with masters made for some of the cast resin fittings. The figures are HSL

Mouldings German crew resin castings. Scale is 1:24 and the model is just over 39 inches long and 10 inches in the beam. A 6v Marx Decaperm motor turns a 55mm three blade brass propeller, with a homemade propshaft and rudder.

The basic wheelhouse was made from styrene card, clad with vee-groove embossed styrene card to create the planked panel effect. The gun platforms are also from styrene card with a marine plywood deck with pencil lines to represent

the planking and this was all stained to darken the wood. The 20mm four barrelled Vierling gun mountings came from 'BattleCrafts' as did the eagle on the front of the wheelhouse and the paints are all from White Ensign Models. This is fundamentally an anti-aircraft equipped trawler-based craft, fitted for mine sweeping, which in many ways performed a similar task to the British HDML's of WWII.

BattleCrafts website:
www.battlecrafts.co.uk





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Test Bench

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Aquacraft 1:72 scale USS Fletcher

RIGHT: The 1:72 scale ARTR Aquacraft USS Fletcher model is big!

BELOW: A close-up of the bow section, and the paintwork is superb.



the superstructure fit snugly in place, but are designed to be lifted-off. Part of the installation work is already done, as two brushed 550 type motors are fitted and the connection for the rudder control is also in place. There is plenty of space for you to fit the necessary r/c equipment. Hobbico have all of this in their product range, but you do have the choice to fit whatever you desire, and any extras.

The SSP (Suggested Selling Price) is £849.99 in the UK and this model and the rest of the Aquacraft range is now distributed and promoted in the UK by Revell, part of the Hobbico group and it is available through the retail trade. Interestingly, Hobbico in the US is a 100% employee owned business, rather like John Lewis in the UK and as a result, are doing rather well.

Review by Robin Buckland

railings, it all looks superb and if you wish you could 'weather' the model and add a crew. With this model being so large, it will certainly become the centre-piece of any collection.

Truly bringing the model to life means seeing it on the water under radio control, for which anyway, it is primarily designed. The centre and rear sections of

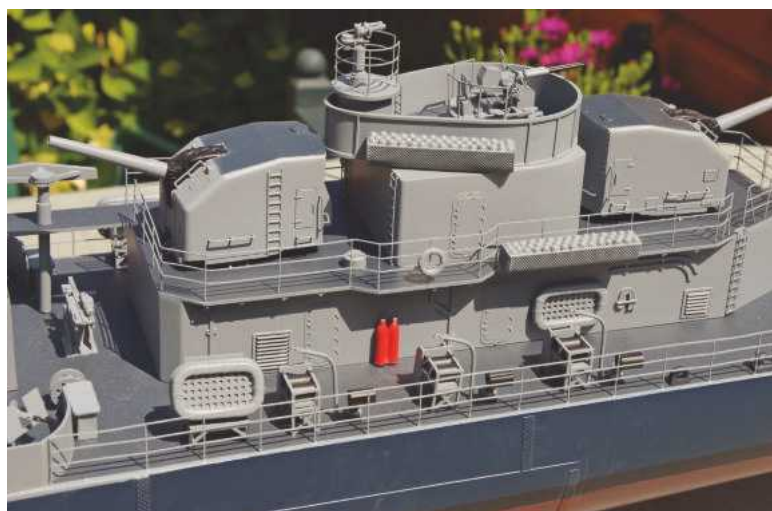
Hobbico is a US based hobby manufacturer covering a wide range of modelling subjects and Aquacraft is one of their brands which has recently in UK joined with Revell, now another Hobbico brand. Revell in the UK arranged for me to see one to have a closer look.

There are actually doing two versions, one in post-WW2 German service and the other as in the US Navy. 175 of this class were built and saw service all around the world and it is the US version reviewed here. It is huge and ready-built, so the packing box is substantial and about 1.6m long, but is not heavy, just big!

Inside the box the model nestles in foam frames and also

included is a four-part wooden display stand. The model has a fibreglass (GRP) hull, fully made and painted, and the superstructure is made from laser-cut ABS. A few individually packed parts have to be user installed, such as the mast, the two ship's boats and five gun turrets.

All pre-painted, the model itself looks really good and the mast slides into a hole in the superstructure and you will find the rigging for it already in place, with small metal hooks on the ends. The gun turrets simply slot into their places and the boats are hung on their davits. With all the rest of the fittings such as anti-aircraft weapons, mine-laying racks, stowed liferafts and fine



Detailing on this 1:72 scale ARTR model of USS Fletcher is superb.



The new Dremel Micro multi-tool.

Dremel Micro

Combining the needs of light DIY enthusiasts and hobbyists, Dremel's new Micro, is its most compact cordless lithium-ion multi-tool that they have launched to date.

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Price is £110 inc. VAT, available from Amazon, www.Dremel-Direct.com, www.Tool-shop.co.uk and selected DIY stores from 1st September 2014. This tool is also currently being offered as a free to enter competition subscriber prize on our Model Boats website.

Review by **Paul Freshney**



An RNLI Tamar searchlight.



An Adolf Bermppohl searchlight.

Herbundsab Modellbausätze

Owned and run by Herbert Hallmann & Sabine Spaller, this specialist German business makes a range of highly detailed working scale model searchlights and deck lighting suitable for a range of craft, particularly lifeboats. For example there are some for the RNLI Tamar class as well as the Adolf Bermppohl and other German lifeboats. Sabine speaks and understands English well, so direct communication should not be a problem.

Contact details? Email is best, and their website shows the current product range. Address is: Quail Stieg 6a, 38118 Braunschweig, Germany. Tel: (00 49)0531 2504748 or (00 49) 0531 2504767 from the UK, or **home website:** www.herbundsab-modellbausaeetze.de, or **shop website:** www.herbundsab.de, **email:** sabinespaller@herbundsab.de.

Review by **Paul Freshney**

Rescue 17 Fireboat

New from Hobbico, imported into the UK by Revell, is the Rescue 17, a semi-scale model fire-fighting boat with a functioning water cannon capable of rotating 120 degrees and hitting targets ten feet away, ten LED lights and a sturdy pre-painted fibreglass structure. The model is controlled with the supplied Tactic TTX490 4 channel 2.4GHz transmitter.

Inside the hull, easily accessible thanks to the lift-off superstructure, is a watercooled 600 brushed motor. Under the large rear hatch are the 11.1v speed control, receiver, water pump and steering servo. All this is factory fitted, but because all the components

are standard items, they can be modified and upgraded by the owner should they wish. Spare parts for the model are available from the manufacturer.

Despite being 38 inches (965mm) long and weighing 3.6kg, the model has an impressive turn of speed. It's also well detailed with ladders, bollards, handrails and fire extinguishers. A nice touch is the wire-rope handrails around the edge of the deck, a feature of many modern boats. The model is ready built from the box apart from the mast which is attached using a single screw. The owner has to supply a 11.1v 2200mAh LiPo battery for the model which should give a 10 minute run time. Eight



AA batteries are required split between the transmitter and onboard lighting system. RRP is £329.99, available from

Hobbico stockists. Website for more information: www.aquacraftmodels.com

Review by **Phil Parker**

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VERTICAL

Weight, empty: 590g (20.8oz)
Water capacity, steaming:
approx. 125ml (4.2 Fluid oz)
Start up time from cold:
3 minutes
Width, including burner &
steam valve: 115mm (4.53")
Total height:
200mm (7.87")



Miniature Steam

2" Centre Flue Marine Boilers



HORIZONTAL

Weight, empty: 680g (24oz)
Water capacity, steaming:
approx. 150ml (5 Fluid oz)
Start up time from cold:
3 minutes
Width, overall: 65mm (2.56")
Length, including burner:
155mm (6.1")
Total height: 137mm (5.39")

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Pursuit - David Hough's AA class boat.

BMPRS News

Website: www.bmprs.co.uk

Craig Dickson reports from Branston Water Park

...this event turned out to be just as exciting as the previous ones, with everyone enjoying some superb and exciting racing...

Hello readers! Our second visit to Branston Water Park was accompanied with superb hot summer weather all day, which set the scene for a fantastic day for members and spectators alike. The summer holiday season was now in full flow, meaning the turnout was lower than usual due to vacations. However, this event turned out to be just as exciting as the previous ones, with everyone enjoying some superb and exciting racing and plenty of fun banter. Also, it was extremely encouraging to have quite a lot of spectators asking questions and wanting to know more about what we do.

Mark Wild was OOD (Officer of the Day) again, to manage the event from taking the race entry bookings through to organising the actual racing on the day. Mark expected things to be straightforward, but his organisational skills were put to the test later due to an unexpected event.

The driver's meeting was called prior to the first race with Mark running through the usual all-important safety aspects. A couple of the buoys were adjusted at the request of drivers to give a bit more room on the course for overtaking. With nine boats entered in the Spark Ignition D class and only two in the C class (nitro boats), it was decided that the latter's heats would be merged with some of the D class

to even-up the numbers. Bear in mind that these C class nitro fueled boats can be equal speed-wise with the D class boats, so it made sense. Each class of boat had two heats in which to race and the total of the laps scored over both decided the winning positions.

AA class

Five boats featured in this class with a combination of different hulls and engines. Bernard Holder running his MDS 21 powered Crusader 1 took first place with a total of 49 laps. David Hough's GO 28 powered Pursuit wasn't far behind with 47 laps earning him second place. Mike Barnes clocked up 42 laps with his MDS 28 powered Sea Spirit for third place.

Graham Stanley's impressively quick OS 21 powered Cavalier lost a lot of laps in Heat One due to his boat stopping, needing rescue and a restart, but he still clocked up 32 laps in total for fourth place. Junior member Amelia Cheshire's Challenger 43 was superbly presented and very fast. It won her the award of Best Boat of the Day, so well done Amelia! She did experience some difficulties in Heat One when trying to start her engine, and some problems with it stopping during both heats, which cost her vital laps. However when her boat was on form it was impressive and we need to remember that Amelia is still gaining valuable experience being relatively new to racing at this level.

A class

With five boats entered in this class, the majority proved very reliable staying on the course for the full duration of the heats which gave their drivers a huge advantage. The CMB 45 powered Crusader 2 by Bernard Holder gained a total of 52 laps to win first place, and his second Class win of the day. My SC 46 powered Crusader 3 gained second place with 51 laps in total and once again against Bernard, despite my not stopping in either heat, the boat was not quite quick enough to challenge him. Andy Rennie's ASP 46 powered Challenger clocked up a total of 39 laps for third place and he enjoyed some

D75 and C86 battling it out in their combined race.





very challenging racing, especially in Heat Two when his boat and mine knocked against each other when battling it out at full speed for Buoy Four, but thankfully we both kept going with no damage.

Luke Bramwell with his Sea Spirit 2 had an eventful start to Heat One. With Mike Barnes pitting for him, his boat was launched with enthusiasm, but one key thing had been overlooked because the propeller was not fitted! So as a result, Luke came in with 32 laps total for fourth place. Mike Proudman's Shockwave achieved 24 laps for fifth place but with all of his laps scored in Heat One, and zero in Heat Two, he may well have been disappointed as the boat showed potential to do much better.

The unexpected!

With seemingly perfect conditions, what could possibly cause a problem on a day going as well as this, and you've probably guessed it now? Into the third race of the morning and the outboard motor on the rescue boat stopped working and despite a determined effort to address the problem, it was deemed U/S pending a workshop repair. OOD Mark Wild faced a difficult problem because with no powered rescue facility it left potentially only two options:

1) Call off the meeting and postpone it.

2) Seek agreement from competitors to race knowing that if their boats should stop, they remain that way (un-recovered) until the end of the heat, whereupon the rescue boat would be manually rowed to recover the dead boats. This was the time when you really didn't envy him as OOD!

Then Kevin Alcock stepped forward and very kindly offered to do a two hour round trip and pick up his own outboard engine and lend it to us to enable racing to be resumed, which was such a kind gesture. He saved the day and Mark therefore announced a rather longer lunch break than normal and in the glorious summer weather it didn't seem long before racing resumed once Kevin returned, so everyone was delighted. It was however decided to cut the heat duration to 10 minutes each in classes that had not raced prior to the rescue boat problem, so as to prevent a late finish.

B class

This mid-nitro engine sized class of mono hulls had three entrants. Bob Cheshire was running a Webra 61 rear-induction powered Challenger and very neatly presented it was, however he unfortunately suffered problems in both heats because when his boat was fired up and launched, there was no drive or propulsion as the dog drive sleeve that connected to his surface drive propeller kept spinning on the shaft, when it should have been anchored securely by a grub screw. This screw appeared to keep coming undone which was extremely frustrating for him, so just third place for him.

With 69 laps in total, Bernard Holder's CMB 67 powered Magnum came home with his third win of the day and Garry Dickson's Webra 61 powered

Challenger was only one lap behind to take second place. Garry had previously noticed issues with the balance point of his boat and having corrected this after the previous event, his boat ran very well, handling much better in the turns.

C class

Although only two competitors entered this class, with the two C class heats including some D class boats, it resulted in some exciting close racing so it certainly wasn't a 'walk in the park' for these two racers and guess what? Bernard Holder yet again won the race with an impressive total of 72 laps. He kept his CMB 90 powered Magnum going for the full duration driving faultlessly and as usual, very tight to the buoys. When you consider that Bernard entered four races and won every one of them, he achieved outstanding results on this day and Harry Stuart achieved 34 laps in total, to take second place. His OPS 80 powered Warhawk unfortunately did not run so well in Heat Two and he brought his boat in to make some tuning adjustments. It is amazing how many laps can be lost when this happens, such is the importance of keeping going if at all possible.

D class

This popular Spark Ignition (S.I.) class which comprises the large capacity petrol engines, saw nine competitors battling it out and as always there was plenty of furious racing action. First place went to Mike Barnes running his Gizmo 28 powered Patriot with 78 laps. Garry Dickson's MPM 31 powered Miami clocked up a total of 71 laps to take second place and Kevin Alcock's Patriot came a close third with 69 laps. These Patriot hulls deliver outstanding performance and seem to have the ability to take the turns practically flat out, whilst retaining stability on the water.

In the second heat, Kevin's Patriot was involved in a substantial collision with Graham Stanley's Pipedream resulting in a rescue being needed. That single incident cost both of them valuable laps, but in the case of Kevin, his outstanding first heat lap score of 51 laps carried him through to third place. Would he have won this class if it wasn't for this mishap?

Andy Uttley's impressive TK 26 powered Phantom did not do so well on this occasion because unfortunately in his first heat, a boat ran

ABOVE: D108: Ron Willet's splendid Apache in action.

BELOW: A6: Luke Bramwell battling it out against Mike Proudman's A85 Shockwave.



With seemingly perfect conditions, what could possibly cause a problem on a day going as well as this...

Bernard and Carol Holder – he says he does not take racing too seriously, but his concentration would suggest otherwise!





ABOVE: Pete and Alan ready to rescue! Where would we be without their selfless dedication?



ABOVE: 133: Harry Stuart's winning Silver Fox cat'.

It was great to see the two new catamarans in this larger class competing together, both splendidly put together...

The inside of Harry Stuart's wooden D class hull.



over the back of it. This ripped off the receiver aerial and that was it for the day. The Zenoah powered Phantom of Ken Dodd also had to be retired prematurely with only five laps scored, as the rudder servo was behaving erratically and for safety reasons he rightly decided to stop racing for the day.

Cat T1 class

The two catamaran classes featured only two competitors in each class although for those that entered it was a good opportunity to clock-up all important points for the championship table!

Harry Stuart's R2 Silver Fox was first with 13 laps, but the boat stopped quite a few times

needing rescue and re-starts. Junior member Boyd Elson's fabulously presented X-Cat 38 proved very frustrating because its engine kept suddenly cutting out just as it reached the first buoy. So why did it behave that way?

Tests performed with the help of other BMPRS members revealed the problem. The radio receiver was constantly going into failsafe mode, indicative of the receiver losing its connection with the transmitter soon after the launch of his boat. It is a great safety feature, but frustrating when it happens for no apparent reason. No doubt Boyd and his father Daz, have since addressed this problem.

Cat T2 class

It was great to see the two new catamarans in this larger class competing together, both splendidly put together and beautifully presented. Garry Dickson's MPM 31 powered Mercury gained a total of 56 laps for first place and Daz Elson's X-Cat 48 (his own design and build) came second with 47 laps.

In the earlier stages of the races, it was neck and neck between the two of them with Garry being a bit more cautious and on a couple of occasions allowing Daz to overtake him in the turns. However when the X-Cat by Daz unexpectedly stopped, it gave Garry the chance to open up a winning lead.

End of the day

Time for the certificates to be presented and special thanks were given to Peter and Alan of the Burton MBC who again provided vital facilities to us and who always make us feel so very welcome. Also to Kevin Alcock who saved the day by going the extra mile(!) to provide an outboard motor and to Madelyn for lap scoring and Mark Wild for handling things brilliantly.

Not only did Bernard Holder win four first place certificates, he also collected a special trophy courtesy of Burton MBC for the highest number of laps achieved across all the boats. I suspect that he will need to invest in a new trophy cabinet soon!

Boat maintenance after a race?

So, the boats are bundled in to the car (or in some cases a trailer or van) after a race and taken back home and what is then needed maintenance-wise?

It may seem obvious, but the first priority is to give the exterior and interior of the boat a really good clean, removing any oil residue and especially water from the boat. Daft though it may seem, water is the biggest enemy of a boat that is temporarily laid up pending its next race.

The engine

Once the boat appears relatively clean inside, it is time to put some special engine 'lay-up oil' in the carburettor and spin the engine over to ensure it coats the crankshaft bearings to protect against corrosion. Crankshaft bearings in petrol and nitro (glow) fuelled engines are very vulnerable to corrosion if any moisture is present and in the case of nitro engines, methanol based fuel can absorb moisture from the surrounding air, so some suggest that it is best to run the engine and pull off the fuel supply tube stopping the engine to ensure that every



drop of fuel is burnt-off prior to applying the lay-up oil. With a petrol engine, simply remove the spark plug (and its connector) then apply the oil into the cylinder head before cranking it over a few times.

The radio box

Assuming that the sealed radio box lid has not been removed during the race day, it is time to remove the retaining bolts or clips and check that the interior is free of moisture. If no water or condensation is present, that is a good sign! If moisture is present, it needs to be removed and I would suggest that the boat is brought inside the house for things to dry out properly and subsequently be checked for reliable operation of the r/c components. Personally even when I find no problems, I always bring the boat inside my home to stay in a dry (non humid) environment for a few days, but please don't cause domestic problems!

And the other bits?

With the engine and radio control system looked after, the other key items are a relative breeze. The propshaft system will usually comprise a flexible shaft in surface drive boats or a solid steel shaft in submerged propeller propulsion boats such as the hulls from Bernard Holder like his Crusader. In the case of a flexible driveshaft, it is beneficial to loosen off the retaining connection (coupling to the engine) and remove the flexible shaft to wipe it down and allow moisture to evaporate prior to it being re-lubricated for the next race. The solid steel shafts arguably require very little maintenance because as long as a corrosion resistant ballrace supports the shaft (inside the boat) is well greased, it will run without problems.

And finally, how often do we look at a boat after a race and find out that there is a stray nut or bolt lurking in the hull? Where has that come from? The answer is straightforward as you should always check the tightness of key fixings, nuts bolts and screws and check to see where the errant bolt has come from!

Craig Dickson - July 2014

Branston Results: Sunday 1st June 2014

	Name	No.	Hull	Engine	Heat 1	Heat 2	Total
AA class (two x 10 minute heats)							
1st	Bernard Holder	86	Crusader 1	MDS 21	22	27	49
2nd	David Hough	87	Pursuit	Go 28	25	22	47
3rd	Mike Barnes	4	Seaspirit	MDS 28	21	21	42
4th	Graham Stanley	29	Cavalier	OS 21	7	25	32
5th	Amelia Cheshire	98	Challenger 43	Novarossi 21	3	6	9
A class (two x 10 minute heats)							
1st	Bernard Holder	86	Crusader 2	CMB 45	26	26	52
2nd	Craig Dickson	55	Crusader 3	SC 46	25	26	51
3rd	Andy Rennie	11	Challenger	ASP46	15	24	39
4th	Luke Bramwell	6	Seaspirit 2	SC 40	8	24	32
5th	Mike Proudman	85	Shockwave 36	Dynamite 32	24	0	24
B class (one x 15 minute one x 10 minute heats)							
1st	Bernard Holder	86	Magnum	CMB 67	41	28	69
2nd	Garry Dickson	44	Challenger 48	Webra 61	40	28	68
3rd	Bob Cheshire	16	Challenger	Webra 61R	0	1	1
C class (one x 15 minute one x 10 minute heats)							
1st	Bernard Holder	86	Magnum	CMB 90	44	28	72
2nd	Harry Stuart	133	Warhawk	OPS 80	27	7	34
D class (two x 15 minute heats)							
1st	Mike Barnes	4	Patriot	Gizmo 28	41	37	78
2nd	Garry Dickson	44	Miami 55	MPM 31	39	32	71
3rd	Kevin Alcock	75	Patriot	RCMK/Zen/Giz	51	18	69
4th	Steve Abbott	18	Phantom	RCMK	28	32	60
5th	Graham Stanley	29	Pipedream	Zen 26	34	20	54
6th	Ron Willets	108	Apache	RCMK	30	20	50
7th	Harry Stuart	133	Woody	GWS 26i	19	26	45
8th	Andy Uttley	22	Phantom	TK 26	15	0	15
9th	Ken Dodd	78	Phantom	Zen	5	0	5
Catamaran T1 class (two x 10 minute heats)							
1st	Harry Stuart	133	R2 Silver Fox	OS 45	2	11	13
2nd	Boyd Elson	72	X-Cat 38	ASP 46	0	0	0
Catamaran T2 class (two x 10 minute heats)							
1st	Garry Dickson	44	Mercury	MPM 31	28	28	56
2nd	Daz Elson	73	X-Cat 48	RCMK 30	24	23	47

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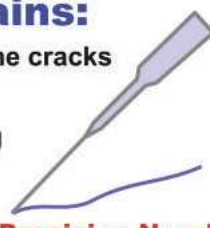


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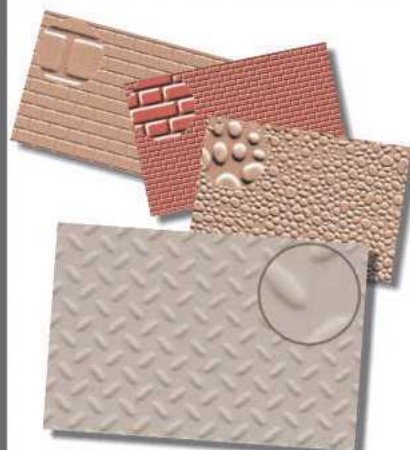
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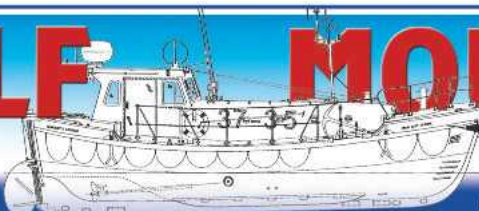
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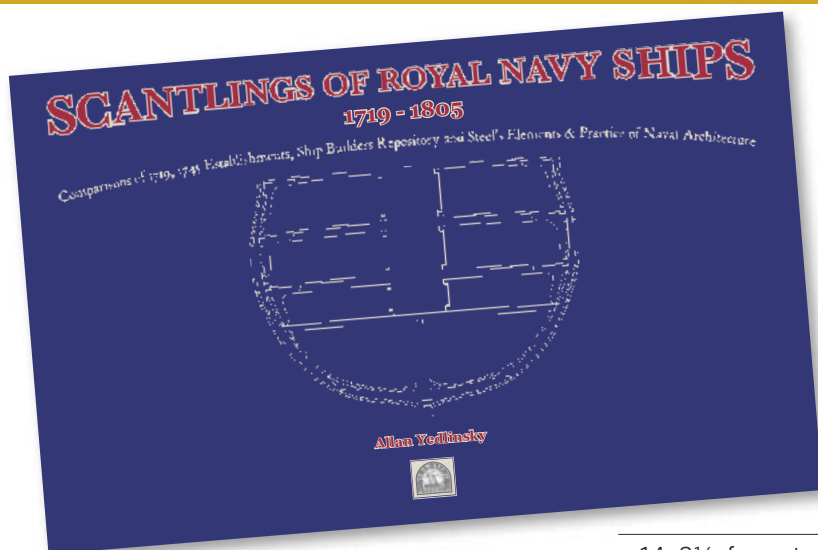
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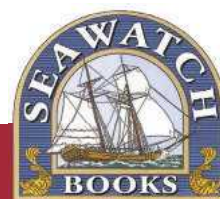
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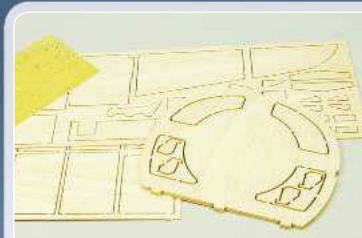
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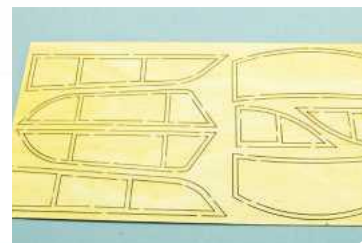


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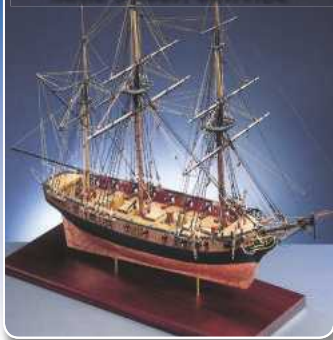
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