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Brass Propeller (A Type) 50mm - 3 Blade-M4	E14.58
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Brass Propeller (A Type) 60mm - 3 Blade-M4	E17.64
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Bow piece



This issue includes a Full-Size Free Plan worth £12.50 for Nomad, a semi-scale tramp steamer model. It has been designed by Glynn Guest and full step by step building instructions are also included in this issue, starting on Page 10. In addition, Andy Cope reviews the Aeronaut Bella hard chine sloop yacht kit and Phil' Button restores Red Dragon, an old wooden yacht. Dave Wooley reports from the popular Spring Model Boat Show held at the Waterways Museum in Ellesmere Port and we have a colourful gallery by David Walter of some of the vessels dazzle painted to commemorate World War One. We also have all the usual regular columns, including Range Finder, Flotsam & Jetsam and Boiler Room so I hope there is something here for all our readers.

Paul Freshney - Editor

Compass 360

Model Boats notice board for your news

Editorial Contact - Paul Freshney

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Balne Moor MBC

On **Saturday and Sunday 17/18th June 2017**, this club is holding a Tug Towing Pro-Am Weekend. This is your opportunity to come along on either or both days and have a go at tug-towing. Work with an experienced 'tugger' to learn from them how to tow vessels through the harbours. Don't worry if you have not got a tug, as someone will lend you one.

£4 for one day or £6 for the weekend. Bacon or sausage butties are available until 1230hrs for both events, hot and cold drinks all day and homemade cakes until finished. Satnav location is DN14 0ER. More information from: <http://balne-moor-model-boat-club.myfreesites.net/scale-and-tug-events> or email: mikebutler1949@gmail.com

King Lear Model Boat Club Open Sail Event

The club will be hosting this event on **Sunday 30th July 2017**. All model boat enthusiasts are most welcome for this informal and fun event. There is have a jetty and slipway for ease of access to the

lake so please take your boats along for a sail. There are ample parking and picnic facilities at Watermead Country Park, Leicestershire, LE7 1PD. There is a £2.50 entrance fee payable to an unmanned machine. The club hope to have cold rolls and hot drinks available on the day. Further information can be obtained from Marie Burdett, tel: 01162 613959 or email: kinglearmbc@ntlworld.com. For up to date information please visit the club website: www.kinglearmmodelboatclub.co.uk.

Model Boat Mayhem at Wicksteed, 2017

A final reminder that this is being held on **Saturday 27th and Sunday 28th May 2017** at Wicksteed Park, Post Code, NN15 6NJ, to mark the eleventh year of the 'Mayhem'. As usual, different events will be organised in preparation for this weekend. Entrance to Model Boat Mayhem at Wicksteed Park is free, however there is an entrance fee to enter the park (max. £6 per vehicle). Camping and onsite facilities are available via Wicksteed Park. For further information, please contact Nick Brown: Email: raflaunches@outlook.com

or visit the website: www.modelboatmayhem.co.uk (and click forum).

Information supplied by Nick Brown

31st Wings and Wheels Model Spectacular

This is being held on **Saturday 24th & Sunday 25th June 2017** at North Weald Airfield, Essex, CM16 6AR, from 0930 to 1730hrs on each day. This show encompasses model aeroplanes, helicopters, boats, tanks, Daleks and much more, the numerous traders and clubs being positioned mainly along the side of the runway. Model boaters are well catered for with a dedicated marquee and large model boat pool and some specific trade support for them including Mountfleet Models. Adjacent to the show is the North Weald Market, but only on the Saturday, so that is something else to make it all worthwhile for families to attend. Parking for visitors to Wings and Wheels is adjacent to the main trade and display areas with specific parking for Blue Badge holders. There are full refreshment and personal facilities on site. Many local clubs have displays in the model boat

marquee. Applications are invited from individuals and clubs via the website.

Advance tickets are available and for more information, please contact: admin@wingsnwheels.net or visit the website: www.wingsnwheels.net Tel: 01242 604126

Sumners Ponds Model Show, 2017

This event returns on the **10th & 11th June 2017** for its fifth year of displays on the lake, ground and in the air. There will be display areas exhibiting boats, planes, helicopters, quads, drones, trains, cars, kites and much more, with have-a-go areas, model traders, Bring and Buy, food and drink, plus other activities. In 2016 there were five distinct display areas, with the main area around the Ribbon Lake being primarily for boats, trains and tanks. The show site is: Sumners Ponds, Chapel Road, Barns Green, Horsham, West Sussex, RH13 0PR.

Full information is on the website: www.sumnersponds.co.uk or please email: events@sumnersponds.co.uk

Squaring ends of tubes

Paul Harmer's practical suggestion

Paul sent this note following an article in this magazine:

I have used this method to square up the ends of tubes and dowels, deburring and adjusting the length, many, many times on aluminium, brass and steel tubes of varying sizes up to

13mm diameter, which is the capacity of my drill press.

First, cut your tubes slightly over length, using whatever means you usually employ such as a hacksaw, razor saw, etc. Then place the cut tube into the chuck of a drill press and using

some medium to fine emery or 'wet and dry' paper (used dry) positioned over a flat area of the drill press table (or over a piece of wood to make a flat base) use the vertical control of the tool to press the tube against the abrasive paper. By using gentle pressure and moving the sandpaper around, length adjustments are

easy and controlled and you can even judge the amount being removed with experience. I have even used this technique on square and rectangular brass tube, although more care is needed for this.

This method makes it easy to produce a number of tubes of exactly the same length that are clean and burr free, and I hope this may be of help to someone.

Paul S Harmer

ARC Remote Research Boat



Anthony Addams reports on this versatile survey vessel.

The model boat you see here was on display at the Country File Live Show at Blenheim Abbey in July 2016 on the University of Southampton Ecology Research stand. Defined as an ARC boat, it is a remote controlled research vessel which is designed to carry scientific measuring equipment and can operate in difficult, hazardous or otherwise inaccessible locations. The mast you see in the central area contains at the top a GPS monitoring system using satellite led positioning. This instrument is able to record its position to an accuracy of 10mm horizontally and 30mm vertically, by reading those satellites – almost as good as our car Sat' Nav's!

Purpose

The bottom of the mast extends below the hull and contains measuring equipment, depending on the intentions of the user. For example, the measurement of water quality, pollution, depth, underwater obstacles, water flow speed and temperature, etc. An example quoted was the measurement of the depth and position of underwater construction progress (Network Rail are clients) such as concrete bases, water channels, and underwater pipes, etc. Likely users are environmental and fishery agencies, surveyors, marshland drainage contractors,

flood control and so on. The boat was developed in conjunction with HR Wallingford, a specialist organisation providing a full range of services to organisations concerned with water management and associated engineering.

The boat

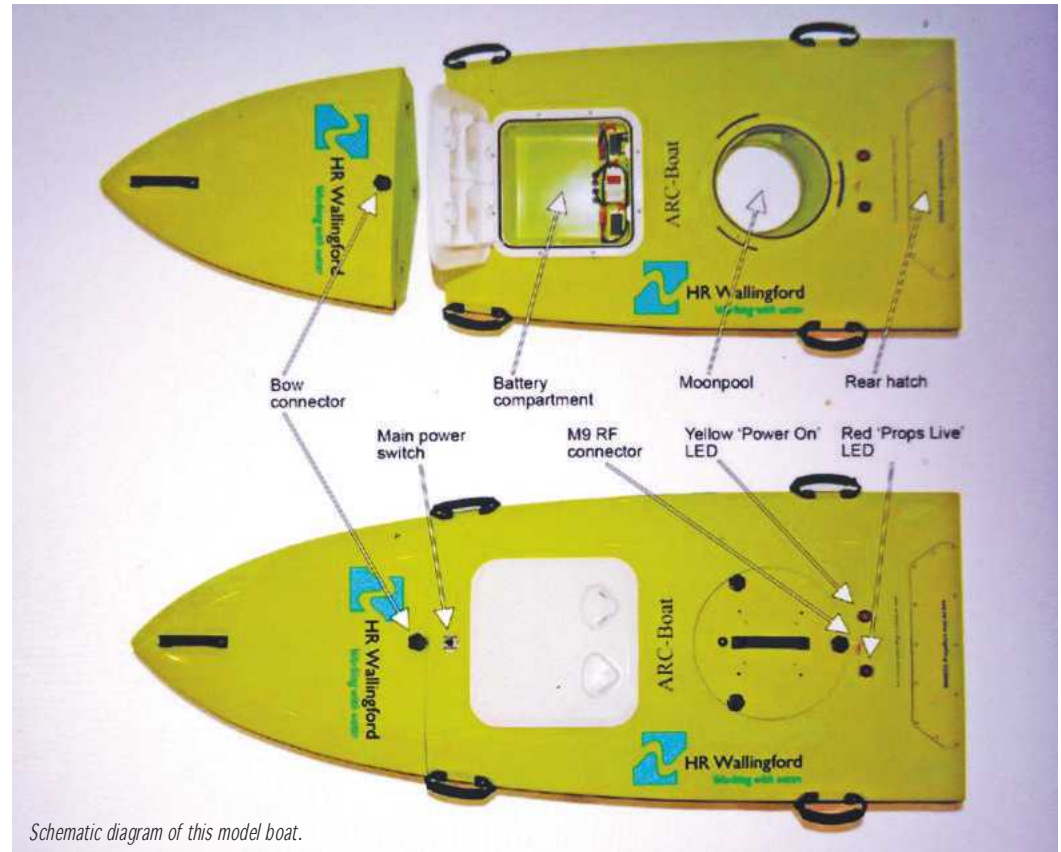
With a length of 1.95m and a beam of 0.72m, it has two

propshafts with a speed of up to 5 metres per second, and is controlled using the same technology as for our model boats. The r/c range is 200 metres and communication includes Bluetooth to an onshore computer. It is powered by four batteries, giving up to five hours running time. The hull has a removable bow section to make it easier to fit into a vehicle for transport. There is a circular hole

in the top of the main hull allowing any desired measuring unit to be fitted, depending on the survey work being done. The hull notably includes a telephone number to call if it all gets lost, something us model boaters' might consider to be a wise precaution!

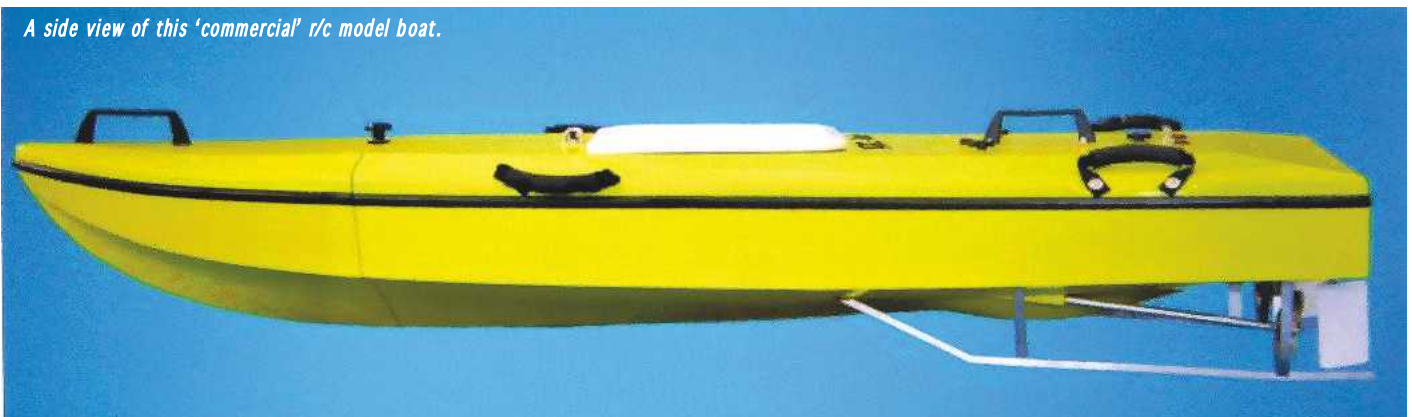
Thanks to Southampton University and HR Wallingford for the information given here.

Enjoy your hobby -
Anthony Addams



Schematic diagram of this model boat.

A side view of this 'commercial' r/c model boat.



PLASTIC MAGIC

1:144 scale HMCS Snowberry r/c conversion

Model Boats
July 2017
issue is on
sale on the
9th June
2016



Next month in **model Boats**

The July issue of Model Boats will include a Plastic Magic conversion of the 1:144 scale Revell HMCS Snowberry kit and a full construction article for Wild Duck, a new 22 inches long r/c single chine sloop sailing model, designed by Ray Wood.

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

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Wild Duck
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They had a top speed of 15 knots and cruised at 12 knots. Many were built for Canadian & European services.

Our model is based on archives builder's drawings and contemporary photo's of the Hartlepool lifeboat "RNLB THE SCOUT".

She entered service in 1977, after 20 years' service she was sold to the "ADES" the Uruguay service.

There was a class total of 22 Waveney's built for the RNLI.

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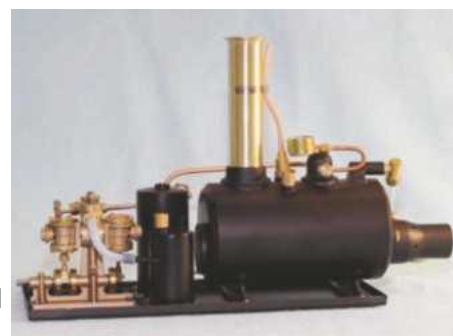
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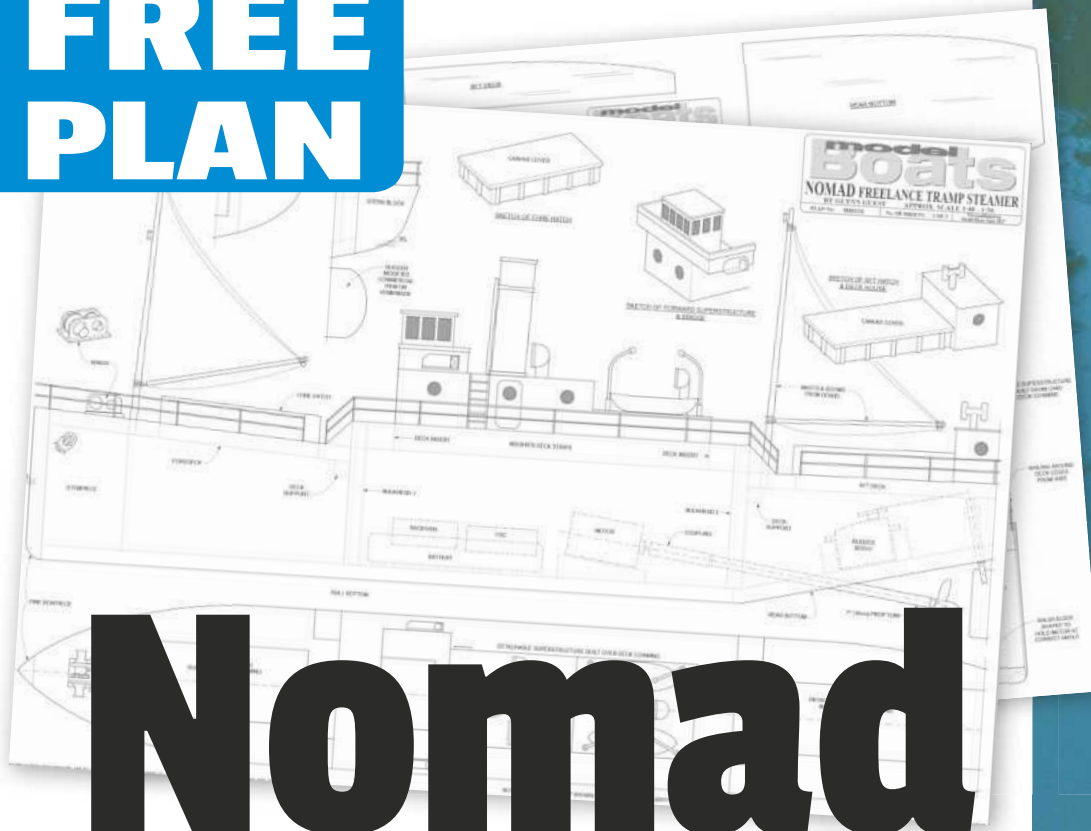
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FREE PLAN



Nomad

Glynn Guest presents a new semi-scale model based on a small tramp steamer

After building a couple of models which had to have a neat finish for realism, a change was called for. Something 'dirty' appealed, but dirty in an appropriate manner that matched the character of the model. A series of sketch designs led to the idea of a model based on a small tramp steamer, the aim being to suggest that after a long and arduous career, it was eking out its final days carrying cargo to the out of the way ports that major shipping lines would not serve. This gave me the chance to produce a not only weathered appearance, but also a very worn and battered look.

Having acquired quite a bit of spare timber from numerous domestic jobs, usually Pine, it seemed sensible to use them in this model. In fact, in the absence of a good nearby model shop your local DIY store can be a handy source of material when scratch building. With a little cunning during the design stage, such materials can be economically turned

into working radio controlled models.

Refining the design, it became clear that the model was going to be more of a 'caricature' than anything to which the term 'scale' in any form could be applied. It would still need to have an air of realism about it and working to a reasonably consistent scale would produce this. After some thought, a scale of between 1:40 and 1:50 appeared to work best. This was handy, as some spare 1:43 (O Gauge) model railroad figures were to hand and could be used as crew on the model.

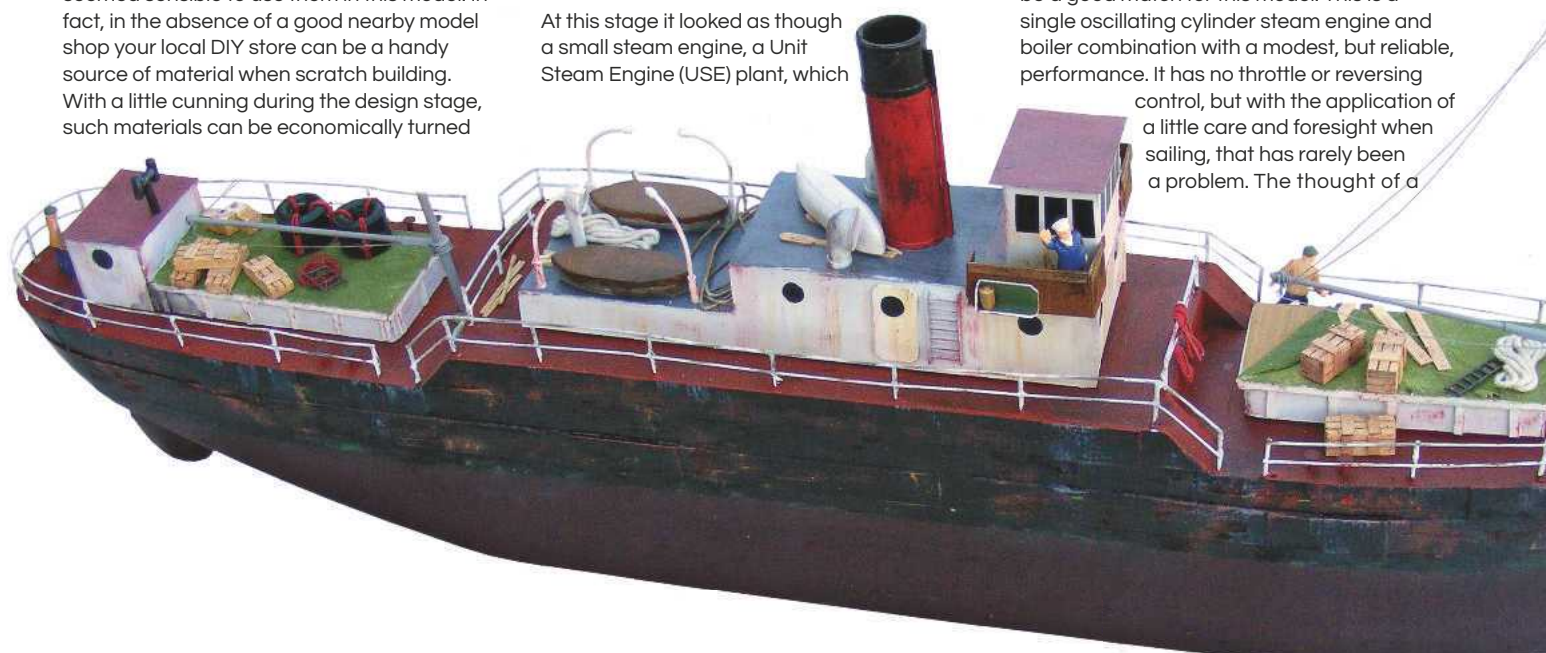
Misplaced optimism followed by a disaster.....

At this stage it looked as though a small steam engine, a Unit Steam Engine (USE) plant, which

Nomad

This semi-scale model is based on the small tramp steamers that might have been found plying their trade in remote out of the way ports in bygone times. Nomad is built to a scale of approximately 1:40 to 1:50 (1:43 is O Gauge scale) and hull construction is from timber and plywood giving the model a length of 34 inches (863mm), a beam of 5 inches (125mm) and a weight of 9.5 pounds (4.3kg). It is designed for r/c operation using either a small steam engine or an electric motor.

was laying idle under the work bench, would be a good match for this model. This is a single oscillating cylinder steam engine and boiler combination with a modest, but reliable, performance. It has no throttle or reversing control, but with the application of a little care and foresight when sailing, that has rarely been a problem. The thought of a





model chugging sedately around the lake whilst trailing real smoke from the funnel was hard to resist.

In view of the limited power of the Unit Steam Engine, a hull was designed to be only just big enough to accommodate it, and this gave it a beam of around 4 inches (100mm) which was a close match to some of the spare timber that was available.

A basic model was built to this design and when almost complete it was given a floatation and ballasting trial in the garden pond and yes, disaster! There is no other way to describe this, as the model had a woefully inadequate stability due to the weight of the steam plant and very careful internal ballasting failed to improve the situation unless the model was loaded down to way above the desired waterline. As an act of desperation, external ballast under the hull was

tried, but the stability was still marginal. Even replacing the steam plant with an electric motor and battery only produced a model with a worryingly slow recovery when heeled over.

There was nothing for it but to accept that I had cut it all too fine when combining the DIY store timber construction with a steam plant and a narrow beam. Still, I've often said that more can be learnt from failures than successes and in this case, the lesson was: 'Don't be mean with the beam'.

The original hull was scrapped and the design revised to incorporate, at least hopefully, a safer beam of approx. 5 inches (125mm), and by now you must have realised that it proved successful or you would not be reading this or perusing the accompanying Free Plan.

Materials

The model's basic structure was built using P.S.E (Planed Square Edged) Pine. It is worth spending some time to check that the wood

is not bent, twisted or warped in any way, and likewise, knots and irregular grain patterns are best avoided.

Lengths of 120 wide x 12mm thick, plus 21mm and 12mm square Pine were used in the prototype to make the basic hull structure. I'd be reluctant to use anything thicker than the 12mm planks as you do not want to raise the model's final Centre of Gravity any more than necessary.

The hull sides were covered with thin plywood, 1/16 inch (1.5mm) thick. Alternatives could be used, but this proved easy to form into the hull shape and more than strong enough.

Some scrap pieces of balsawood were laminated together to create the curved stern block, this being easy to shape and in my case, 100% free, as it was already in the 'Bits Box'.

All the wood to wood joints were made with a weatherproof woodworking glue, which has proven economical, strong and easy to use, provided the joints fit together well and you do not leave the model in a soggy state after a sailing session. Epoxy adhesive was used for the wood to metal joints



Tools

Not being constructed from the normal types of softer modelling materials, encouraged me to make use of my DIY domestic tools rather than those usually reserved for model building. These included a handheld jig saw, belt sander and drill, plus a wood plane. For holding the parts whilst working on them, the trusty portable workbench proved invaluable and it was also very handy when things had to be held together whilst the glue dried.

Come to think of it, a portable bench also allows us to enjoy working outdoors, weather permitting of course. This can be a boon, as the sawdust and wood shavings will stay outside the home rather than risking the ire of one's partner.

Personalisation?

Whilst the aim was to create the impression of a small scruffy old tramp steamer, there is no reason why you have to follow this path. You may prefer to just alter the painting scheme, as a white hull might be more fitting for a vessel in the tropics with, or without, a worn appearance. More drastic changes to

the model's profile are possible. It would be a simple matter to add a forecabin and poop to the hull, or alternatively for it to be all with a flush deck. The superstructure could be moved aft, possibly with a raised quarter deck. The only proviso would be to ensure that the sizes and shapes of the hull parts are modified to accommodate any such changes.

The parallel section of the hull amidships makes it easy to lengthen or even shorten the hull. A longer superstructure could be used to suggest a small cargo liner vessel serving minor ports that still needed a passenger service, so there are a number of permutations to all this.

If you do change things, then please try to maintain a consistent scale. Even if the model is not a true scale representation, nothing creates a silly 'toy-like' appearance more than inconsistent proportions in the hull, superstructure and its details.

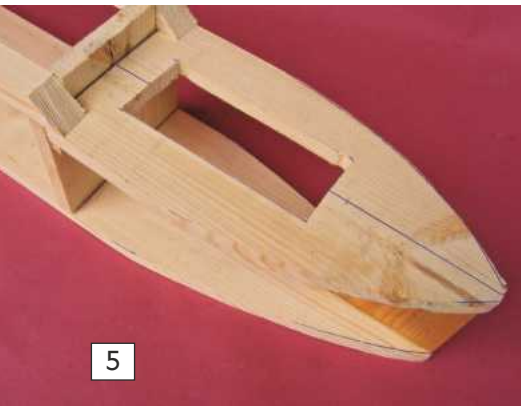
Hull construction

A kit of parts for the basic hull framework was cut from the Pine planks and strips, **Photo 1**. Holes in the second bulkhead, for wiring and the propshaft tube were drilled before going any further. To aid accuracy, a couple of card

half-templates were made for curved edges in the bows and stern areas, **Photo 2**. The next stage was to squarely glue the two bulkheads and stem piece to the hull bottom, **Photo 3**, and it was easier to glue the deck support strips across the bulkheads before fitting them to the hull bottom. Please note that the second bulkhead extends a little beyond the rear edge of the hull bottom as this creates a step and aids the fitting of the rear bottom piece.

The two square deck strips need to be glued into the notches in the bulkheads, **Photo 4**. They might seem to be something of an overkill, but they strengthen a potentially weak point in what will be a small, and perhaps weighty, model.

The fore deck should fit snugly into place on the first bulkhead. If not, then use some light sanding to enable it to slide in between the support and deck strips, after which it can be



5



7

glued to the bulkhead and stem piece, **Photo 5**. The two deck insert pieces were then glued to the bulkheads to fit between the deck strips and thus form a flush surface. The hull structure was finished off by gluing the aft deck, rear bottom and transom in place, **Photo 6** and some supports will probably be needed to keep these pieces in the correct position whilst the glue sets. The edges of the hull structure need to be checked to ensure that they have a nice smooth surface for the side sheeting to fit flush. Mine needed some sanding to achieve this, so the hull was clamped in the portable bench and a belt sander produced the desired result.

Tube time?

Holes for the propshaft and rudder tubes are needed in the rear bottom piece and a centreline drawn along this piece helps to locate them accurately. The hole for the rudder tube needs to be a snug fit, but a slightly oversized one for the propshaft tube is a good idea, **Photo 7**, as this will allow you to adjust the tube's position so that it accurately aligns with the motor's output shaft and more importantly, the propeller does not foul the hull bottom.

Photo 8 shows the Unit Steam Engine (USE) plant being placed in the hull whilst adjusting the propshaft for alignment, which is very important with the modest power available from these small steam engines.



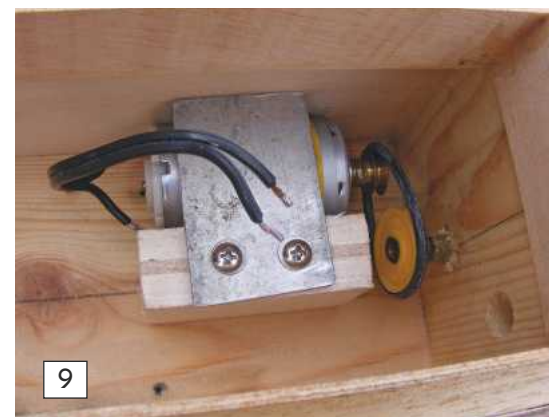
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If you opt for electric power, then the motor can be mounted to one side in the hull and connected to propshaft with a pulley and belt drive, and **Photo 9** illustrates how this was done in the first (aborted) model. Alternatively, the motor can be connected directly to the shaft and the plans show how this was done in the second (successful) model.

The propshaft tube was held in place with pieces of scrap wood packing the oversize holes in the bulkhead and hull bottom. When its position was satisfactory, epoxy adhesive was used to secure the tube and for packing (filling the gap!) it to the hull. The brass rudder tube just needed a smear of epoxy adhesive as it was pressed into its hole.



9



10



11

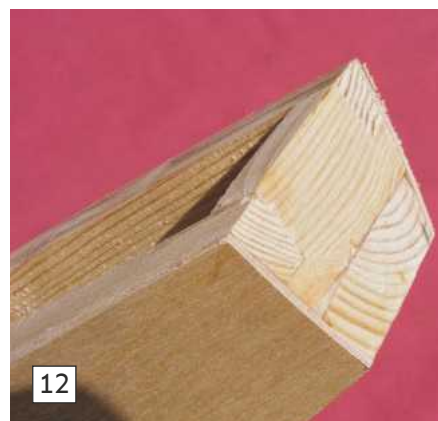
Hull sides

Both models had their sides covered with 1/16 inch (1.5mm) plywood, simply because a couple of sheets had been loitering in stock for a long time. Thicker plywood can be used, but it will be harder to bend to the hull's shape. An alternative material would be Liteply, or the thin sheets of 'plywood' that DIY stores sell. I try to avoid calling the latter 'plywood' as it is frequently of very poor quality, but with careful selection and finishing it can be used in our hobby. Something not recommended though is Hardboard. True, it is an excellent material for indoor domestic use, but on its first exposure to water it swells and rapidly loses strength. Unless you can guarantee a perfect job of sealing the Hardboard and never failing to check for damage (and immediately repairing any such damage), my opinion is to avoid using it in any working model boat. I'm sure that the ingenuity of readers will find other suitable sheet materials to cover the sides of their models, and if so then please do not keep it a secret and let the rest of us know about it.

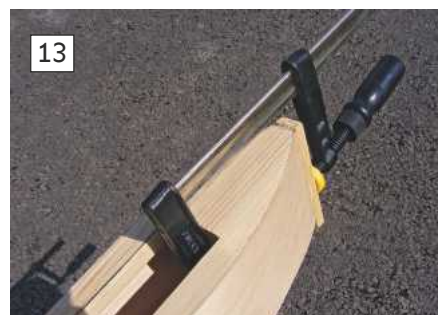
The side sheets were cut oversize and the first one glued to the hull structure between the two bulkheads. Some old batteries, no good for storing electrical energy but with useful weight and bulk, were used to hold these sheets down whilst the glue set, **Photo 10**. When fully cured, the hull was turned over and the process repeated.

The fore and aft sections of the hull sides could then be glued to hull structure. This entailed using the portable bench and my entire collection of clamps, plus a few hefty clips, to keep the sides firmly pressed to the hull structure, **Photo 11**. Once dry, the bulk of the excess material was trimmed away from the sides and sanded flush with the deck and hull bottom profiles.

The stern and bow shapes were made from laminations of scrap balsawood for the stern, and a strip of pine in the bows. The bow and stern faces were each sanded flat, first using the belt sander, **Photo 12** being of the stern, and then with clamps to hold the wood in place the bows reinforcement was fitted, **Photo 13**, and likewise for the stern, **Photo 14**.



12



13

These wood blocks were then carved and sanded to blend into the hull shape.

The final hull shaping was to run the belt sander along the corner of the hull where the side sheeting meets the hull bottom pieces. Not too much material was removed to avoid weakening the hull and please see the cross-section on the plans. This rounding-off creates the suggestion of a 'bilge curve' and might improve the hull's hydrodynamics a shade, but has probably more value by ensuring good paint adhesion. Paints have a hard time sticking to sharp corners, as the wooden windowsill on the back of my garage attests!

Pond trials

In view of the stability problems encountered with the first model, I wanted to check this one in the water as soon as possible. The hull was quickly waterproofed with three coats of clear cellulose dope, sanding between each. The rudder servo was fitted into the rear compartment, **Photo 15**, and its mounting is just two blocks of balsawood glued to the hull bottom with the servo unit secured between them with screws. A double wire linkage (closed loop) has been used to connect the servo and tiller arms.

Before refitting the USE plant into the model, the engine room between the bulkheads was lined with aluminium foil, discretely borrowed from Mrs. Guest's roll in the kitchen, **Photo 16**. Its use in other steam powered models, two with balsawood hulls no less, has proved it will act as an adequate barrier to water, oil and heat. It can however be troublesome to avoid tearing the foil when fitting it into the hull, so be prepared to remake it a few times.



With a full boiler and ballasted down to the desired waterline, the new hull proved to have adequate stability on the garden pond and steam was raised and the little single cylinder oscillating engine produced a healthy flow of water from the propeller, so it was all looking good. The internal ballast was from lead sheet and strips placed on the hull bottom and secured in place and this gave the model positive stability even when heeled over with the edge of the deck at water level. Some extra weights were placed on the deck to simulate the mass of the superstructure, hatches and details yet to be added. This reduced the 'stiffness' of the hull a little, as shown by a slower return to the upright position, but without any suggestion of instability.

Confession time.....

Having proved that the new beamier hull could cope with the installation of a small steam plant I ought to have just carried on and completed the model, but I have to confess that I was becoming less enamored with this whole 'steam business' at this stage of the project.

The design, construction and operation of previous steam powered models has given

great pleasure, certainly more than similar electric powered models could have done, and there is no denying that steam can add 'atmosphere' to a working model. However, it comes at the cost of significantly more effort with preparation before you leave for any sailing session and more work at the pondside before the model actually enters the water, plus sailing with a small steam plant means you have to continually keep track of time to avoid running out of fuel, or worse still the boiler running dry. Then there is the worry about these simple engines stalling since they are not self-starting, which can be a serious problem in the leaf, weed and general debris strewn waters which I often have to sail upon. So, with some regret, this model was completed for this article with an electric motor for propulsion, but as you will have seen in the earlier photos, a small steam plant can be installed – the choice is yours.

Hull sides with wear and tear

To improve the model's appearance, if that was indeed possible, the sides of the hull above the waterline had steel plated construction which has been suggested by gluing card 'plates' to it. Having done a reasonably neat job of simulating the 'In and Out' effect with card, it

was now time to create the desired battered and well-worn appearance that was one of the features of this project.

Extra card plates were added to show where some repairs had been carried out. The hull was then attacked with suitable tools to suggest the inevitable scrapes and gashes that any hardworking vessel might accumulate, **Photo 17**, and I will admit that the assault included the use of a small hand held rotary grinding tool to create the more serious damage. The hull certainly began to look, as they say in the antiques business, 'distressed', and there were fears that it might have been all 'a bit over the top', but it was too late to do anything about it now.

The card surfaces were then sealed with clear cellulose dope. It is a shade smelly and has to be used outdoors or at least in a very well ventilated room. Dope penetrates very well into card, dries quickly and a couple of coats, with a light sanding between them, usually seals the card surface. Another reason for using dope was that it would bond well with the previous coats used to waterproof the hull prior to the water testing. There are though, alternative sealants to use on card and wood surfaces as your personal preference, experience and availability may dictate.



18

Superstructure, hatches and hull painting

These were built to fit snugly over coamings added around the inside edges of the access openings into the hull. As the tramp steamer was now being completed with electric power, extensive use of cardboard, of about 1mm thickness, was used for these items. The plans show what was built for the prototype model, but as it is very much in a Freelance Style, you can alter, add or adjust components to suit your taste. I would however caution to avoid adding excessive top weight. Remember, the removable superstructure and hatches are there just to make the model look better and keep water out, so substantial 'bomb-proof' construction of these parts is not needed. To create the impression of canvas hatch covers, some sheets of tissue were borrowed from Mrs. Guest's kitchen roll and stuck in place, but not too neatly so as to allow creases and wrinkles to form. They were later painted matt green, two coats being needed due to the material's absorbency, but the

texture was still visible, **Photo 18**.

If you are using a steam engine to power your model, then it would be better to use thin plywood for the superstructure and its coaming, and then cover the internal surfaces with a protective layer of aluminium foil as already mentioned. In that case, the funnel ought to be made from something like thin walled aluminium tube as hot gases will be travelling up it. Thick walled copper or steel tubes will result in stability problems and in any case, are not needed. Also, some ventilation holes will be essential to ensure a good air supply to the boiler.

Painting, at least for the hull, proceeded as the superstructure units were being made, and is another area where you can do your own thing since it is a freelance model, the only proviso being to keep it all reasonably realistic, which in this example was drab, and very drab at that. After covering the three internal access deck cutouts, the decks were sprayed with a can of red oxide primer and the hull sides painted black down to

the waterline. The undersides of the hull, being a dark red, were actually created by mixing two tins of red and black gloss paint together. The use of gloss paint on the hull might seem odd, but it is much tougher than matt and resists the odd bump and scratch much better. Anyway, the whole model was going to receive a final light overall 'dusting' application of clear satin varnish to harmonise the finish and colours.

The vertical surfaces of the superstructure and hatches were sprayed with white primer. For the other horizontal surfaces, convenient colours were used from my collection of Humbrol and Revell tinlets, something I guess most of us possess and as for the funnel, red with a black top was the rather unimaginative choice.

Railings and other fittings

Adding railings around the deck edges can be something of a chore with any model. It was tempting to extend the card hull side plating above deck level to create solid bulwarks, but railings seemed more appropriate. Copper wire was used on the prototype to make the vertical and horizontal parts of the railings. This was sourced from some spare domestic electrical cable which contained solid copper wire about 1 to 2mm in diameter. This wire is ideal for the job, it being easy to straighten, cut and join by soldering. It also has little 'spring-back' thus making it simple to form (and reform) into shape.

The uprights were cut to length then epoxied into holes drilled around the edge of the deck, care being taken to drill these holes vertically and not too near the actual edge with the horizontal rails soldered to the uprights. Three rails might be more realistic, but two are enough for appearance's sake, the rails around the bows, **Photo 19**, and stern, **Photo 20**, having been pre-bent to the desired shape beforehand. Ideally, they should be painted off the model, the uprights being glued into the deck afterwards, but that is not always practical.



19



20

“Nomad still looked inappropriately clean in some parts, so more dirt, grime, stains and rust were added.”



Remaining details

Dowel was used for the masts and booms. The masts are removable as this helps avoid possible damage during transit to, and from, the lake and they are snugly stepped into holes drilled in the decks, **Photo 21**. They would not look right without any rigging, so a search for something appropriate started. In the past, sheering elastic has been used for rigging, but this has to be fixed under tension and the result is a taut appearance which might suit some vessels, but did not seem appropriate for the 'barely cared for' image being attempted. So some wire was used, to allow the rigging to drape in what was hoped would be a mournful fashion and that can be seen in this last picture. This is a technique used by those who create those wonderful dioramas we sometimes see, as there is no reason why a model's rope rigging actually has to be of cord.

A steam winch was found in the spares box and added to the fore deck. Upon reflection it looks just a shade too large, but if anyone questions it? Well, it is modeller's licence and artistic flair. The lifeboats have been carved from blocks of balsa wood, and perhaps one day I might make an open lifeboat, but until then they will have canvas covers. Some items of cargo and deck clutter were

added to the model. Once again, the habit of keeping odd unwanted items in a spares box on the grounds that they are bound to come in useful, paid dividends with Nomad. Crates, tyres and even a spare propeller add to the model's atmosphere, plus a few ropes lying around helped and now the model was almost finished.

The hardest items to include, as is often the case, proved to be the crew. These were some O-Gauge model railway figures that are 1:43 scale. The captain, who was a stationmaster in a previous life was easy, as one of the bridge wings was his obvious position, **Photo 22**. After some experimenting, two crew were placed at the steam winch in the bows to suggest they were getting ready to use it (please see Photo 19 again). Another figure, who might have been a bricklayer, was converted into a crewman apparently repairing, or maybe even painting, a section of the foredeck railings. The final member of the crew, perhaps the only one who cares about the appearance of his ship, is sweeping the deck at the stern.

Please note that all the crew have been placed in situations where you could accept them being more or less stationary for at least a few seconds. I have seen models where the crew have been frozen in some hectic action and perhaps forever caught in mid-stride.

This might be okay on a static model, but can spoil the air of realism expected on a working model.

Dirty time?

Nomad still looked inappropriately clean in some parts, so more dirt, grime, stains and rust were added. Much has been written on the subject of making models look like they have had a hard working life and people in the areas of railroad and plastic kits have really mastered these techniques. If you are unsure or inexperienced in the art of 'weathering', then I suggest you perform a little research first and have a look at what can be achieved on 'plastic' models and have a good read of magazines such as *Military Modelling* and the *Tamiya* publication as examples.

However, for Nomad the 'dry brush method' was used extensively to suggest rust and the staining it produces. One tip is to go over the barely dried rust paint with a brush lightly dampened with paint thinners as this can produce the staining effect quite nicely, but remember to brush downwards as that is the direction water usually flows.

Our paintbrush cleaning regime can also supply an effective weathering material as after wiping the excess paint from a brush, it can be dipped in the dirty jar of brush cleaning fluid (usually white spirit) to remove the bulk of the paint left on the bristles. When suitably lightly dried, this soiled brush can then be used for weathering or as a wash to suggest the grime, dirt and staining you might expect to see on a hard worked vessel. Another tip is to apply the wash in a series of thin coats. At first, little effect might be seen, but gradually it will build up, although you ought to stop before it becomes too obvious. Rarely does rust, grime and dirt appear in neatly bounded areas as it likes to spread, given half a chance.

Normally, I have a 'dirty' and 'clean' jar, used in that order to clean brushes, the clean jar becoming dirty in due course and then becoming the 'dirty jar' to avoid wasting the thinners.



Motive power

Nomad had been designed to use a large propeller that was a good match with the slow-turning steam engine as originally planned. Using a faster turning electric motor would have meant replacing this propeller with a smaller diameter and/or finer pitch type, unless a very high speed tramp steamer model was required?

To keep the large propeller (Robbe plastic three blade 50mm diameter with a diameter and pitch ratio of 0.85) would most likely mean using some sort of speed reduction via pulleys or gears. However, one of those lightbulb inspiration moments occurred when I recalled buying a potentially suitable motor from MFA. This was their RE 540 LN (Item No. 719) which at first looks just like a standard 500 type of motor. Previous testing of this motor on a 6v supply had revealed its free running speed of around 2800 rpm and 0.24 Amp consumption. The stall current was found to be an equally modest 4 Amps, all of which boded well for its installation in Nomad. A quick trial on the garden pond produced a vigorous propwash despite it drawing less than 1 Amp. One point about this motor is that it features a very short output shaft (5.5mm) so care will be needed ensuring the coupling is secure. Alternative motors could be the RE 360 or 385 types with either direct drive to a smaller propeller or

alternatively a gear, or even a belt and pulley system, if a large propeller is to be used. The final internal layout is with the motor sitting on a balsa wedge which places the motor and propeller shafts in line. The motor is held down with an aluminium strap screwed to the wedge. A six cell drive battery was placed ahead of the motor and to one side of the hull. This battery was secured with a block of foam plastic, cut to be a snug fit, which also has two cutouts to hold the receiver and electronic speed controller, **Photo 23**.

A final ballasting session resulted in an all up weight of 9.5 pounds (4.3kg), which seemed quite a substantial mass for such a relatively small model. Considering the modest power loading of well under 1 Watt per pound (0.5 W/kg), a sedate performance could be reasonably expected.

Maiden voyage

The weather co-operated and Nomad underwent its first sailing run on a bright day with only a light wind blowing across the water. I was reminded of its not insignificant weight as the model was lowered into the water where it seemed to sit in a very firm and stately fashion. After the usual cautious check of the transmitter functions, having been caught out too many times when full ahead

resulted in the stern of a new model impacting with something hard and unforgiving(!), the model was slowly sailed into the middle of the water, **Photos 24 and 25**.

The rudder response was found to be good at all speeds. Nomad would hold a heading quite well at top speed, maybe wandering slightly at lower speeds, but very easy to correct. The top speed surprised me a little, being about 2.5 feet/second (0.75 metre/second) which at the scale of this model equates to the full size speed of around 10 Knots. Sailing at something like 50% throttle seemed therefore to be a shade more realistic.

The turning circle, as always, depends upon a model's speed to some extent. Nomad could turn within a circle of 6 to 8 feet (1.8 to 2.1 metres) which proved handy when attempting to manoeuvre between obstacles in the water. It was also pleasing to find that the model could be steered when moving astern. Any lingering worries about the model's stability were laid to rest as it displayed an easy but safe rolling motion. In fact, at times it would look very realistic with a sedate movement as would befit an elderly, but not quite worn-out vessel.

Conclusion

Building this model has taught me a few things, which is always good even if it doesn't feel like it at the time. Perhaps the most important lesson is to be aware of weights when building with 'lumber', i.e. relatively heavy wood, and playing safe with a model's beam is no bad thing. As regards steam power, it will work in a small model such as this, but something a little larger and with better access will make life much easier. The MFA motor proved to be an excellent choice. In Nomad, it performs in an effortless fashion and as it is rated for 6 to 12v operation it appears to have scope for also powering larger models with direct drive to the propeller.

The word 'comfortable' perhaps best describes Nomad's sailing qualities, as with a little practice you know where this model is going to go and it's not easily deflected off-course. So, if you fancy a model with character, one you can lavish some artistic flair upon and have relaxing sailing sessions, this might be the one for you?

Enjoy your hobby - Glynn



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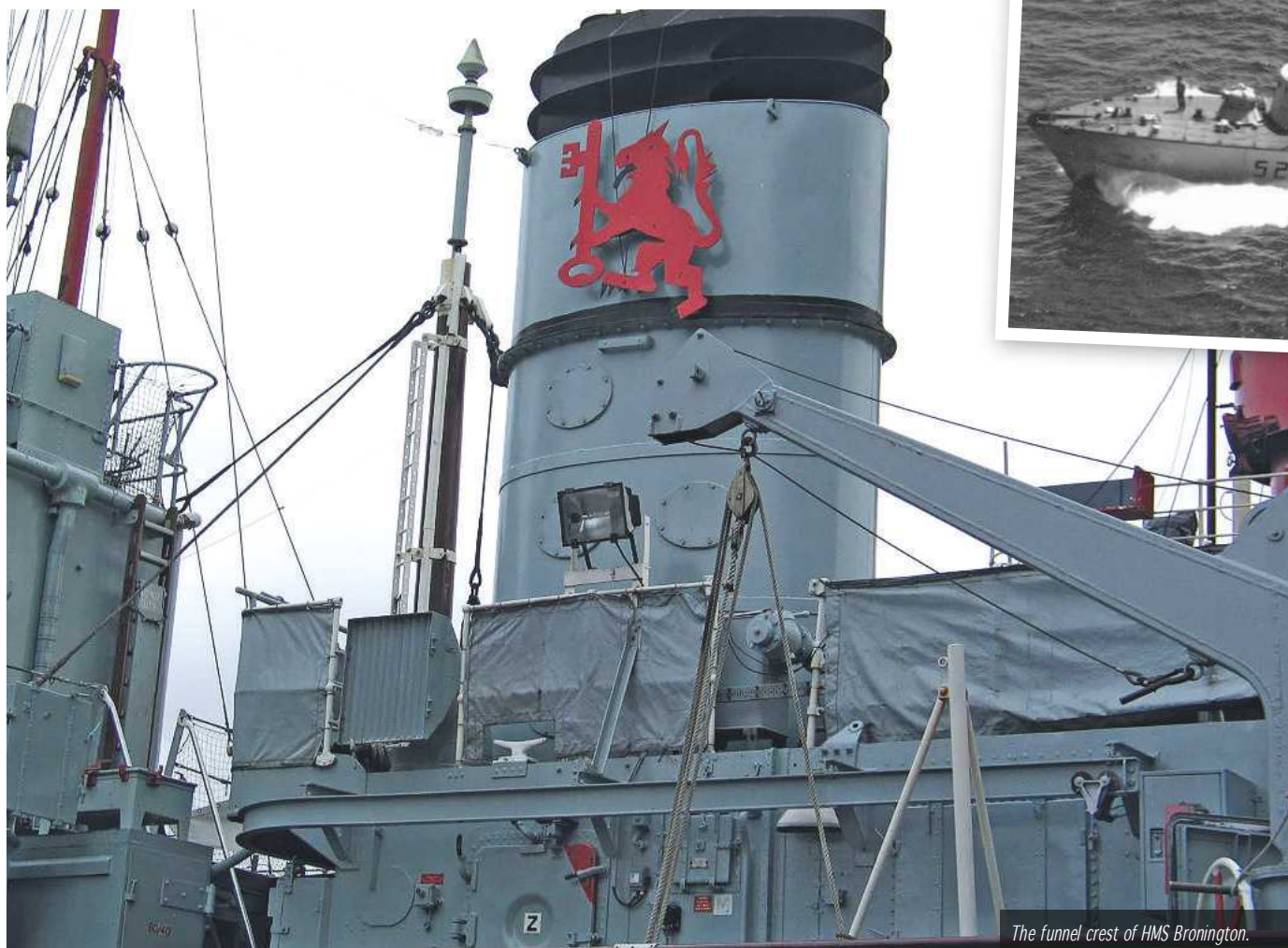
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The funnel crest of HMS Bronington.

Range Finder



Dave Wooley with his Worldwide Review of Warships and Warship Modelling

Photo 1. The captain's seat on the port side of the bridge of HMS Bronington.

Welcome once again to our regular sortie into the world of fighting ships and this month sees Part Two of our Photo Tour of the Ton Class mine hunter HMS Bronington and we continue with Part Four of our short mini-series about the construction of an OSA Class Fast Missile Boat.

HMS Bronington M1115 – Part Two

As a reminder, we concluded Part One of our tour of HMS Bronington on the bridge wings. This month's issue commences with a view within the bridge showing the captain's chair over to port, compass repeater and voice pipes amidships, **Photo 1**, whilst to





ABOVE: An OSA 2 205U boat with its AK 230 30mm guns mounted fore and aft.



Photo 2. The arrangements on the starboard side of the bridge.

Photo 3. The main compass.

Photo 4. Within the chart room was a standard JUC navigation radar display.

Photo 5. A general picture of the bridge and all the areas discussed thus far.

Photo 6. The canvas covered flag locker is on the port side of the chart room.

starboard there are the port and starboard propshaft speed controls, **Photo 2**. Also in the bridge is a magnetic compass, **Photo 3**, and immediately aft of the bridge is the small chart room (sometimes called chart house), seen here in **Photo 4** with a JUC display for the navigation radar. **Photo 5** is a good external picture of the bridge unit looking from the port side, upwards and from aft, showing the Type 1006 navigation radar on top of it and the chart room behind the wheelhouse.

As seen in the previous picture, the flag locker is on the port side of the chart room, **Photo 6**, and moving to the rear of this structure are the signal halyard cleats, **Photo 7**. Remaining





Photo 7. The after facing windows of the chart room and the signal halyard cleats.

Photo 8. The arrangement immediately aft of the chart room (which can also be seen in Photo 5).

Photo 9. The Port emergency lifebelt chute is adjacent to the bridge wing.

Photo 10. The lower part of the foremast.

Photo 11. The base of the foremast viewed from the starboard side, looking aft.

Photo 12. The rear of the foremast viewed upwards from the starboard side.



in the same position, but turning through 180 degrees we now have a view of a vented locker, **Photo 8**, and I am sorry I don't know its function. Clearly visible on the port (and starboard) bridge wing is the standard chute for launching an emergency lifebelt ring, **Photo 9**. The next picture, **Photo 10**, is a general view looking up at the mast and it provides some further detail relating to the foremast and the navigation lights on its lower yard.

A closer view of the lower portion of the foremast, but looking aft at it from the starboard side, can be seen in **Photo 11**. A close-up picture of the mast and its lower yard is helpful as it reveals the construction of it all and how the halyards are attached, **Photo 12**.

Moving over to starboard, behind the bridge and looking aft alongside the funnel, in **Photo 13** we can see a timber slatted area (decking) which at one time supported a small Gemini inflatable boat. In **Photo 14**, the timber post in the foreground was the upright for the lifting boom of the hoisting derrick for this boat.

Dropping down to the main deck, in **Photo 15** we have a detailed view of the area immediately beneath this wooden slatted area on the starboard side. It's worth noting the type of watertight doors fitted and remaining in the same location, but turning 180 degrees we have a different view, but now looking aft towards the steel one ton lifting davit, **Photo 16** and please note the riveted lockers and their security clips. Looking more towards the adjacent bulwark now in **Photo 17**, we can see the amidships gangway access opening, a loudspeaker, the metal protection over the deck and numerous ropes stored inside the side upstand and note also the polished wooden capping rail, something you don't see on modern 21st Century warships. Rather handily, we know we are on the starboard side, because the control wheel for the one ton lifting davit has its centre painted green!

Our final picture for this June issue is an aerial view on the port side looking at its 1 ton davit, again rather conveniently having its control wheel painted red in its centre, **Photo 18**.

The Ton Class were largely built of wood

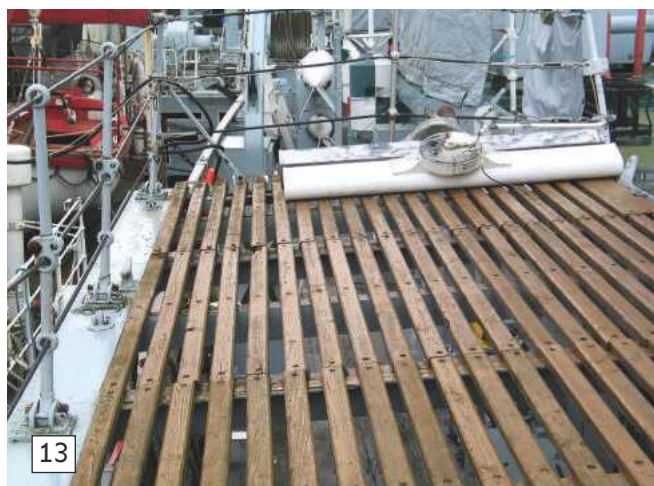


Photo 13. The slatted wooden platform over to starboard on which a Gemini inflatable was secured.

Photo 14. A general view of the area surrounding the starboard slatted wooden platform.

Photo 15. The area on the main deck directly beneath the slatted platform.

Photo 16. The area directly below the slatted platform looking aft towards the starboard 1 ton capacity davit.

Photo 17. The inside of a bulwark is never an empty space and please note its polished wood capping rail.

Photo 18. A view looking down on the port side and the 1 ton davit's working area.



in smaller shipyards around the UK and their planked decks are something not seen nowadays on modern warships. HMS Wilton, built later to the same design and using engines from a scrapped minesweeper, was the first minor warship to be built of GRP and enabled the necessary skills to be developed to build the more recent Royal Navy Sandown and Hunt Class vessels to be constructed using the same material. Currently, the remaining Hunt Class warships are undergoing service life extension programs, including new engines, to enable them to remain in service for some years to come.

In the next issue, we will complete out Photo Tour of HMS Bronington.



OSA 2 Type 205U Fast Missile Boat Model **PART 4**

AK 230 Guns.

In the first part of this mini-series in the March 2017 issue of MB, several pictures were shown of the 30mm gun system mounted aboard these OSA fast missile boats. Basically the AK 230 as it is known, is an automatic, fully enclosed, stabilised, liquid cooled and power driven Close in Weapon System (CIWS) that was first developed in the late-1950's for the Soviet Navy. The effective range was quoted as approximately 4000 metres with a rate of fire of 1050 rounds per minute. There is no reliable information as to how effective this early CIWS actually was, but it was superseded in the 1970's by the more familiar AK 630 weapon, a Gatling type of multi barrel CIWS. Anyway, as mentioned previously, the OSA 1 & 2's had two such AK 230 mountings, fore and aft, **Photo 19**.

Constructing the AK 230

The gun mounting

Albeit having experience of producing in smaller scales a number of the more modern AK 630 guns, this did not prepare me for the constructional approach to a 1:35 scale AK 230 and essentially there were several choices, including:

1. To construct both the basic mountings and the turrets all from timber.

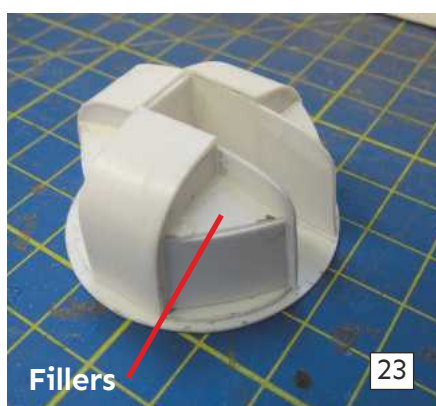
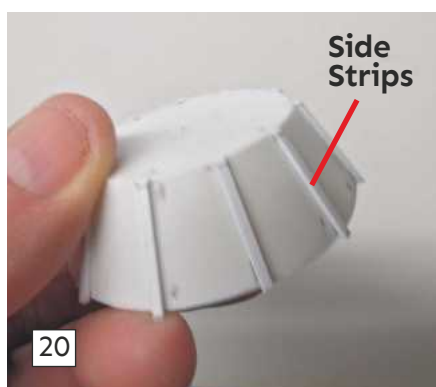
2. Build both guns from styrene.

With either method, the mounting and basic turret could then be cast in polyurethane resin from such a master and its mould, but the latter method was chosen as I had in mind a method of construction that would create all the complex shapes from styrene

and filler without spending too much time preparing a timber surface for its final finish and subsequent painting.

The first task was to create the actual deck mounting using 1mm styrene sheet. A circular base and the top were formed with six internal ribs added to the base which provided both the height and angle of slope of the sides. 1mm styrene was formed round half the sloping side and marked top and bottom to give the desired curved shape and this was repeated for the other half. The end result was a good fitting sloping surround with only two joints. These joints were eventually covered by two of the 11 evenly spaced 1.5 mm styrene section side strips as in **Photo 20**.

The next step was to make the 42mm top disc on to which would fit the revolving



turret and a circular 60mm base piece on to which will sit the previously made sloped basic mounting unit as in **Photo 21**. Using a compass cutter, these discs were cut to fit to the outer edge of the side strips.

The turret

Attention could now shift to this and as mentioned earlier, I made the decision to construct the basic turret from styrene and to ease identification I have lettered each of the basic parts in **Photo 22**.

Here, Part A is the base piece for the turret itself and on which the barrel trunnions will fit. The desired shape was copied from the drawing and cut to shape as Parts B and D, which will fit either side of the trunnion opening. The two sets of Parts C and E are to fit against Parts B and D to complete the basic rounded shape, with Part F being the rear of the trunnion opening, and Part G is an internal support.

To achieve the overall 'half-ball' appearance of the turret, it was made to have four corner segments which would each be filled with Isopon P38 filler, all sanded to a nice shape. To reduce the amount of filler required, parts of each of these sections were reduced in depth by adding small angular strips of styrene roughly cut to shape as in **Photos 23 and 24**. Then, after a few minutes of mixing the Isopon P38 and filling these corner sections, plus several minutes of setting time, sanding could commence. Isopon P38 is a relatively easy filler to work with and the basic external shape of the turret was then actually created in about 10 minutes, **Photo 25**.

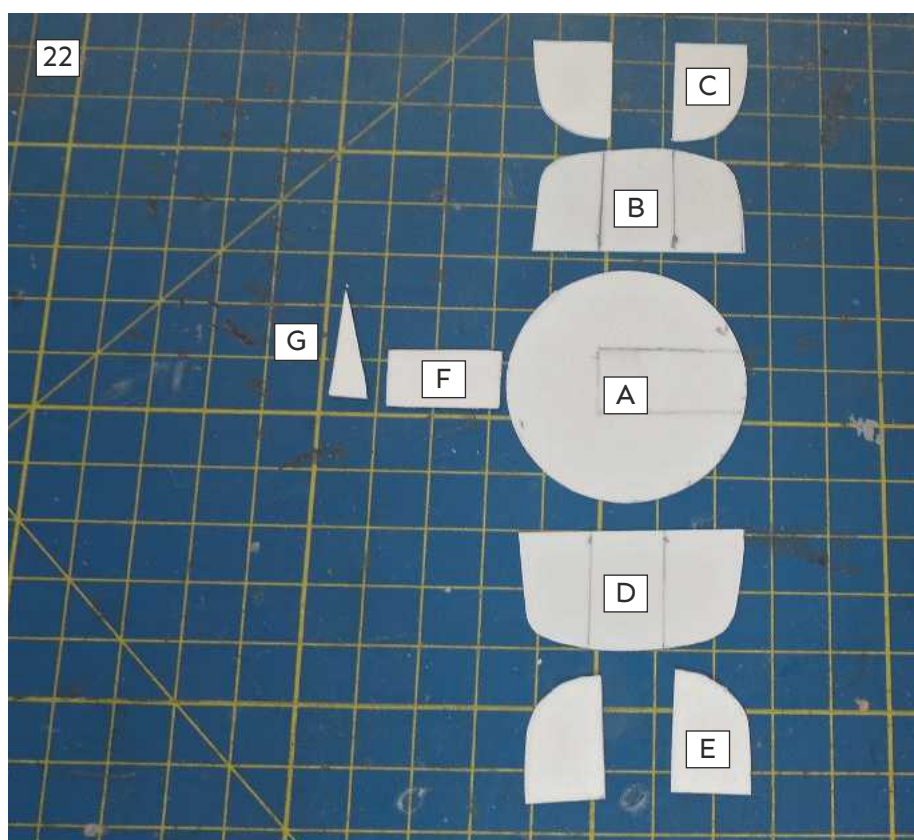
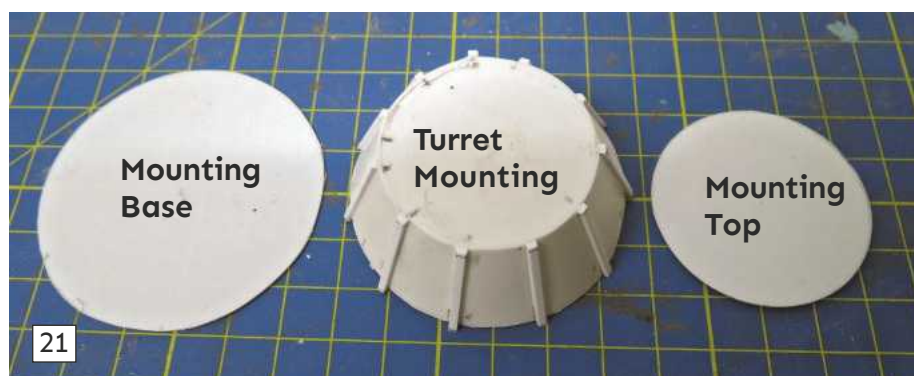


Photo 19. A typical AK 230 CWS.

Photo 20. The 1:35 scale AK 230 base unit.

Photo 21. The turret mounting together with its base and top pieces, both having a diameter that matches the top and bottom of this unit.

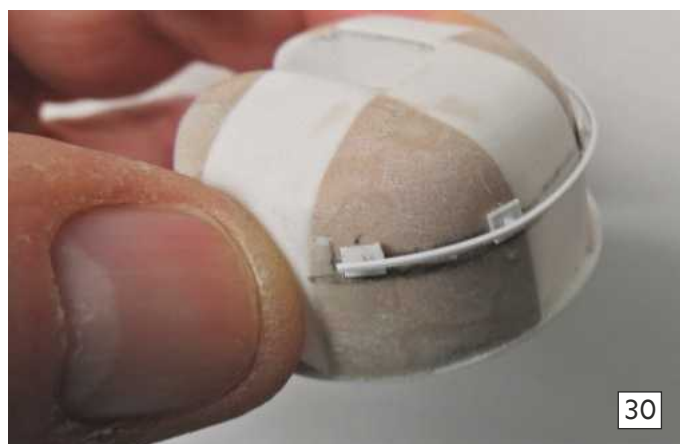
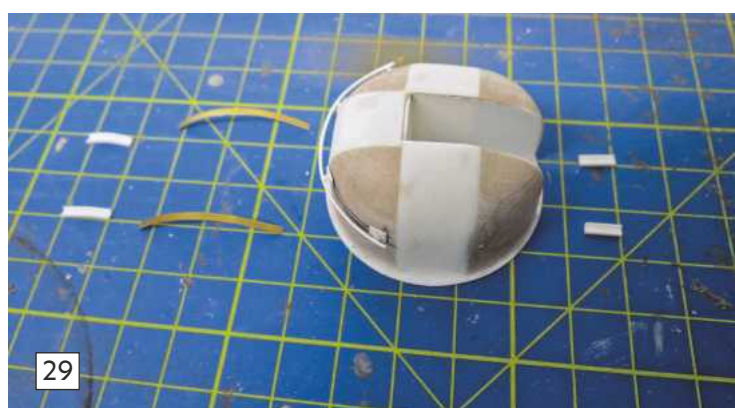
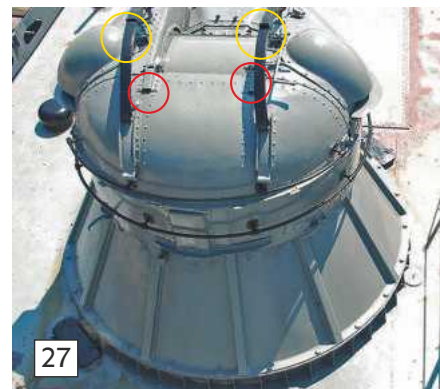
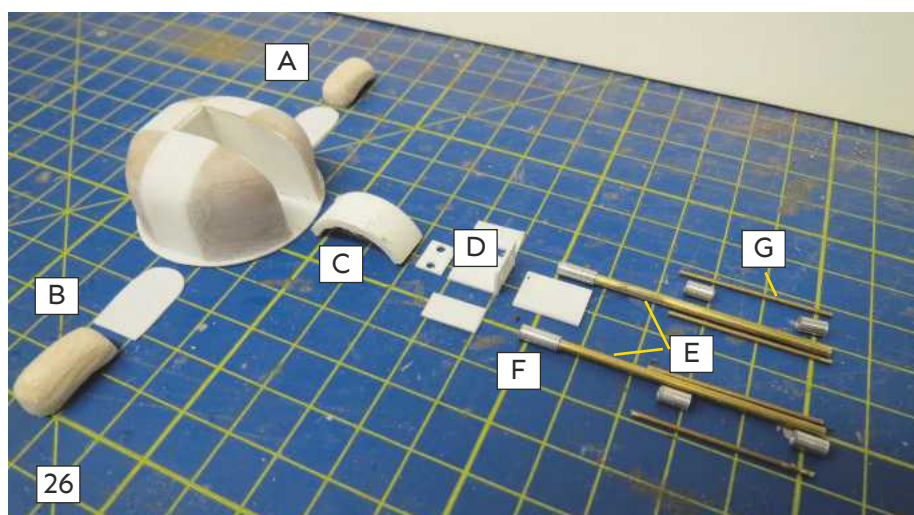
Photo 22. The parts that will form the basic turret unit.

Photo 23. Creating the external and internal shapes of the turret, with styrene 'filler' pieces helps reduce the amount of filler required on the four corners.

Photo 24. Another view of a turret showing the styrene filler pieces in the corners. These reduce the amount of filler required.

Photo 25. Filler has now been applied, allowed to set and then sanded to achieve the desired shape.





Part

- A.** Left hand vent & Seating
- B.** Right hand vent & seating
- C.** Trunnion
- D.** Barrel support
- E.** Two gun barrels
- F.** Barrel rings
- G.** Water cooling pipes

Material

- Balsa & 0.5mm styrene
- Balsa & 0.5mm styrene
- 24mm o.d. plastic tube
- 1mm styrene in six parts
- 2mm o.d. brass tube
- 3mm o.d. aluminium tube
- 1mm tube (or rod)

Photo 26. Preparing more of the turret fittings - please see text for more information.

Photo 27. Reviewing the detail on the top of the turret, including its springs and clips.

Photo 28. A side view showing how the rear of the turret top can be lifted for access.

Photo 29. Creating the springs and U-shape retainers.

Photo 30. The upper handrail has now been added.

With the turret now ready, the next stage involved making its various external fittings, starting with the two side vents and please now refer to **Photo 26** which should help in identifying each of these parts.

It would not be difficult to arrange for elevating gun barrels, but on this model, the gun mounting is permanently fixed in the trunnion. Prior to final assembly I would like to show the remainder of the fittings that will be attached to the turret and to make it easy to identify the parts, and their purpose, two photos of an actual AK 230 turret are included here. **Photo 27** clearly shows the rear section of the turret which can be lifted upwards for access. This opening function is assisted by two curved springs mounted on the turret top,

ringed in yellow, with two hinges immediately beneath each curved spring, ringed in red.

In **Photo 28** the movable rear part of the turret casing can be clearly seen with the curved spring and the side vent in the centre of the picture. Unlike the more modern AK 630 CIWS, the AK 230 was constructed in metal, fabricated in sections, and then riveted together. Our penultimate picture for this month, **Photo 29**, views the turret with the springs and their U-shaped seating. Also in place is the upper handrail, with this rail formed from Evergreen No. 121 0.75mm styrene strip, **Photo 30**.

Next month we will discuss the final assembly of the turrets (remember that there are two!) and move on to the foremast detail work.

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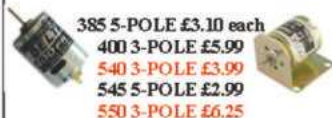
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Mooring Post



Ron Rees with a useful suggestion

Cowl Vents

Modellers who build from scratch acquire an ability to see a model boat part in another unrelated and often binned(!), item. This is part of the fun and a talking point at shows and to be able to re-use, recycle or reshape obscure products can save us a lot of time and money and to this end it is a good idea to look at bits and pieces twice. One place worth browsing around is a fishing tackle shop. They have thousands of bits that can be useful in our hobby and are often cheaper than the equivalent dedicated model part.

I recently needed to make eight 13mm

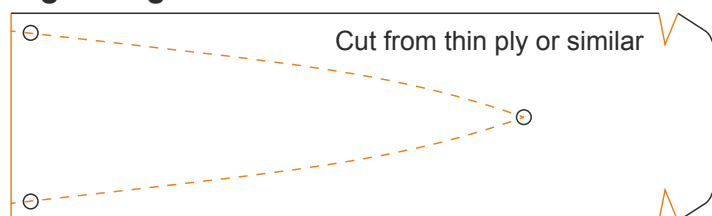
Above: A cut-up folding hollow plastic ball holding a ball bearing was used as the pattern for a cowl vent. At 99p for 10, this was a bargain. The complete pattern is at the bottom of the picture and resin castings from a mould made using the pattern are in the middle.

cowl vents for a model and discovered a sort of folding plastic ball with a ball-bearing inside, designed I believe to lock over a fishing line and then rattle. There were 10 of them in the bag and all for 99p, but only one was needed to make a pattern. Trimming off the excess and adding a length of plastic tubing made for a perfect cowl vent pattern for a silicone rubber mould and now dozens have been cast from it, and there are still nine left

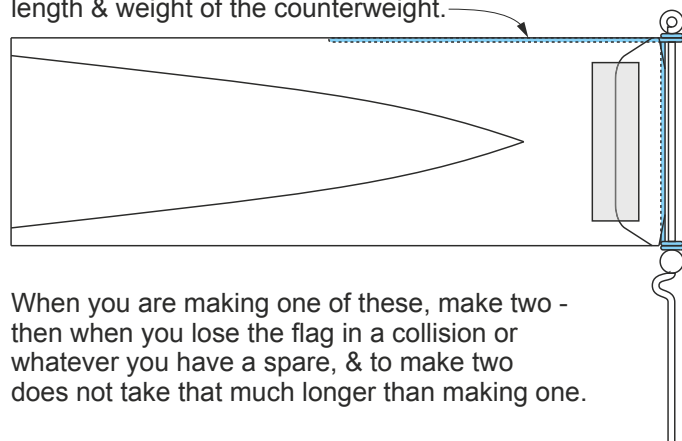
in the bag.

Other easy conversions include a pair of Pom-Pom guns made from those cheap fluted jeweller's screwdriver bodies; air-scoops for a Fairey Swordsman made from Calpol plastic spoons (Calpol is a brand of paediatric paracetamol suspension); oval window frames from electric conduit pipe and portholes from eyelets of various sizes filled with clear epoxy glue.

Lightweight Wind Indicator For Model Yachts



This length of 0.5mm wire needs to be just more than half the length of the flag, depending on the stiffness of the plastic sheet. The shorter the better, as this minimises the length & weight of the counterweight.



When you are making one of these, make two - then when you lose the flag in a collision or whatever you have a spare, & to make two does not take that much longer than making one.

Pattern for cutting lightweight colourful polythene or other plastic sheet. Fold sheet & use fold as the top edge & cut other edges with a hot soldering iron, except where indicated in orange. These should be cut with scissors or a sharp knife. Through the holes shown, mark dots & then cut out the vee shape on one side of the flag, as shown dotted.

Assembly of parts - flag cut out as above. PVC tape shown in grey, to stick the fold over part. 0.5mm stainless steel wire highlighted in blue to support flag & provide counterweight. Ø5mm fishing ball as bearing & 0.8mm stainless steel wire bent to form vertical support.

Counterweight formed by bending 3 turns of the wire with round nose pliers at about Ø4mm.



Designed by Roger Stollery

0 10 50 Scale mm

Bella



Andy Cope
builds the
Aeronaut kit



Santa Claus was very generous to me for Christmas 2016, delivering down the chimney a radio controlled yacht kit called Bella, **Photo 1**. This is another of Aeronaut's superb and easy to assemble kits, and it makes for a good sized model at 810mm long and 1400mm keel to masthead.

Bella is an all-wood construction kit and is assembled from laser-cut plywood parts **Photo 2**, with the deck, cabin and hull skins in mahogany and/or mahogany veneers.

The wood elements look great after a couple of coats of yacht varnish and really make the boat stand out on a 'sea' (or pond) full of plastic and GRP models. All the deck, rigging and sail fittings are included, leaving you to supply your own two channel radio gear. Two servos are required, one to pull in the main and fore sails, the second for the rudder. Both need to have decent torque (pulling power) as the kit is designed for standard size servos. However, I happened to have a larger sail arm servo spare, and just managed

to squeeze it in, as in **Photo 3**. Of course, the usual glues, paints and varnishes are still yours to supply. A larger model yacht called Bellissima is also available from the Aeronaut range, and is nearly identical in design, but is 1200mm bow to stern for those who like their models a little larger.

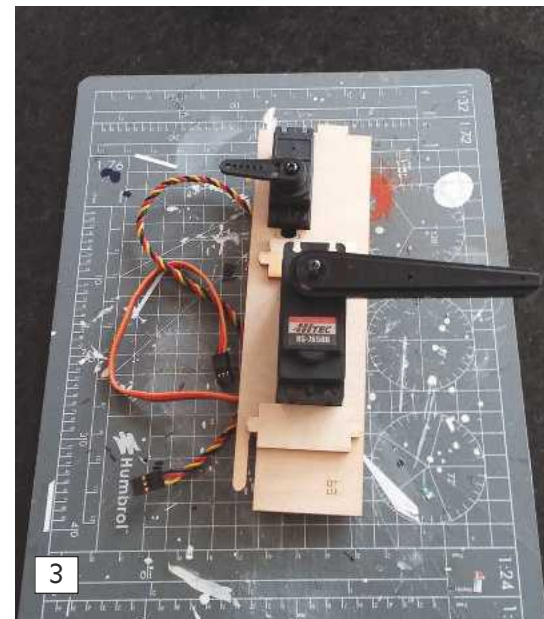
As an illustration of how easy these kits are to assemble, the box was opened to begin construction on the 2016 Boxing Day afternoon, and I was happily sailing the boat at the local pond on the 2nd January



1



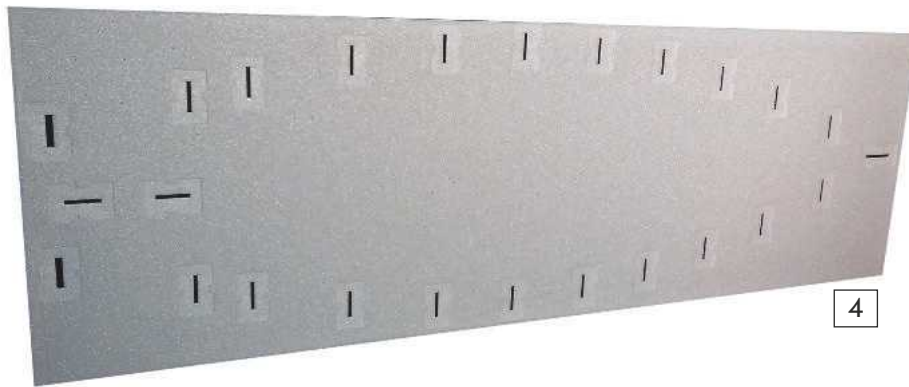
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3



5



4

Photo 1. Bella arrives in a substantial box and is priced at around £155.

Photo 2. The kit contents with its laser cut parts and fittings.

Photo 3. The steering and sail arm servos ready for installation.

Photo 4. The supplied Depron jig for building.

Photo 5. The hull frames are set in place on the Depron jig.

Photo 6. Keel and stern set in place on the Depron jig.

2017, just 7 days later. Now I do have to admit that being a big fan of Aeronaut kits, I have the advantage of already having built four other similar models from this brand, but I reckon most competent modellers could equally make short work of this kit if driven to do so.

The hull

As with most of these wood boat kits, a thin foam jig made of Depron, **Photo 4** is used to both hold and space the hull frames during its construction, **Photos 5 and 6**. This building aid, combined with the precision wood cut components, makes construction progress very rapid. Indeed, the wood parts rarely need even a touch of sandpaper prior to their



6



Photo 7. Hull sides glued into position.



Photo 8. The hull well on its way to completion.

Photo 9. The hull now the right way up having been removed from the Depron jig.

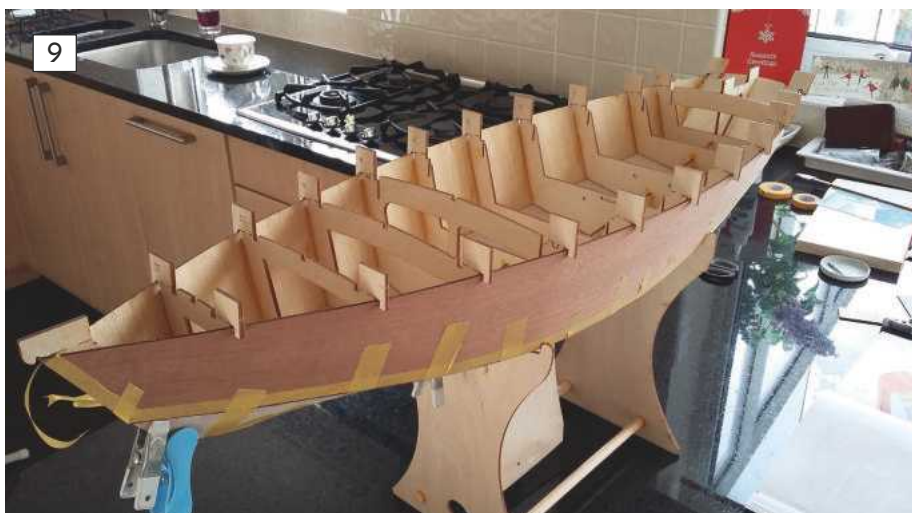


Photo 10. The main deck being prepared.

assembly and gluing. The only essential thing to remember is to make sure the construction surface you place the Depron jig on is perfectly flat, as any twist or lifting of the hull frames during construction will cause grief when you come to glue the deck on. There are no forgiving tolerances with a kit cut by laser to sub-millimetre accuracy.

The instructions supplied with these kits are usually in German, so while there are clear pictures to aid construction, I very much recommend downloading the English language versions available for free from the Aeronaut website. This is because while most of the construction is straightforward and illustrated very well, there is the odd gem of critical information in the accompanying text that you need to respect if problems are to be avoided.

A good quality wood glue, Titebond II, was used to secure all the major components, followed by clear epoxy resin, branded Z-Poxy, to strengthen the hull, this having a five minutes cure time, perhaps longer when depending on application and ambient temperatures.

The sequence of construction is very simple once the frames are set up, with **Photo 7** showing the side skins added, held in place with Tamiya tape whilst the glue dries. The only real pitfall to avoid is to ensure that any unwanted glue is not got on to the visible mahogany components, prior to varnishing them. If you do, then you will be left with unresolvable ugly marks when it comes to the



finishing varnish. The instructions recommend applying sanding sealer to protect the exposed mahogany parts from stray glue and handling stains, which is perhaps good advice, although I have never bothered, relying on modeller's masking tape to protect the bare wood. Tamiya tape is perfect for both masking and securing the wood components while waiting for the glue to cure. It's quite

expensive, but is well worth the investment.

Photo 8 is of the bottom plain plywood skins being added, again taking care to avoid glue going on to the mahogany side skins. This is all easy building, the laser cut parts being all near enough perfect fits.

Photo 9 now has the hull removed from the Depron jig and sitting on the supplied laser cut stand. Aeronaut could not make



it easier for you, the builder. The tops of the frames do of course have to be cut off before the deck stringers and deck are added.

Photo 10 is of the main deck being prepared, something that was done whilst the hull was still upside down on its Depron jig.

In **Photo 11**, the frame extensions have been cut off, the deck stringers added and the cabin sides. Once again, all easy work

and the hull is well on its way to completion.

Photo 12 is of the mahogany deck and cabin veneers all glued and clamped in place. The mast tabernacle base is just in front of the cabin.

Painting

The bottom of the hull and its keel are plain

Photo 11. Cabin sides and additional deck supports are being added.

Photo 12. Mahogany veneers (skins) are being added.

Photo 13. The hull has been varnished and the bottom painted with Japlac enamel.

Photo 14. Radio gear installed and attached to the sheets.

Photo 15. Bella on the water, all within a week from being just a box of bits.

plywood, so these were painted with Japlac enamel paint, a high gloss hard finish paint that is excellent for model boat hulls. The supplied keel weight is supplied in two halves which are simply bolted together through a pre-drilled location hole at the bottom of the plywood keel piece. To improve the overall appearance of this weight, gaps around its edges were filled with Milliput, a paintable epoxy modelling clay that sets rock hard within a few hours, **Photo 13**.

Rigging and sailing

The rigging is very simple, using the pre-made supplied sails and they do set the model of nicely. Sheets are taken through the fore and aft decks attached to the sail arm servo for the main and fore sail control, **Photo 14**. There is no rocket science in this and for this size of r/c yacht the system is more than adequate.

On the water, Bella sails very nicely, with good response from its large deep cutting rudder, **Photo 15**. It can handle light to



16



18



17

Photo 16. The completed cabin and cockpit area in particular is vulnerable for water ingress as effectively it acts like a sunken bath, A bailing system would overcome this problem.

Photos 17 and 18. The completed model is good enough for static display in one's home.

moderate winds with ease, and so far there has been no water ingress, but the open rear cockpit design will clearly limit its ability to stay afloat if the yacht heels too much and this fills with water. Perhaps an auto-drainage system could be fitted, **Photo 16** being a close-up of the cockpit. For that reason, Bella is currently reserved for sailing in pleasant light wind conditions. If you have not built an r/c yacht before, equipped only with sails, then of course it does not have reverse, unless you manage to get it into 'irons'. So, you have to think ahead when sailing, as if too close to the unreachable island in the middle of the pond and it then gets stuck, it is out with the rescue boat or waders.

Overall, both the construction and operation of the model has been an absolute pleasure, and Bella is also good enough in my view to be an ornament for static display, **Photos 17 and 18**.

Conclusion

At around £155 for the Aeronaut kit, it is excellent value and a basic two channel r/c system with a sail arm winch being more than adequate for controlling it. Time to build from box to water was barely a week and you can't get much quicker than that, waiting for the paint to dry in the later days being a big proportion of the time. To see a short video of the construction, please search You Tube for 'Buxton Model Boat Club 87'.

Andy Cope – enjoy your hobby





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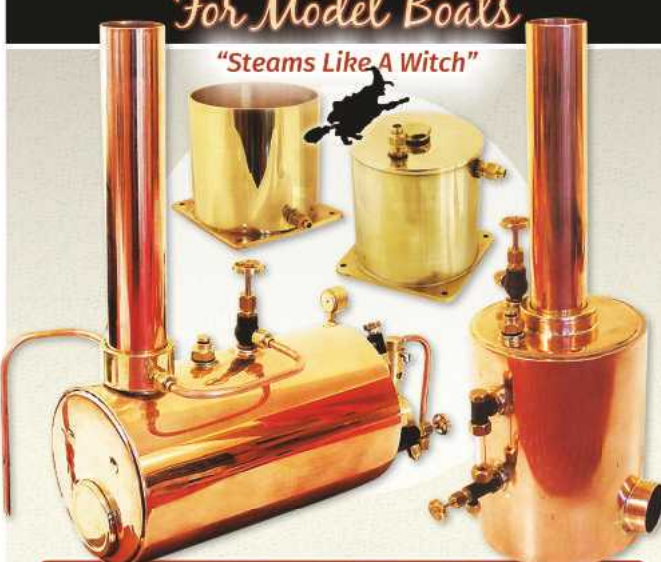


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By David Walter

Dazzle ships

Dazzle painting of ships was a system of camouflage which used disorientating shapes to make it difficult for U-boats and surface ships to estimate a ship's range, speed and direction of travel. This camouflage system was developed by the British marine artist Norman Wilkinson and more than 2000 vessels were 'dazzled' in World War One. To celebrate this in 2014 & 2015, a number of vessels around the UK were painted in such a fashion.

Right: HMS M33. This preserved monitor now at Portsmouth Historic Naval Dockyard, is the sole surviving vessel of the ill-fated WW1 Gallipoli Campaign. HMS M33 was built in Belfast by Harland & Wolff on a contract that was sub-contracted from Workman Clark Ltd.

Right and below: HMS President (1918) was built in 1918 as HMS Saxifrage, a WW1 Flower class anti-submarine Q-Ship. She was renamed HMS President in 1922 and moored permanently on the Thames as a Royal Navy Reserve drill ship. In 1982 she was sold to private owners and having changed hands twice, now serves as a venue for conferences and functions, also serving as the offices for a number of media companies. She was dazzle painted by the German artist Tobias Rehberger in 2014. She is now called HMS President (1918) to distinguish her from HMS President, the Royal Naval Reserve base at St Katharine Docks. She was recently moved from her berth at the Victoria Embankment due to the development of a new sewage pipeline system and moved to Chatham Docks.





Above: The former Liverpool pilot vessel Edmund Garner was dazzle painted by the Franco-Venezuelan artist Carlos Cruz-Diez and can be seen in the Canning Graving Dock on the Liverpool waterfront.



Below: The Mersey ferry Snowdrop was dazzle painted by the British pop artist Sir Peter Blake. An onboard exhibition tells the story of how two Mersey ferries were involved in WW1.





A Racing Yacht Rebuilt



Phil Button's new project

In mid-May 2016, a friend of my wife called round and told me he had something to look at in his car. I duly followed him outside and was shown a pair of racing yachts that had obviously seen better days, one red and the other blue. He informed me that a friend had sold them to him for £10 each and wanted to know if he had 'been done'. I reassured him on that point, as even bearing in mind the state they were in, they were definitely worth more than what he had paid. He then 'made me an offer I couldn't refuse' when he said, 'If you do one of them up for me, you can keep the other one'. As you might have guessed, I jumped at this offer and placed both models in my boathouse (aka garage) to await attention.

The models 'as found'

Both models had definitely seen better days and there was no escaping that. In particular, the red one had a fractured hull, **Photo 1**, with the keel no longer fixed to the hull; the sail winch servo loose inside and the rudder stock bent, **Photo 2**. However, it did have a complete modern swing rig with plastic

sheet sails which were absolutely filthy, but cleanable, **Photo 3**, together with a sail winch, rudder servo and a 27MHz receiver.

As for the blue yacht, it's hull was in slightly better overall condition, **Photo 4**, and it had a sail arm servo, a rudder servo and a 27MHz receiver fitted inside the hull, **Photo 5**. However, it had no mast or rigging above the mainsail boom and the only sail was a rather dirty jib complete with a boom, **Photo 6**.

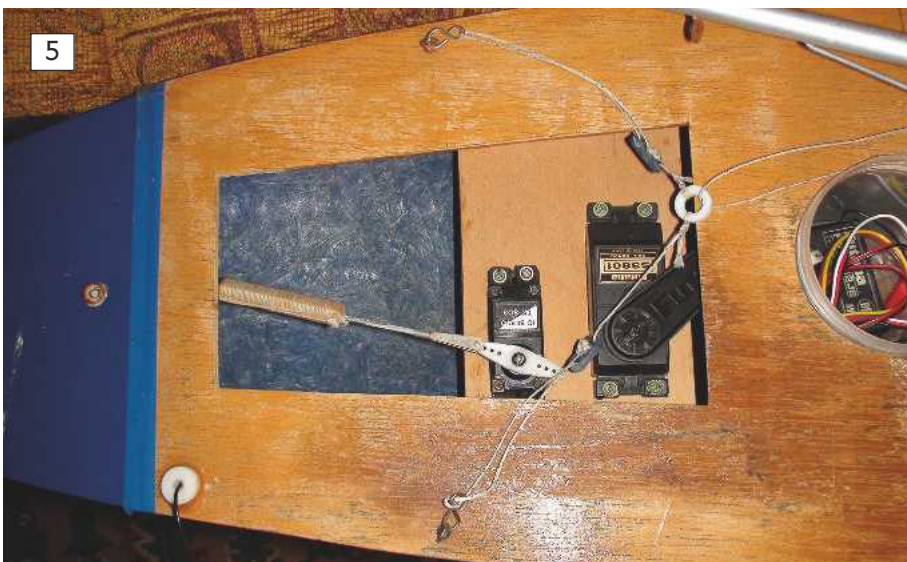
From the overall dimensions, I believe that the red yacht was probably an R36 and the blue one an International One Metre (IOM) type, but I stand to be corrected as I am no specialist in racing yachts. Anyway, having assessed both models, the conclusion was that the red yacht would probably be the easier of the two to rebuild, because at the very least it had a full set of rigging and sails, but as work progressed, one did begin to wonder whether the right choice had been made. Very early on in the rebuild process, the name 'Red Dragon' was chosen, which could be something to do with its colour, and hence the title for this article. When I eventually get around to working on the blue yacht, I may well write about that experience, so watch this space.

The rebuild

The first step in any rebuilding and restoration project is to closely inspect the model, disassembling where necessary to find out exactly what needs to be done. After removing all the self-adhesive patches over access holes in the hull and shaking out any loose bits from inside, the now rapidly growing list of jobs came down to the following:

- 1** The bow bulkhead, which would at one time have mounted a foam 'bumper', was missing and would somehow have to be replaced.
- 2** The lead weighted wooden keel was split where it entered the hull and not fixed to the hull bottom (or the deck), and would need repairing and refitting.
- 3** The rudder stock would have to be straightened and refitted.
- 4** The sail winch and rudder servo needed refitting inside the hull.
- 5** The radio control receiver and battery pack required refitting.
- 6** The sails needed a good scrub with soapy water and a small repair to a tear at the bottom of the mainsail.

It rapidly became apparent that it would be difficult, if not impossible to carry out the repairs using keyhole surgery via the limited



openings through the deck, and so it was decided to remove the deck completely. As it turned out, the deck was made of a rather splintery plywood and not held on by much and therefore very easily removed. The sloping deck at the stern was retained as it supported the rudder's top tube and I did not want to disturb this if I could avoid it. However, a layer of car body filler was added to the joint between the deck and the inside of the hull to strengthen it all, **Photo 7**. Okay, not pretty, but it does the job.

Having removed the whole deck, it was retained to act as a template for the new deck. However, removing the deck revealed another 'horror' in that the base of the mast tube was not fixed very securely to the hull and this was

repaired with a generous dollop of body filler after degreasing the hull, **Photo 8**.

A replacement bow section was made from a number of pieces of ply and strip wood, **Photo 9**, held in place by body filler internally and filled as required and sanded to the desired external final shape as in **Photo 10**.

After removing the keel and its lead weight and stripping off most of the paint, the crack in the woodwork was repaired by a process known as 'stitching'. To do this, a row of holes was chain-drilled across the split and opened out using a craft knife and files to allow a piece of hardwood to be glued in place across the crack. **Photo 11** shows the end result after sanding the repair to its final shape.

Removing the paint from the lead keel

weight also removed some of the old filler that had been used to fair the weight in to the keel, so this was made good with new car body filler and sanded to shape, **Photo 12**.

To start refitting the keel to the hull, two plywood cross braces were installed below deck level with shaped timber pieces to carry the top of the keel blade. All of these parts are seen in **Photo 13** whilst clamped and waiting for the glue to dry.

Since the thin glassfibre hull was broken around the area where the keel passed through it, some shaped wood bracing blocks were added either side of the keel, rigidly fixed to the keel blade and the hull with car body filler as in **Photo 14**. As the days of racing this model yacht were now well and truly over,



the additional weight of the new bracing was judged as not likely to be much of a problem. Now that the major components were firmly fixed to the hull, the next step in the restoration process could begin.

Radio equipment

As a start, it had already been decided that all of the radio control gear would be located on a plywood plate mounted behind (astern of) the keel, with access through a removable hatch cover in the deck. To achieve this, a pair of carefully shaped pieces of plywood were fixed to the hull sides, once again using car body filler (where would we be without this medium?), and **Photo 15** shows one of them

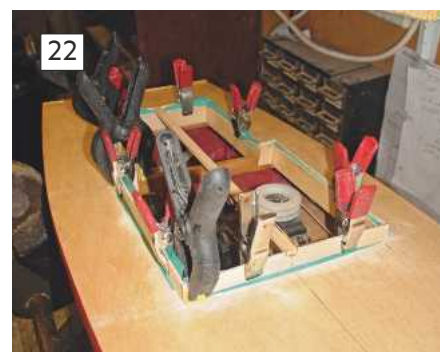
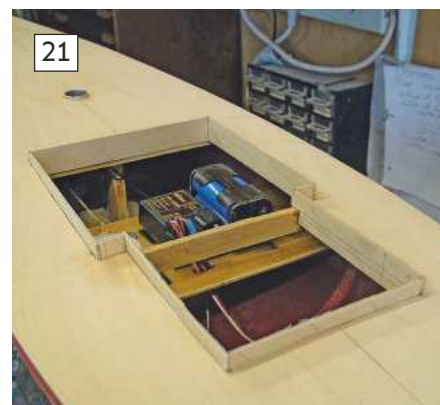
in place. Then, a piece of plywood was cut to fit between these two supports, with cut-out holes for the sail winch servo, its end of travel adjuster and an on/off switch (the rudder servo is mounted further) aft. Self-adhesive Velcro was used to mount the radio receiver and the receiver battery pack and these are all shown in **Photo 16**. Please note that the lead weights in the picture are there to keep everything in place only while the glue dried.

With the radio control plate now in place, the deck beams could be fitted and these serve two functions: First, they provide support for the new deck and second, they help to brace the sides of the hull apart and **Photo 17** shows these beams in place in the hull. Although the original model had

a completely flat deck, a small amount of camber was added to the replacement deck beams as a flat deck looks just plain wrong, at least in my humble opinion. The front pulley for the sail winch was fitted to a plywood beam between two of the deck beams forward of the mast, and it is just visible amidships in this last photo. As a matter of interest, the forward pulley for the sail winch had been made from two pennies (old pre-decimal pennies) with a spacer and was retained for this restoration project.

The sail winch servo was fitted into the radio control plate and a continuous loop of cord runs forward and around the pulley. Attached to the loop of cord is a take-off swivel which is used to adjust the position





of the sail assembly via a nylon cord which would eventually be routed through a metal fairlead on the forward deck. The servo, take-off swivel and the pulley can be seen in **Photo 18**.

After adding a number of longitudinal deck supports between the deck beams, a deck of 1.5mm plywood was glued in place on the top of them all, not forgetting to pass the mainsheet (for controlling the sails) through a pre-drilled hole at the forward end. To avoid the possibility of the mainsheet disappearing back through the drilled hole, where it would then become totally inaccessible, a steel washer was tied to the end to prevent that happening. The deck was held in place by weights, spring clips and masking tape while the glue dried, **Photo 19**. To cover up two large holes in the sloping aft deck, a piece of

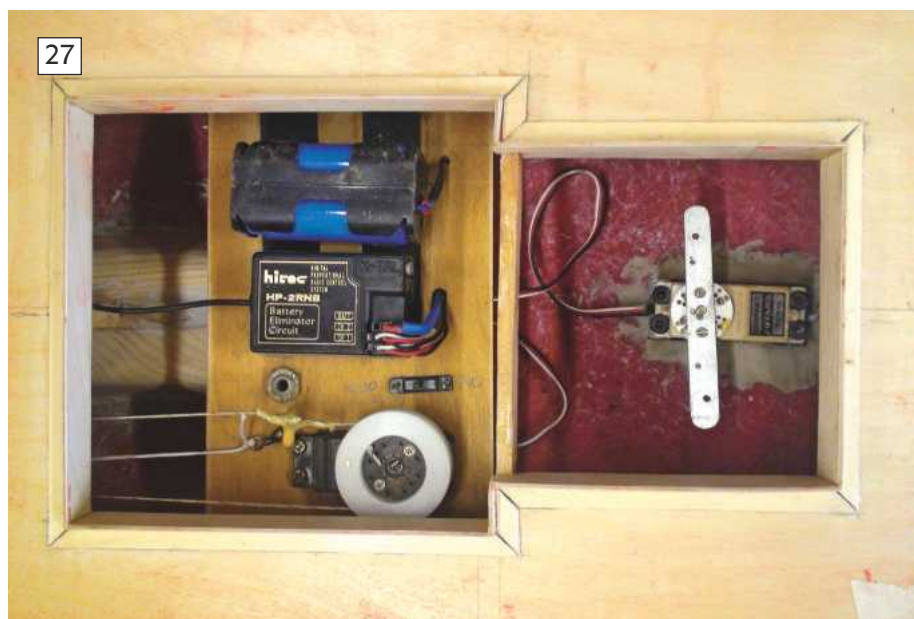
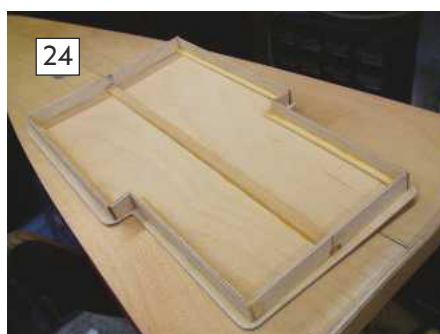
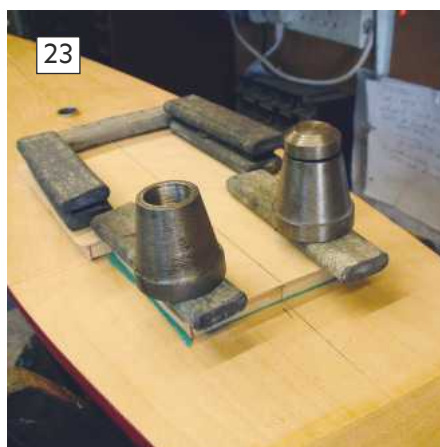
1.5mm plywood was cut roughly to shape, glued in position and sanded to its final shape after the glue had dried. The opening in the deck for access to the equipment inside was trimmed to its final shape using a craft knife and sandpaper, **Photo 20**. By now, Red Dragon was beginning to look much better and was rapidly changing from a wreck into something practical and useable.

Hatch

A coaming was needed around the equipment hatch and this can be seen in **Photo 21**. On completion, a frame for the hatch cover itself was built in place around it. It is often more convenient to build such parts as hatch covers, superstructure units, etc. in-situ on a model, any model, as then at

the very least, they should be a good fit. The outside of the coaming and the deck were lined with polythene sheet (carrier bags, even at 5p each, do this job very well) to prevent the hatch cover sticking to the model and **Photo 22** shows the work in progress.

With the hatch framing complete, its top (roof) was cut from 1.5mm plywood and glued to the top of the frame using weights to hold it to the curve while the glue dried, **Photo 23**. Additional strength was then added to it all by removing this hatch cover from the deck, turning it upside down and gluing strips of wood around the inside edges and across the centre, **Photo 24**. After two coats of clear dope and being sanded between applications, the completed hatch cover was painted gloss white ready for fitting to the finished model yacht at a later date.



Finishing the hull

The hull was sanded, filled where necessary and sanded again before being given a coat of Signal Red gloss paint. Remember, it was largely of fibreglass and the new wooden bow section had already been suitably treated. After flattening this initial coat of paint and filling anywhere once again that showed adversely, the hull was given a second coat of paint. Once completely dry, a gold stripe was added to both sides of the hull using self-adhesive tape from a car spares shop, before finishing off the paint job with two coats of clear yacht varnish to improve the colour coats' 'shine' and toughen the finish. To do this, the whole hull was again 'flatted' with fine wet and dry sandpaper before applying the first coat of varnish. After the first coat of varnish was

dry, this in turn was lightly sanded before applying another coat and **Photo 25** shows the finished result.

Deck planking

This was (and is) one of the long and perhaps rather tedious jobs, when fitting a deck with its planking. Initially, a bow piece of 3mm plywood and deck edge strips of 3mm square hardwood were fitted, along each side of the hull, and **Photo 26** shows these at the bow intersection. These pieces were glued in place using thick superglue and held in position with masking tape to allow the adhesive to set. Then pieces of 6mm x 0.5mm lime strip planking were cut to length, rubbed along all their edges with a soft pencil (to simulate deck caulking) and glued into position to

create a border around the hatch coaming as in **Photo 27**.

Yacht deck planking is generally fitted to align with the outer edges of the hull which gives a pleasing appearance with the curved planks running to a central plank on the forward and aft decks. A planking scheme was devised (with a little help from the Internet), and a maximum length of plank determined, the process being started by fitting the central planks on the forward and aft deck and the piece across the front of the sloping after deck. After cutting each deck plank to the required length, the edges were marked with a soft lead pencil to imitate the caulking of those on a full-size yacht and glued in place by being thinly coated with Alpha Thixofix contact adhesive. The surface to which the planks were to be fixed was



also coated with this adhesive and both surfaces allowed to dry. This glue is not 'instant grab' and it allows a short time to move parts around for a good fit before it finally sticks - permanently. The glued planks were applied to the plywood deck and pushed and rubbed into position using a polished piece of hardwood to remove all the air bubbles for a good fit and **Photo 28** shows the completed port side planking.

This entire process was then repeated for the starboard side, taking care to get the plank joints aligned as accurately as possible with those of the completed port side. A metal fairlead for the mainsheet was also screwed to the forward deck, with the mainsheet passing through it, **Photo 29**.

The completed deck planking was then sanded smooth, given a coat of wood grain filler and allowed to dry. The filler was in turn sanded before applying three coats of yacht varnish, rubbing down with wet and dry sandpaper between each application.

Stand

During most of the work on the refurbishment of the hull, this model yacht had been supported by a stand that had been borrowed from another, which in turn had been now lying on its side. As this model yacht was almost ready for returning to its owner, it needed a stand of its own, so a



simple version was built from strip wood, dowel and furniture webbing as in **Photo 30**.



Finishing touches

The white cabin top was going to carry the name of the yacht in the form of a waterslide transfer as in

Photo 31. These transfers are designed on a PC and printed using an inkjet printer on to a product called Lazertran. After cutting the transfer to the finished size, it is soaked in water to free it from the backing paper and slid into place on the model. After carefully smoothing with kitchen towel to remove all air bubbles it should be left to dry. The transfer film then turns white, but this can be resolved by giving it all a coat of an oil-based varnish. This type of transfer needs a coat of varnish anyway, as it is not waterproof and will come off the model if it gets wet, AND not much good for us if we don't take care.

Finally, the repaired and repainted rudder with its straightened stock was refitted into the tube through the stern and connected to the servo inside the hull. This proved more awkward than it should as there was not much access through the hatch for my 1:1 scale hands. However, after much fiddling about, the task was completed and **Photo 32** gives an idea of how difficult the servo connections are to access underneath the aft deck as this last picture could only be taken with the aid of a mirror.

The now scrubbed and cleaned swing rig was fitted into the aluminium socket on the foredeck and the mainsheet clipped to it using a fishing line quick release connector



and **Photo 33** is of completed yacht in all her glory and ready for sea trials.

Maiden voyage

Readers of any of my earlier articles in this magazine will know that for me, maiden voyages rarely take place in the same year as the model has been received, and/or built, this just being the way of things. However in this case, in August 2016 the yacht was disassembled and packed in the car for a trip to the boating lake at Sheringham in Norfolk, a mere four months after its receipt as a derelict. The weather was not ideal for the first trial of a sailing model since, although it was warm and sunny, the wind was rather strong with some very heavy gusts and was also varying in direction.

Nevertheless, after fitting the mast and sails, which is simple with a swing rig as it only needs to be plugged-in and connected to a

single sheet, the radio control was checked for correct operation and the yacht placed in the water. It shot off in grand style, although it took a while to get the hang of sailing with a swing rig as I am used to a conventional rig of a separate mainsail and jib. The response to the helm was good in all sailing attitudes, but with a pronounced tendency to wallow when running before the wind, which is not uncommon for any yacht (even full-size versions) and **Photo 34** shows Red Dragon under test at Sheringham.

One corrective action became clear during the trials, and that was that the sail winch servo could not pull the rig in far enough to sail really close to the wind and the length of the one and only sheet had to be adjusted. After sailing (racing) around the lake, more or less, under control for a good 30 minutes including heeling well over and at one point trying to imitate a submarine, the hull was checked for water ingress and found to contain about 30cc that must have entered around the new hatch cover. Not too much to worry about in the circumstances, so this maiden voyage could be regarded as a success.

Conclusion

After a most enjoyable restoration and rebuilding project over a comparatively short time (at least for me), Red Dragon has now been delivered to her customer and he is delighted with it. However, since he has never sailed a radio-controlled yacht before, it remains to be seen how he will get along with her. I am also given to understand that the neighbour who in the first place sold him the two model yacht wrecks, now wishes he had thought to bring them direct to me for attention.....



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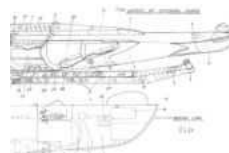
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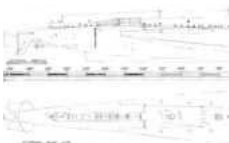
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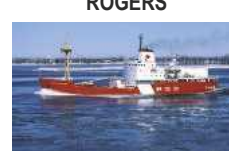
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Product Code: WP2447
£45.99

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£57.99 + p&p

DUMB BARGE



Scale: 1:50
Length: 600mm
Beam: 120mm
Designed by Mike Mayhew
Difficulty **
Product code: MAR2726
£11.50 + p&p

LE CAUX



Scale: 1:30
Loa: 770mm
Beam: 220mm
Designed by Jim Pottinger
Difficulty **
Product code: MAR3100
£16.50 + p&p



JOHN KING



Scale: 1:24
Length: 880mm
Beam: 220mm
Designed by Jim Pottinger
Difficulty **
Product code: MAR2734
£18.99 + p&p

CIVITAVECCHIA



Scale: 1:42
Length: 630mm
Beam: 230mm
Designed by Richard Webb
Difficulty **
Product code: MAR3206
£16.50 + p&p

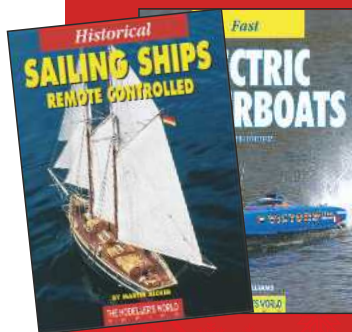
GIRL CLASS TUG



Length: 590mm
Beam: 165mm
Designed by Jim Pottinger
Difficulty **
Product code: MAR2660
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This second edition of Chris's popular book covers a variety of building methods - from building from kits to scratch-building, with projects covering an interesting range of subjects.
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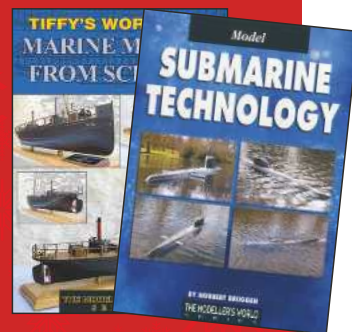


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SCALE FISHING BOATS

ORCA



Scale: 1:13
Length: 900mm
Beam: 225mm
Designed by Peter Fisher
Difficulty *
Product code: MAR2463
£13.50 + p&p

MARIE JOSEPH



Scale: 1:16
Length: 870mm
Beam: 150mm
Designed by Andre Moreau
Difficulty **
Product code: MAR2389
£13.50 + p&p

FROYLINER



Scale: 1:48
Length: 800mm
Beam: 195mm
Designed by Jim Pottinger
Difficulty ***
Product code: MAR2467
£18.99 + p&p

PRIDE O' FIFE



Scale: 1:32
Length: 880mm
Beam: 178mm
Designed by Findlay Drynan
Difficulty **
Product code: MAR2396
£18.99 + p&p

SANTA AUDREY



Length: 540mm
Beam: 150mm
Designed by David Heaps
Difficulty **
Product code: MAR3221
£11.50 + p&p

SPANISH FISHING BOAT



Scale: 1:24
Length: 92.5cm
Designed by Jim Pottinger
Product code: MAR3549
£13.50 + p&p

ELEANDA



Scale: 1:28
Length: 815mm
Beam: 234mm
Designed by Jim Pottinger
Difficulty ***
Product code: MAR2413
£18.99 + p&p

ROSS DARING



Scale: 1:50
Length: 595mm
Beam: 135mm
Designed by Jim Pottinger
Difficulty *
Product code: MAR3470
£18.99 + p&p

MV VENTURE



Scale: 1:25
Length: 985mm
Beam: 290mm
Designed by Jim Pottinger
Product code: MAR3160
£18.99 + p&p

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Above: Gloria Jean is a classic TID tug – always a popular subject for model tug enthusiasts.



Above: A super model of the coastal tanker Athel Brae seen on the Runcorn and District Scale Model Boats stand.



Below: Chris Behan is a master of the hovercraft model and this is his Royal Marines LCAC (Landing Craft Air Cushion Light) with plenty of working features.



Left: Trucks are becoming popular and can blend in well with model boats, and lifeboats in particular, as this fine example on the Wallasey Model Boat Society stand demonstrated.



Above: The superb 172 scale Kriegsmarine S-boat by Chris Behan. Note the advert for the 2017 Model Boat Convention later this year.

Spring Model Boat Show

Dave Wooley reports from the National Waterways Museum, March 2017

Held on the 4th and 5th March 2017, this event is regarded by many as a 'Season Opener' and is probably the first chance in the year to get to your trader of choice, meet old friends, see the club stands and examine the models on display. The museum is, at the time of writing, undergoing renovation in what would have been the main café area and shop. As a temporary measure, a café area was opened at the top of the Rolt Centre which made for a perfect vantage point to see the full-size vessels on the Manchester Ship Canal.

The Waterways Museum is a working and living entity and as such the model boat show has to fit within it all and this makes the venue different, as many of the clubs and traders are spread around the buildings within the museum, so visitors have to look beyond the immediately obvious display areas.

The event

Many of the clubs and traders occupied the same spots as in previous years, which for the regular visitor made locating them much less problematic. My visit on the Saturday coincided with the one fine day of the weekend and this allowed the full use of the upper basin and lock for on the water demonstrations. The clubs, as always, rise to the occasion and their displays are always interesting as there is always that gem of a model that warrants further scrutiny and of course a photo or two.

Sadly this year, there was no David Owen Static Competition because of the temporary space considerations, but all of the display and trade rooms seemed to be well attended by visitors, at least on Saturday morning when I was there. One area that was really packed was the

Bring and Buy Stall, a noticeably increasingly popular area at many similar events.

Conclusion

There is little doubt that this venue is unique, but the on-going alterations to the museum and the miserable weather later on the Sunday may have had some effect on overall visitor numbers, but when I was there on the Saturday morning the main car park was almost full by 10.30 am, and the volunteers directing traffic deserve much praise. This event is organised by volunteers who deserve our full support and the museum and its staff are most supportive, something that in years' gone by was not always the case. Let's hope that this unique event continues for 2018 and the volunteer organisers get our full and increasing support.



Above: On the Kirklees MBC stand was an under-construction Glynn Guest designed Union Castle cargo ship already looking really attractive in its unpainted appearance.

Left: Wow! This huge ACL container ship is one of a number of very large scale models that were operated within the Waterways Museum dock system during the weekend.

Below: Stan Reffin's latest ongoing project is this neatly presented fishing boat and it even has a working radar screen.



Left: A nice day for a sailing session within the model dock system.

Below: A very interesting internally detailed model of the Clyde P.S. Duchess of Fyfe, built by Peter Ware from a set of drawings.



Left: A new scratch built Mersey Ferry under construction shown on the Hoylake MBC stand.



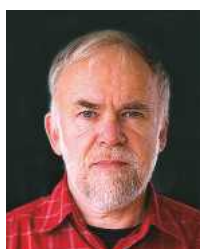
Left: A semi-scratch 1:32 scale Foylegarth tug built by Joe Hughes of the Liverpool MBC and next to it is a smart RMAS tug Alice built by Joe Lang.



Right: Meeting and chatting to members of other clubs is a great way to make friends, gain knowledge and enhance your hobby experience, and this is the Potteries MBC in action!



Flotsam & Jetsam



John Parker
delves into
the archives

50: Berkeley Models

Berkeley Models, originally of Berkeley Square, Brooklyn (hence the name), was a prolific American manufacturer of model kits and associated accessories that by 1957 could claim several 'firsts' in the course of selling over two million kits of some 200 different designs through a 4500-strong dealer network across the USA. Yet just five years later, the company ceased to exist.

Founded by William W. 'Bill' Effinger in 1933, Berkeley Models was founded as a means of providing Bill with a little extra income to help him through college, where he was studying for a degree in mechanical engineering. He started with rubber-powered model aircraft designs, offering them as kits, and in 1935 had an early success with a kit for a free-flight 'gas' or internal-combustion powered model, called Buccaneer, possibly the first of its kind. At the time of the Great Depression, Berkeley Models became Bill's full-time occupation after he graduated, and he added an aeronautical degree to his accomplishments. He volunteered for service with the US Navy in 1943 after war had broken out and was stationed in the Pacific, where he was said to spend his off-duty time kiln-drying local balsawood timber for building models.

After the war, he moved Berkeley Models which had been kept running for the duration

MODEL BOATS..
by *Berkeley*

Naval Architecture in Miniature at its very best
Our Designers all have Full Scale Boat and Airplane experience. The combination of Naval Architecture and Aerodynamics has produced models that are outstanding in performance and design.

All Scale "Chris-Crafts" are designed by the famous "Conical Lofting Method." Mahogany Veneer construction is used throughout. All wood parts are accurately Die-Cut to shape, and need only be assembled.

NEW

Chris-Craft "OUTBOARD EXPRESS CRUISER"
For Electric Outboard & Inboard Engines
18" Long—1" Scale
The ideal kit for the new model electric outboard motors, or an electric inboard motor. Designed from factory plans, authentic down to the special "Chris-Craft" details. Kit is complete and priced at...
\$2.95

Chris-Craft "EXPRESS CRUISER"
22 Foot
For .045 to .099 Engines, or Small Electric Motors
A really beautiful model on your shelf or on the water. Performance and planning characteristics are comparable to Riviera-Buccaneer. Both are built to the same scale. "1/8" Marine Hardware and Deck Hardware is included.
1/8" Scale—14" Long—4 1/2" Beam
\$3.50

"1/2A" MARINE HARDWARE SET
For .035 to .099 Engines
Ready-made parts include: Engine Coupling, Shaft, Shaft Tube, Strut, Propeller.
\$1.00

"A-B" MARINE HARDWARE SET
For .014 to .036 Engines
All parts are ready-made. Set includes: Cast Propeller, Cast Strut, Engine Coupling, Drive Shaft, Shafting Box, and Hook-up Plates.
\$2.95

"SAILABOUT"
The Sailabout "1/8" is a scientifically designed sailboat with amazing speed. It has a reputation to prove it. The rudder is timer-operated by a fine mechanism that makes the boat "Come-about", and return over the same course.
Overall Length—15 1/2" Height—25 1/2"
Sails are included, ready to use. The hull is balsa, completely carved and hollowed. Scored Deck and Cabin are Die-Cut Mahogany Veneer. Molded Metal Keel and Complete Hardware.
\$3.95
Pre-Fabricated Kit

Chris-Craft "RIVIERA RUNABOUT"
19 Foot
For .035 to .099 Engines—12" Long
This test model pictured here crossed the Connecticut River at full throttle. It is hard to describe its realism in the water. You have to see it to believe it. Kit includes: "1/8" Marine Hardware, plus Metal Binnacle and Deck Hardware.
\$2.95

"SEA-JET"
Complete with "JETEX 50" Engine
A complete high speed jet powered boat that races 400 feet in 1.5 seconds. May be adjusted for turn. The hull is formed from strong colored plastic. Engine is installed in model.
\$1.95

Above: 1953 advertisement for Berkeley Models model boat kit range.

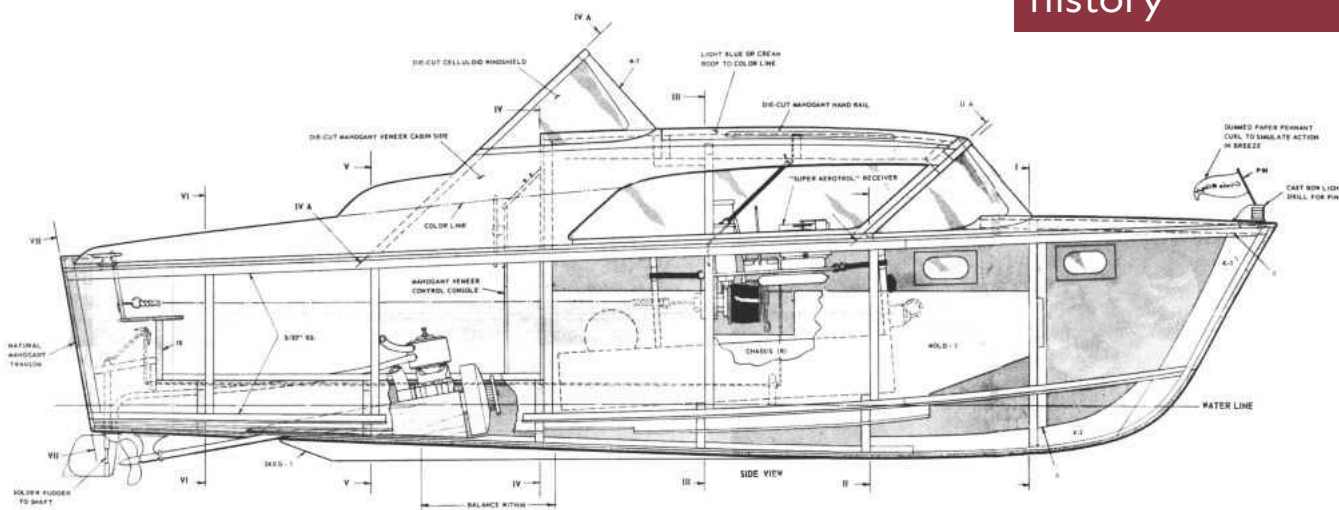
Below: Chris-Craft 22 Express Cruiser kit.



with the help of his father, to Railway Avenue, West Hempstead, Long Island, and began a period of expansion that was to see it become a major player in the industry. He employed some of the best designers for his kits, which by now included model cars and model boats as well as model aircraft; he produced a series of 'how to' books that were highly regarded (easier, he said, that answering all the same queries time and time again); he offered a range of radio control gear under the Aerotrol brand; and he introduced the pseudonym 'Bill Berkeley' to his advertising, which commenced 'Bill Berkeley says.....'

The Berkeley range

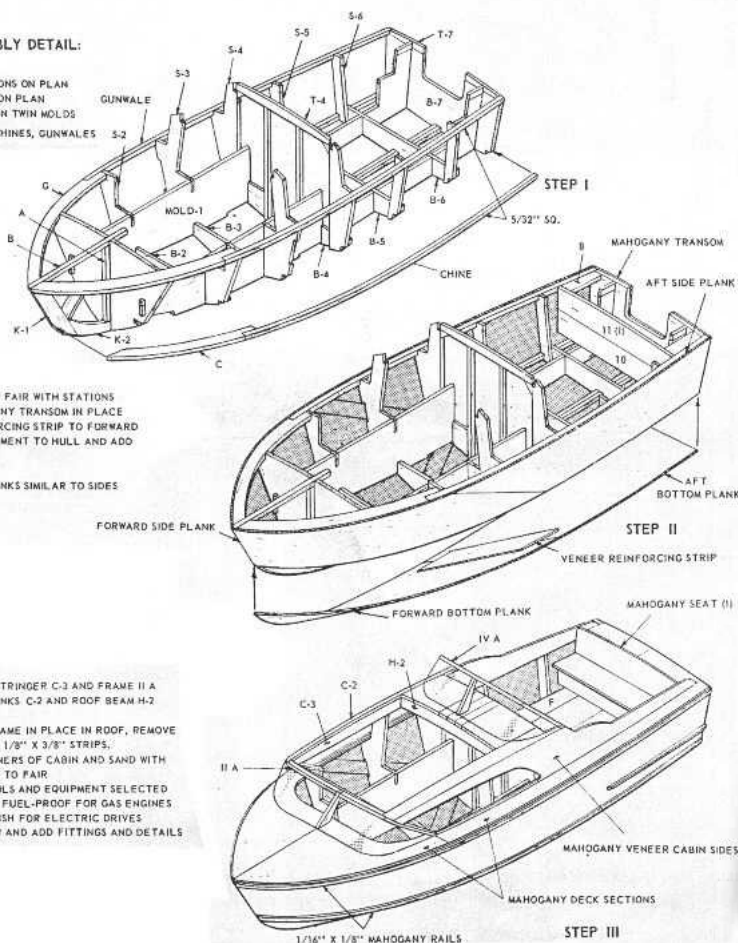
I have a Berkeley catalogue from 1947 to 1948, their first new one since 1943, and it shows the first model boat kits, both being i.c. powered racing hydroplanes, the 24 inch long Sea Bird and the 28.5 inch O-Gee, amidst a fairly comprehensive range of aircraft kits, building materials, engines, early radio control equipment and tools. Berkeley claimed successful operation of their Super Buccaneer model aircraft under radio control as early as 1938. The hydroplane kits were of plywood construction and for



Above: Hull profile from the Chris-Craft 22 Express Cruiser plan.

HULL ASSEMBLY DETAIL:

- 1 - ASSEMBLE STATIONS ON PLAN
- 2 - ASSEMBLE STEM ON PLAN
- 3 - ERECT FRAMES ON TWIN MOLDS
- 4 - INSTALL KEEL, CHINES, GUNWALES



- 5 - SAND FRAMES TO FAIR WITH STATIONS
- 6 - CEMENT MAHOGANY TRANSOM IN PLACE
- 7 - CEMENT REINFORCING STRIP TO FORWARD SIDE PLANKS, CEMENT TO HULL AND ADD AFT PLANKS
- 8 - TRIM TO CHINES
- 9 - FIT BOTTOM PLANKS SIMILAR TO SIDES

- 10 - INSTALL CABIN STRINGER C-3 AND FRAME II A
- 11 - FIT CORNER PLANKS C-2 AND ROOF BEAM H-2
- 12 - FIT CABIN SIDES
- 13 - BUILD HATCH FRAME IN PLACE IN ROOF, REMOVE AND PLANK WITH 1/8" X 3/8" STRIPS
- 14 - ROUND OFF CORNERS OF CABIN AND SAND WITH HATCH IN PLACE TO FAIR
- 15 - INSTALL CONTROLS AND EQUIPMENT SELECTED
- 16 - FINISH INTERIOR FUEL-PROOF FOR GAS ENGINES STAIN AND VARNISH FOR ELECTRIC DRIVES
- 17 - FINISH EXTERIOR AND ADD FITTINGS AND DETAILS

Left: Stages in construction.

Below: Berkeley round-edge planking strips.



tethered operation. O-Gee was a successful record breaker during the 1940's, and at the time still held the Class D and C records at 68.15 miles per hour and 58.17 miles per hour respectively.

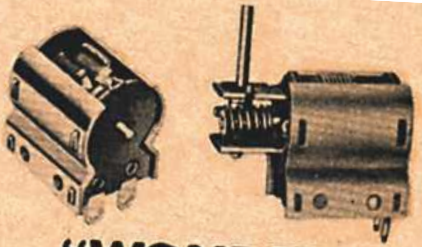
By 1953, the model boat range had expanded to include scale Chris-Craft, a 12 inch Riviera runabout, 14 inch Express Cruiser and an 18 inch Outboard Express Cruiser. Their designers were said to have full-size naval architecture experience and a diagram showed how the kits made use of conical lofting to provide single-curvature skinning of the hulls using sheet veneers. Also available at this time was Sailabout, a 15.25 inch long yacht with a timer-operated rudder for automatic return over the same course, and Sea Jet, which would be recognised by English readers as a repackaged version of

the Jetex Speedboat. Berkeley subsequently announced in 1955, their own reaction motor, the Psst 50, which made use of Jetex fuel pellets. One wonders what the legal implications were here, given it is clearly a copy of the Jetex 50.

Another jet propelled model, Donald Campbell's Blue Bird, features in a 1956 advertisement. A simple snap-together kit just 10 inches long, this as far as I can tell was intended for propulsion by the direct action of a Sparklets-type carbon dioxide bulb. More Chris-Craft cabin cruisers were added to the range, with the advertising emphasizing their 'BIG' size, probably to cover up the fact that they were quite small, generally 16 to 22 inches long. Sailors were catered for by an enlarged selection of yachts that included the Hinkley Custom 36, a scale model that

could be fitted with an auxiliary motor and was intended for radio control, whilst the Chris-Craft 32 Cruiser boasted a 32 inch vac-formed hull for those that didn't enjoy traditional construction.

A late addition in 1957 was the USAF Air Sea Rescue Boat, designed by Walter Musciano (Flotsam and Jetsam No. 25, April 2015 issue). This was a 32 inch scale model of the fast prototype boat of the Korean War era and was intended for i.c. power, but with the option of twin electric auxiliary motors in addition for its easy retrieval. By 1955, Berkeley was able to offer its own electric motor for uses such as this. An interesting innovation by Berkeley was their rounded-edge planking strips, shown in a 1957 advertisement, that enabled flush fitting over a curved surface.



"WONDER" ELECTRIC MOTORS

• Reliable • Powerful • Easy to Install

Far superior to any other electric motor. Available in Direct Drive, and in four ratios of reduction drive. Suitable for Boats, Cars, Radio Control Servos, Model Railroad Accessories, etc. Will run well on only one pence (1 1/2 volts) if desired.

Above: Advertisement for the Wonder Motor, 1955.

The Wonder Motor

The Wonder Motor was a miniature 3 to 6 volt battery operated motor intended for models that was offered by Berkeley Models. It was the subject of a 1952 patent and made by the Wonder Product Company also of Brooklyn, New York. Its three-pole armature was carried in fibre end plates and a magnetic slug (cut crookedly in some of my examples) held the iron pole pieces and base mounting in place. An unusual feature was its availability in direct drive or any of four reduction ratios of 10, 18, 100 or 324 to 1, achieved by mounting one, two or three right-angle worm drive assemblies to the end of the motor. Whilst this might sound impressive, the overall efficiency using multiple single-start worms and plain driven gears must have been very low, and the motor was too small to provide effective propulsion for a model boat.

Below: Tone-Aerotrol and Super-Aerotrol RC equipment and accessories.



NEW...NEW...NEW...

BIG 1" Scale—36" Hull Length

"HINKLEY"

"CUSTOM 36"

by *Berkeley* \$14.95

FIRST SCALE AUXILIARY SAILBOAT FOR RADIO CONTROL

Here's an all-purpose model boat that is sure to cause a thrilling sensation wherever it is sailed. Imagine a sailboat that automatically turns on an electric motor if the wind should die down! Perfectly detailed, this scale model is one of America's most popular sailing craft. Although it performs wonderfully as a straight sailboat, the complete details for radio control operation are included.

KIT FEATURES:

- Heavy Thickness Formed Plastic Hull
- Mahogany Superstructure
- Full Rigging and Sails
- Marine Deck Hardware

Chris-Craft

"22" EXPRESS CRUISER

FOR SINGLE OR DOUBLE OUTBOARD ELECTRIC OR GAS MOTORS

BIG 1" — 1' Scale — 22" Long

Here is the boat large enough for radio control at the price of many smaller models. There is real fun in more when you build and sail this big, big model.

The Hull and Superstructure is constructed of Mahogany Planking throughout. Kit includes marine deck hardware, all wood parts pre-drilled, plastic windshield, and "JIG-PLAST" for simplified, accurate, and quick assembly.

INBOARD — FOR "1/4" GAS OR ELECTRIC

KIT \$3.95

Chris-Craft

"16" CUSTOM RUNABOUT

BIG 1" — 1' Scale — 16" Long 6 1/2" Beam

Hull is mahogany planked with accurately fitted veneers requiring no fitting. Berkeley's new "Jig-Plank" holds the entire structure in perfect alignment during assembly.

Imagine a big, beautiful, mahogany, true-scale Chris-Craft for such a low, low price. A model boat that has everything and goes up and moves!

This kit includes all fitted mahogany planking, basic internal structure, plastic windshield and deck hardware fittings. A pleasure to assemble!

OUTBOARD GAS OR ELECTRIC MOTOR

buy **BERKELEY** at your local dealer!

If no local dealer is convenient, mail orders will be filled by Berkeley Model Supplies, Dept. AT., West Hempstead, N. Y. Please include 25¢ packing & postage.

"BLUEBIRD"

CO-2 POWERED JET BOAT

BIG 1/2" Scale — 10" Overall Length

Here is the first all-plastic operating Jet Boat. Sailed after the world-record breaking speed boat that achieved over the 200 miles per hour mark, this Great Berkeley Model will thrill you as the CO-2 Jet Camille floats it up to 80 m.p.h. leaving a foaming wake over a 200-foot course.

Kit Includes all Parts Injection Molded and Ready to Snap Together. Only Takes a Few Minutes to Assemble.

\$1.50

Above: New models from a 1956 advertisement.

Aerotrol radio control

As early practitioners of radio control, Berkeley were able to provide their own brand of radio control equipment from the early 1950's under the Aerotrol name. Their Super

Aerotrol was typical of radio control practice at the time: A carrier-wave transmitter that used a 3A5 valve in a push-pull circuit with only about six other components, and an equally simple receiver with a XFG-1 valve.

Originally designed for the 50 to 54 MHz band, it was modified for 27MHz when that was made available. Sequential rudder operation was achieved using the Super Aerotrol self-neutralising escapement. The Super Aerotrol equipment was made available as either a kit, with all parts available separately, or assembled ready to operate. In latter form the cost was US \$49.95 in 1956, plus the batteries and escapement, the equivalent of about US \$450 today. A more advanced multi-valve Tone Aerotrol, designed by Dr. Walter Good, was available from about 1955.



"TONE-AEROTROL"

As easy to operate as a Home Portable!

100% Dependable Radio Control...

Tone Control on 27.225 mc. (Examination Free)
Easy to adjust, dependable, trouble free operation.

"TONE-AEROTROL"

27.225 MC. TRANSMITTER \$49.95

A High-Low Power Output control switch gives range control. Pilot light positively indicates operation. Metal carrying case with handle measures 8" x 10" x 10". Weighs 15 1/2 pounds. Comes complete with Crystal and Whip Antenna. (Less Batteries)

Three years of exhaustive field testing by Doctor Good and Joe Dale have made it possible to produce the finest Radio Control equipment on the market, regardless of price. Place your order with your local dealer today, and be assured of immediate delivery.

Designed by: Dr. Walter Good

27.225 mc.
4 1/2 oz. 2 1/4" x 2 1/4" x 3"

"TONE-AEROTROL" RECEIVER

Low battery drain. Three tubes operate for long periods without any adjustment. Receiver complete with a 5000 Ohm relay.

Receiver is not apt to pick up R.F. Carrier from wrong transmitter as signal must be modulated at audio frequency. Perfect for R.C. Novice flyers.

\$29.95

SINGLE TUBE "SUPER AEROTROL" STILL AVAILABLE!

No License Examination Required and Radio Control Accessories!

Crystal Controlled Dust Core Tuned

27 mc. "SUPER AEROTROL"

Combination "Super Aerotrol" TRANSMITTER-RECEIVER Kit (less tubes).....	\$29.95
"Super Aerotrol" 27mc. RECEIVER Kit (less tube).....	13.95
"Super Aerotrol" Crystal Controlled 27mc. TRANSMITTER Kit (less tube).....	19.95
Assembled, Ready-to-Operate "Super Aerotrol" 27mc. TRANSMITTER & RECEIVER.....	49.95
"Super Aerotrol" ESCAPEMENT — Self Neutralizing — Assembled Only.....	3.95
"Super Aerotrol" ESCAPEMENT — Self Neutralizing — 2 oz. Weight.....	7.50
Super Sensitive Adjustable Contact RELAY — 5000 Ohms — 2 oz. Weight.....	3.50
0-3 MILLIAMMETER — Manufactured for use with "Super Aerotrol" Receiver.....	2.75
0-50 MILLIAMMETER — Manufactured for use with "Super Aerotrol" Transmitter.....	3.50
XFG-1 TUBE — For Installation in "Super Aerotrol" 27mc. Receiver.....	2.25
3A5 TUBE — For Installation in "Super Aerotrol" 27mc. Transmitter.....	2.25
72 Page Book on "RADIO CONTROL for Model Aircraft and Boats".....	1.00

NEW RADIO CONTROL BOOK

ESCAPEMENT

RECEIVER 2 1/2 oz.

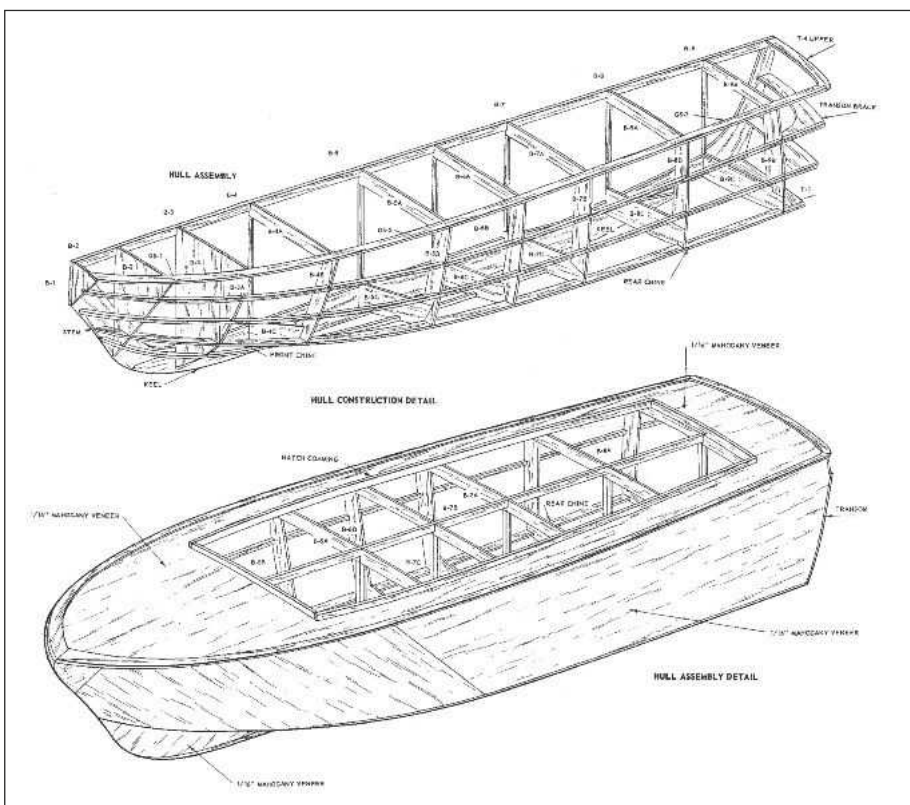
TRANSMITTER Crystal Controlled

buy **BERKELEY** at your local dealer!

If no local dealer is convenient, mail orders will be filled by Berkeley Model Supplies, Dept. AT., West Hempstead, N. Y. Please include 25¢ packing & postage.



Above: Three versions of the Berkeley Wonder Motor, geared and non-geared.



Left: Hull construction in two halves, from the Chris-Craft Constellation kit.

Chris-Craft '22' Express Cruiser

Berkeley model boat kits are a rare find now, but I have an example of Kit No. CC-8, the Chris-Craft 22 Express Cruiser, which was released in 1956 and is to 1:12 scale, producing a 22 inch (560mm) model of the 22 foot Chris-Craft original. The full-size plan credits the design and drawing to Henry

Struck, with kit engineering by Bill Effinger. Small print is used for the building and operating instructions on the plan itself, which is clear and easy to follow. It shows a Super Aerotrol radio control installation with rubber-driven escapement to operate the rudder and a choice of internal combustion inboard (O & R Midget Mariner) or outboard (K & B Allyn Sea Fury) or an electric inboard motor (Berkeley's own Wonder Motor). The latter choice would

have resulted in very feeble performance as the Wonder Motor was not really up to the job of propulsion and a Pittman motor would have been better.

Six sheets of nicely die-cut but unprinted balsa (1/8 and 5/32 inch thicknesses) and one plain sheet are in the box plus, surprisingly, five sheets of die-cut 1/16 inch mahogany. This latter gets used for the hull skinning, deck and cabin sides. It is surprising it is used for the hull, as the full-size boat hull was painted and the mahogany tends to be wasted here. The construction is generally more complex and much lighter than equivalent British boats kits using plywood. There's the usual complement of strip wood, flags, clear glazing material and a very crude rudder stamped from galvanised steel, but no stern tube in light of the differing power options; metal deck fittings are mentioned, but unfortunately missing from my kit. Overall, I find this would make into a very smart looking small model boat, most suited to inboard electric power.

Berkeley's demise

Perhaps having over-extended themselves, the Berkeley Models company went bankrupt in 1960. There was an attempt to rescue the company with a new partner, Duke Fox, of the Fox Engine company. The kits were re-issued for a time, at first under the Berkeley name then under the Fox name, but the partnership couldn't be made to work, and it effectively was all over by June 1962.

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● Model Boats, is a magazine for anyone with a passion for model boating in all its various forms, be it static models, radio controlled scale, fast electric and internal combustion engine models, as well as steam driven craft. Model yachting is not forgotten with contributions from leading model yachtsman.

● Each regular issue has as its foundation, regular columns from a selection of respected internationally known enthusiasts on a range of subjects and the 100 page Winter Special Edition published in late-October of each year always includes at least one extra special plan feature for a new model boat and articles that support the model enthusiast in their endeavours.

● The magazine also has a regular Readers' Models section, because this is the part of the magazine where readers can showcase their models, and this is coupled with Around the Clubs, another popular section where clubs let the readership know what they are doing, when and where.



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Richard Simpson's
series on model
steam plants

Boiler Room

PART Seventy Eight: Affordable Steam

PART 2

After discussing the plans for this Affordable Steam project last month and ordering the three major components, all I had to do was wait for the items to arrive and then start to have a play. The Krick Anna kit, the 'Tiny' engine and the Tony Green Steam Models boiler all duly arrived safe and sound, and very rapidly, and the next step as always, was to plan the building of this model boat. The Krick Anna was designed for a Cheddar steam plant, so using the proposed boiler and engine combination was not going to be quite that straightforward, so there would almost certainly be a degree of 'playing around' to get things just where they needed to be. Anyway, the first job was to open the packages and see what we had and what looked like the best arrangement.

Krick Anna kit

Opening up the box revealed a fairly comprehensive kit for just £99 with a full-size plan, instructions, vac-formed plastic hull, a number of pre-cut plywood sheets of varying thicknesses and a bag of hardware. The kit includes everything you should need, including the rudder components, propshaft and propeller, so all you have to do is provide the steam plant, radio gear and the usual glues, paints and of course, the working time.

One thing that could be better, as seems to be the case too regularly nowadays with all sorts of things, is that the instructions are a bit weak. The biggest challenge is the fact that none of the pre-cut ply parts are identified, so one has to go through the process of identifying the number of the carrier sheet from the parts list, and then try to identify the individual parts on each of them. It isn't the end of the world, but this should be done in advance by the manufacturer. It is also apparent following a good look through the parts, that there is plenty of scope to personalise the model by adding planking to the deck, lining the inside of the hull with wood and using brass fittings etc. The aim was to build straight from the box, but this kit can actually be the basis of a very attractive model without too much additional input. I think that for less than £100 (UK) at the time of writing, this kit has a lot to offer, **Photo 1**.

The Tiny steam engine

One does not have to say this, but it is an incredibly aptly named engine. It came perfectly wrapped in a plastic tub, looking like it couldn't possibly hold a steam engine. I was very surprised though when I opened this and took out a perfectly formed little single cylinder single acting oscillating engine. Small it may be, but the standard of machining is

excellent and the engine turned over perfectly smoothly by hand. The Standard is pre-drilled with four holes to enable mounting on a base and stubs are fitted to it ready to take silicone tubing for the supply and exhaust steam.

When you consider the cost of an average twin cylinder double acting engine nowadays can be anywhere in the region of five to six times the cost of this engine, its simplicity and charm really does seem to be more than just appealing, **Photo 2**.

The Tony Green Steam Models boiler

The last of the three principal components is the Tony Green Steam Models boiler, designed of course to be used with his range of Unit Steam Engines (USE). On opening the packaging, I was impressed with the reasonable size of the boiler and the quality of manufacture. It has a loose fitted cover, which simply drops over the top when the boiler is in use to direct the heat around the top of the boiler and it lifts off when you want to light the boiler. You could even very easily clad this cover with wood for a realistic impression of a normally clad boiler, but in polished brass it looks pretty smart anyway and it even comes with a test certificate, which is not always included with more expensive boilers, **Photo 3**.

The real revelation with this boiler though, is the fact that it hinges. I have seen modellers at the pondside trying to get a tray of lit methylated spirits back into their model below the boiler without it either blowing out or spilling into the bottom of the model. This is certainly never the safest of arrangements and even solid fuels need to be lit with some sort of long wick that would go below the boiler to access it. This Tony Green Steam Models boiler really is quite something though, and it amazes me that no-one has ever come up with something similar before. You simply lift the boiler up on its hinge at the rear, drop two solid fuel tablets in, light them and drop the boiler back in place. Very simple, very convenient and very, very safe, **Photo 4**. You even fill the boiler via the safety valve bush until it comes out of the level plug at the end,



Left: Photo 1. The Krick Anna kit is complete with propshaft and tube, a propeller, rudder stock, servo horns and all the wood, fittings and materials, apart from the paints and glues needed to build the model.

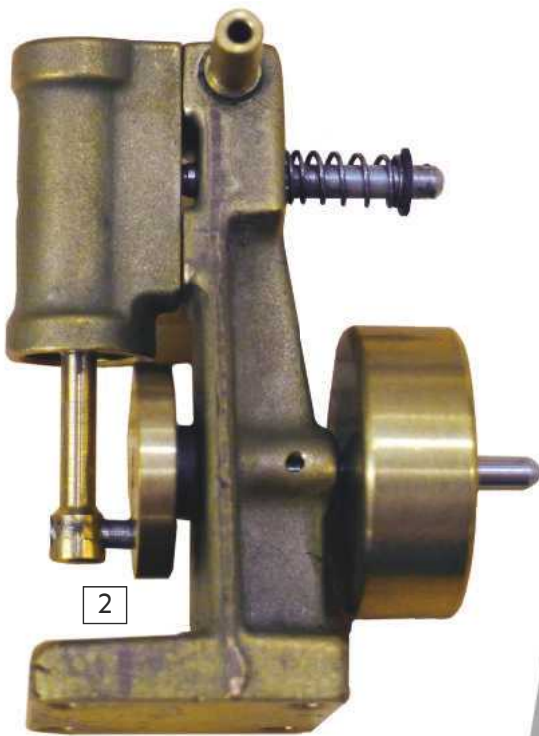


Photo 2. 'Tiny' certainly lives up to its name. It is beautifully machined and was found to spin perfectly smoothly with a noticeable compression, even before any running-in or oil was applied. It should comfortably power Anna, but being single cylinder and single acting, it will not be reversible.

Photo 3. The Tony Green Steam Models boiler as it arrived. Just the right size for the job, but with the huge advantage of being safe and easy to refuel as all you need is a supply of solid fuel tablets to hand. Even the polished brass cover has a protective film over it, which is a nice touch.

so you are assured of always filling to the correct level. The boiler is also mounted on an extended base, pre-drilled for a USE steam engine, but unfortunately this does not match the drillings in the Tiny engine. In summary then, I am really looking forward to seeing just how this boiler performs in Anna, and when using it at the pondside.

The first auxiliaries

There were always going to be one or two other bits and pieces required for Anna, but in line with the philosophy of the build, these parts had to be inexpensive, readily available in the UK and not looking really cheap! To plan the layout of the main items it would certainly be a good idea to have the separator to hand. There are some who may try to advocate not using a separator, however in this day and age of 'Environmentally Friendly', the last thing I want to do is to give people a reason to complain about model steam boats and collecting the oil and condensate from the exhaust steam is a 'Yes, Yes' requirement, at least for me. A lovely little separator, designed to use the same silicone tubing will be used on this engine, has been obtained from Cleveland Steam, costing a princely £16, and that includes enough silicone tubing for the odd mistake or two. While I was at it, a lubricator was also

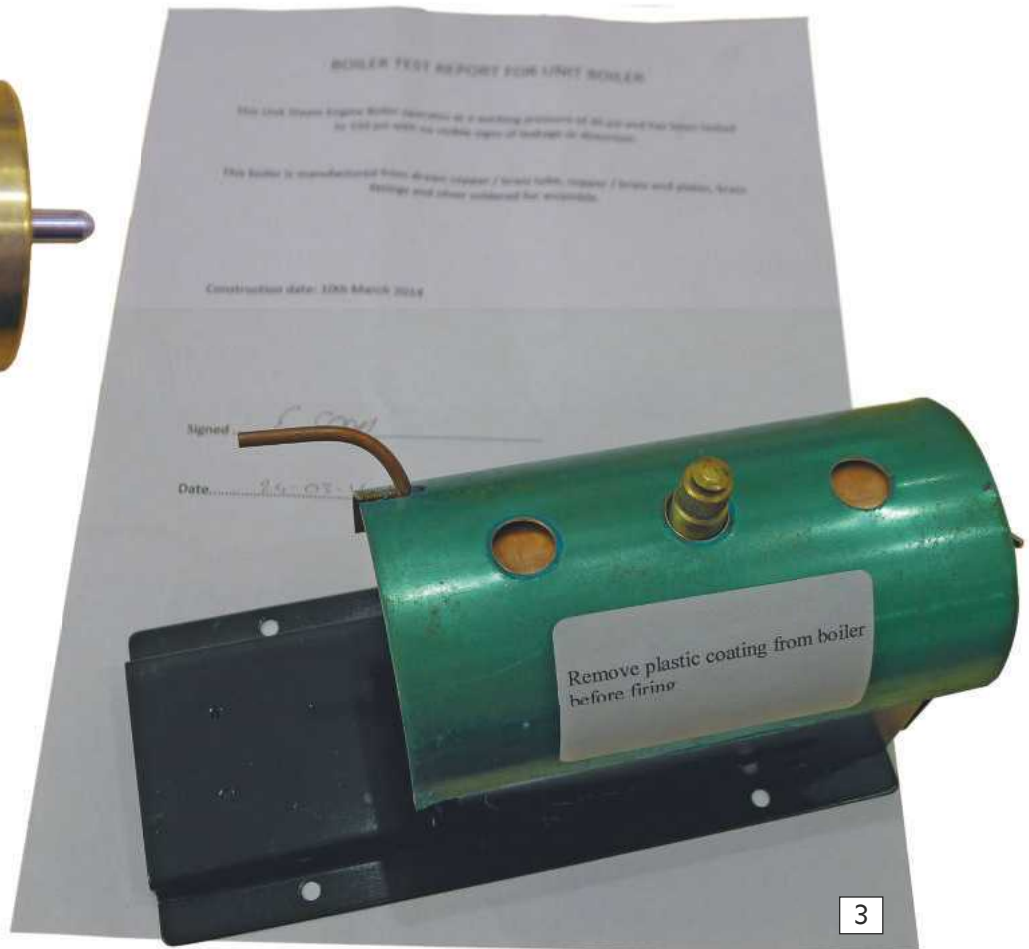


Photo 4. Showing off the great advantage of the Tony Green Steam Models boiler. It can pivot to a vertical position, allowing replacement of the solid fuel tablets quickly and easily, as well as filling the boiler at the same time through the filling cap on its end.

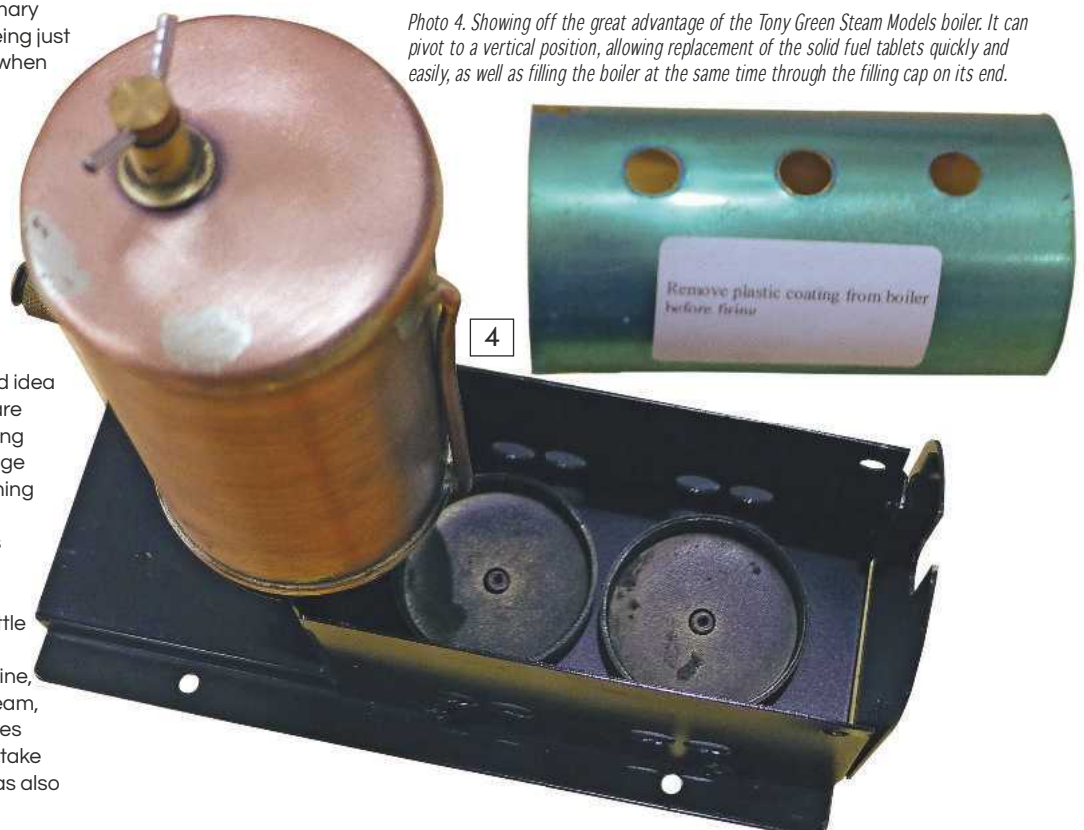


Photo 5. A displacement lubricator is essential for smooth and reliable operation of the engine, but a separator is also a component that should be incorporated in a steam plant. It will help keep the model and the pond clean, and is so cheap nowadays that it is a 'Yes, Yes' requirement.



Photo 6. Only a few basic tools and glues are needed for this project. The cyanoacrylate superglue is useful in certain circumstances for temporary 'grab', perhaps as the epoxy glue sets? Metal blocks are useful tools for holding things square while glue sets and should be included in your tool kit wherever possible and never, never, underestimate the value of having the best quality sharp knives.



purchased from them for another £12, which I have to say was a bargain for the lovely little brass unit that arrived, **Photo 5**.

At this point, the decision was made that we could run without an isolation valve on the boiler. As the plan is to simply run the boat until the solid fuel tablets run out, there should be no need to isolate the engine. The lubricator can be topped-up before each run and left until the boiler runs out of 'puff'. That was the thinking anyway to start with, but an isolating valve to the boiler for initial steaming-up might still be good idea. Cleveland Steam do a nice little lubricator with a built-in valve, but the plan is to run Anna a few times to see if this is really necessary.

Cost so far

So now the running total for the project had become:

Anna kit:	£99
Tiny engine:	£45
USE boiler:	£105
Separator:	£16
Lubricator:	£12
Total:	£277

After a good look around and a play with the bits it quickly became apparent that the hull had to be built to a stage such that the propshaft, inner floor and main top deck, were all fitted to get the best idea of just

what space there would be for the boiler and engine. Preliminary test placements suggested that almost certainly there would not be enough room for the Tiny engine mounted on the boiler's baseplate, so there was going to be a bit of extra cutting and moving around required.

And tools?

The instructions mention a number of different types of glue that should be used in the building of the Anna. Some of them I had never heard of, and some of which I was not convinced would be the best solution. I have always been a great fan of epoxy glue such as Araldite, and while the fast cure variety is useful around less water-exposed upper parts, around the hull and its penetrations the slow cure should be used as it is significantly more impervious to water. This is probably not a big concern when it is going to be painted, but the other advantage is that it gives you lots of time to get clamps in place and allows plenty of flexibility with alignments. Two pairs of tubes were obtained along with a bottle of cyanoacrylate (superglue) for those joints with a more 'instant' requirement and a bottle of wood glue. I am not a great fan of superglue, as I invariably find it seems to hold one's skin with significantly greater tenacity than it holds anything else, but I admit it can be handy for holding things in place while the epoxy then sets properly and much more slowly.

A set square, a few blocks of metal for ensuring a square fit while glue sets and a sanding surface will also be needed and when wooden parts are manufactured by laser cutting, the very hot laser itself actually burns the resin in the wood and effectively seals the edge of a cut. If you want glue to soak into the surface you should always 'dress' the parts on a flat sanding surface before gluing, so having a sanding block is essential, **Photo 6**.

So there we are and next month we will start to properly build Anna.

USS Gettysburg

Dave Wooley presents a mini-gallery of this warship together with a fine radio controlled scale model

USS Gettysburg (CG 64) and her sister ships are designed to protect carrier battle-groups from all threats coming from the air, surface, or sub-surface, whilst also being capable of striking land targets. She is one of the Ticonderoga Class of guided missile cruisers (CG). Her primary mission is to be prepared to conduct prompt, sustained combat operations at sea in support of a carrier battle group or amphibious assault group, protecting those groups from saturation attacks and contributing to power projection ashore. She was first commissioned in June 1991 and has a displacement of approx. 9600 tons full load, is 567 feet (173m) long, 55 feet (17m) beam and has a draught of 33 feet (10m).

As of 2010, her armament included: Mk. 41 vertical launching system standard missiles (MR); Vertical Launch ASROC (VLA) missiles; Tomahawk cruise missiles; Mk. 46 torpedoes (launched from two triple mounts); Two Mk. 45 Five inch 54 calibre guns; Two Phalanx close-in-weapons systems and two SH 60 Seahawk (LAMPS III) helicopters, primarily for anti-submarine use.

Radar systems include the all-round and integrated SPY-1B fixed phased array Aegis defence radar system, interfaced with the wide range of weapons for the

tasks allocated to these warships. Other radars include the SPS-49 Air Search Radar, SPG-62 Fire Control Radar, SPS-55 Surface Search Radar and an SPQ-9 Gun Fire Control Radar. There is also a full sonar suite carried by USS Gettysburg. Complement is normally 33 officers and 327 crew, but this can vary as operations might demand.

The model

The picture of this fine model was taken by Dave Roland of the warship model group TF 72 (Task Force Seventy Two) in Australia

and shows the 1:72 scale version of the USS Gettysburg built by Wolfgang Nebart using some mouldings and parts supplied by Allan Pew of APS Mouldings.

APS Mouldings (in Australia) do not have a website, but can be contacted via email: apsmods@bigpond.net.au.

The photograph of the full-size USS Gettysburg is from official US Navy sources.



Model Yachting Association News



Roger Stollery updates Model Boats readers

The Model Yachting Association (MYA) looks after radio and free sailing in the UK and its Council makes the decisions that make this organisation the envy of the world. The new faces on the 2017 Council, include the Chairman, Terry Rensch, Vice-Chairman Phil Holliday and the Digital Communications Officer, Austin Guerrier, who have joined the remaining members of the team together with Darin Ballington moving to one of the most important Council posts as the Racing Officer. His role involves the organisation of the radio sailing calendar for 2018, coordinating events for the nine affiliated classes and the 150 club Open, District, Ranking and National Championship events, as well as chairing committees dealing with the racing rules, which the world authority for sailing, World Sailing, change every four years following the Olympics.

The first 2017 MYA Council Meeting

This was a great success with the new members injecting enthusiasm and opening up a positive approach to promoting the sport. Terry, in particular, wants to get club

members more involved in the MYA. Apart from racing matters, the District Senior Measurers and myself as Technical Officer form the Tech' Team and we work in the background with the 120 measurers to sort out any rules issues in the international classes of; International One Metre (IOM), Marblehead, 10 Rater and A Boat, as well as the MYA's own national classes. This involves making sure that the racing is fair, with the 'official measurers' helping owners to keep their boats complying with their class rules.

As the MYA Technical Officer (Roger Stollery), I am reporting on some of the current technical issues after each Council Meeting as a way of introducing news from the classes. Currently, the Tech' Team is working on two national classes, namely the elegant 6 Metre yachts and the 36 inch class box boat (it has to fit into a standard box) and updating the relevant class rules.

MYA 6 Metre Class

The MYA's 6 Metre class is a small scale version of the full-size rule first established in 1906 and it produces elegant boats about one and a half metres long. The rule



ABOVE: Peter's 1979 WHITER SHADE OF PALE, a vane sailing 36 inch design still available from the MyHobbyStore Plans range as Square One, MM1104, and is suitable for r/c.



ABOVE: Terry Rensch, the 2017 MYA Chairman.

LEFT: The September Chase meeting - Six Metre match racing.



encourages overhangs, which give the appearance of an elegant classic yacht of yesteryear and attracts those who like this traditional shape. Over the last couple of seasons, the class has been revived by its class captain Mike Ewart, and he is now putting on lots of events to support this revival. The MYA Tech' Team is currently involved with changing the class rules to close a loophole that has recently been found, by updating the rule with the latest World Sailing Equipment Rules of Sailing definitions, plus an all new electronic registration system is being introduced.

6 Metre and 36 Inch Class rule changes

Although the MYA is an association of clubs, we are able to contact our members and specific boat owners very easily, because boat ownership is on a database created by an annual club return. This allows for owners of boats, where there may be a specific class



ABOVE: Darin Ballington, MYA Racing Officer.

issue, to be contacted direct for comment on anything new and to vote on proposals to change the relevant rule. As result of this, 6 Metre owners will shortly be voting on their new class rules and bringing them up to date in the 21st Century.

Rules for the 36 Inch Class are also currently under discussion, because although the hull and appendages have to fit in an open top box 940 long x 229 wide x 279mm deep, there is one other restriction on an otherwise totally free rig design. The relevant

rule has been going since the 1930's, but some time ago a restriction was introduced on the spar materials, limiting them to timber or aluminium in order to limit the potential cost. Nowadays however, carbon tube can be just as cheap and is available in a greater range of sizes and with numerous suppliers than aluminium. It will be interesting to see whether the 36 Inch Class Owners Group vote to update their class rules to reflect this for the future.

This 36 Inch class of r/c model yacht is a great little fun boat and hard chine designs can be built very easily using basic plywood construction. Indeed, Fred Shepherd's very comprehensive design SQUARE ONE is still in the MyHobbyStore plan service, Ref: MM 1104. The most famous of these, A WHITER SHADE OF PALE, is shown in the photograph being sailed by a six-year-old Peter Stollery, who went on to become an IOM world champion. This class is also still free-sailed under vane gear with spinnakers etc. at hard edged lakes such as those at Birkenhead, Bournville, Llandudno and Gosport, as well as being raced under radio control on other lakes throughout the country. Lots of top UK sailors have learnt to sail and had a great deal of fun sailing these little boats in their younger days.



ABOVE: What is all about - 36 inch model r/c yachts racing at Guildford in 2016.

Conclusion

As well as involving members to take part in the decision making processes, Terry Rensch is keen to fill the vacant officer posts to complete the new forward looking MYA Council. As a long term Council member I can confirm that Council Meetings can be very rewarding and a good pay-back for the efforts made between meetings. Members interested in making a contribution should apply to the Secretary to Council, Chris Cook, email: cookcsn@sky.com

Information supplied in April 2017 by
Roger Stollery

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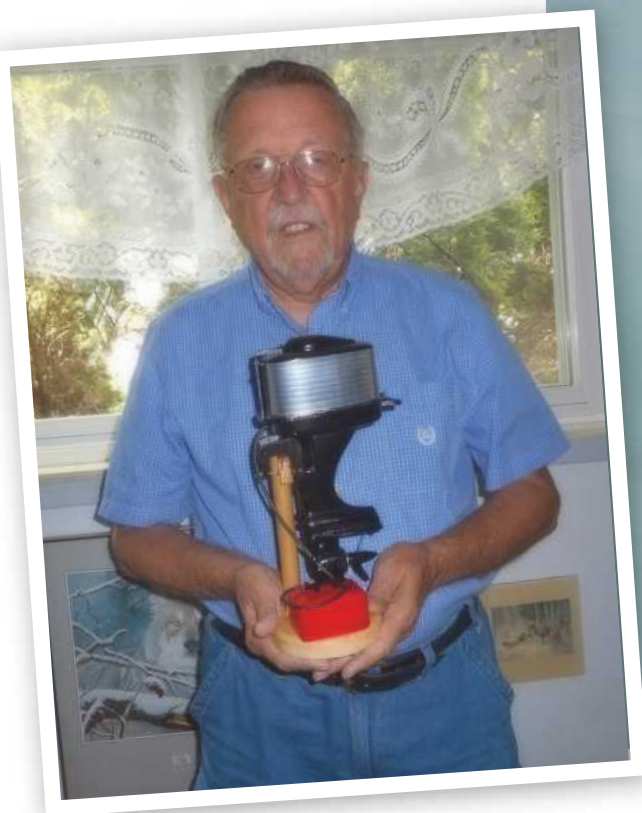
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Mercury Outboard Motor

Leonard Treppa builds something a bit different



Left: Leonard Treppa and his decorative outboard motor.

Living in Michigan, USA and wanting to make something a little different from yet another model boat, and having possessed an electric 'toy' Mercury outboard since I was thirteen years old, **Photo 1**, the idea grew of using this as a pattern for a larger decorative model. All its constituent parts were doubled in size and templates prepared, as in **Photo 2**. Most of this larger, albeit non-working, outboard motor is made from White Pine, with the rest from two different thicknesses (1/16 and 1/8 inch) of plywood, **Photo 3**.

Initially, all the parts were cut out and then

carved, shaped and sanded as needs be before being painted gloss black. The entire outboard motor is pinned together, but not glued using 1/8 inch dowels, so that it can easily come apart. For the top cowling cover, very thin aluminum sheet has been used, scored to give the impression of an imprinted shape. The fuel tank is just a block of wood shaped and painted gloss red, and the fuel gauge holder and handle are painted gloss black. For the fuel gauge itself, a clear bead has been used and the fuel line is the thinnest possible tubing from the local auto parts store. The propeller's central boss has been

turned on a lathe and its blades are of cut and shaped aluminum. The priming bulb was also turned on the lathe and painted black. The completed outboard motor swivels back and forth and tilts up and down, just like a full-size motor, but of course it does not function.

Anyway, the point of this little homily is that it demonstrates you can easily make something decorative and maritime for the home rather than just another model boat if you don't have another major project in progress, and this was made 100% from scrap wood in between other jobs.

Leonard Treppa – February 2017



Above: Ready for the mantelpiece!



Above: The principal measurements of the small electric outboard were all doubled to make these templates.



Above right: White Pine and plywood was used for the individual parts.



Above: Black is the predominate colour, except for the fuel tank.



Left: The old 'toy' electric outboard that was used as a half-size template.

Test Bench

Model Boats looks at new products

Attention-Manufacturers & Distributors

● These pages are open to you - your shop window to bring to the attention of our thousands of readers, new products - kits, books, videos, engines, R/C gear, motors, anything that could be of interest to model boat builders. Send your information initially to

Model Boats Test Bench, PO Box 9890, Brentwood, CM14 9EF - or ring the Editor on **01277 849927** for more details.

You cannot afford to miss this opportunity!

Expo Tools 2017 Catalogue

This recently arrived in the Editorial Office, and a very comprehensive catalogue it is too! Expo Tools are perhaps unusual in the current 'online' world in that they produce this printed full catalogue which is free, as well as having an excellent online website. Products offered include everything the model boat builder may possibly require with tools, glues, building materials of all types, paints, fittings, model boat hardware and much more, all listed in the

catalogue. It is particularly useful because it is comprehensively illustrated in colour, with detailed descriptions of the products available. For example, this is very useful with miniature tube and rod such as those from Albion Alloys, because you can easily see which size will slide inside another.

Orders may be placed online, but Expo Tools also sell via local model shops and those are listed on their website. Orders in the UK for more than £50 are postage

free and may be placed online or by telephone, but having the printed catalogue in front of you in the workshop is really useful, so all credit to Expo Tools for offering it free to readers, either by ordering online or by telephone.

Contact details are:

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(Mon to Fri 9am to 5pm)

Warehouse:

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British Warship Recognition

The Perkins Identification Albums – Volume III: Cruisers 1865 – 1939, Part 1

Written and illustrated by Richard Perkins. Hardback, 192 pages, 403 x 311mm*. ISBN: 9781473891456. Price (RRP) £60. Published by Seaforth Publishing, an imprint of Pen & Sword Books Limited, 47 Church Street, Barnsley, South Yorkshire, S70 2AS. Tel: 01226 734222, website:

www.seaforthpublishing.com. Available direct from the publisher or through the usual retail outlets.

The Identification Albums compiled by naval photographer and collector Richard Perkins. comprise more than 5000 exquisitely detailed coloured drawings of every major warship built between 1860 and 1939. One of the greatest treasures of the National Maritime Museum, they are bound in eight large volumes and have, over the years, offered an unparalleled

source of information for the museum's staff. Although conceived for the purpose of identifying ship images, what Perkins albums actually provide is the most thorough and comprehensive record of British warship appearance ever achieved.

A full review of Volumes I & II was featured in the December 2016 issue of Model Boats (Crow's Nest, Page 64). This new Volume III Part 1 is now available and details Royal Navy Cruisers



from 1865 to 1939. Part 2 will be published later this year in late June.

**Please note that this is a large 'coffee-table' type of book.*
Book Review by John Deamer

Thames Tugs in Colour

Written by Andrew Wiltshire. Softback, 80 pages, 235 x 157mm, 112 colour photographs. ISBN: 9781902953823. Published by Bernard McCall, Coastal Shipping Publications, 400 Nore

Road, Portishead, Bristol, BS20 8EZ. Tel: +44(0)1275 84617, email: Bernard@coastalshipping.co.uk. Website: www.coastalshipping.co.uk. Price (rrp) £9.95. Available direct from the publisher at the cover price plus £1 postage or through the usual retail outlets.

This is the latest book in the Tugs in Colour pictorial album series and contains a selection of stunning colour photographs of Thames tugs. The author, tug enthusiast Andrew Wiltshire, acquired a superb collection of colour transparencies from the late C. C.

Beazley who lived in Dagenham, Essex. The slides comprised photographs of all types of shipping including many tugs both large and small taken along the River Thames. One of his favourite areas appeared to be the Royal Docks in the years 1968 to 1972, which brought back many memories for me having served my apprenticeship as a marine engineer in the Royal Docks in the 1960's. The work of several other photographers is also included.

Initially the book takes a look at smaller lighterage tugs, then goes on to concentrate on tugs involved with ship-handling both on the River Thames and within the various dock systems from

the early 1960's right up until 2016.

Each photograph is accompanied by an informative caption that gives us some insight into the specification and history of the tug, including its propulsion, the power output of the engine(s) in bhp, together with where it was built and who it was built for, when it was launched, as well as changes in ownership, current location or, in the case of older tugs, final disposition.

This extremely interesting and informative little book is reasonably priced and a 'must have' for both model boat builders and tug enthusiasts alike.

Book Review by John Deamer



Mooring Post

Low Voltage Electronic Speed Controller Operation for Brushed Motors

Glynn Guest with advice and tips for modellers

The RE 540 brushed motor types are usually found in fast r/c boats where their power and high revving nature can be put to good use. Combined with a rechargeable battery pack in the 7 to 10 volt range and they make a very effective performance package. When you add the fact that these motors are cheap and reliable, it is easy to see why they have been popular with kit manufacturers and those producing RTR (Ready to Run) models.

Sadly, the builders of more sedate models cannot always readily take advantage of these motors. If the model could sensibly accommodate the power, the high rotational speeds would probably prevent their direct coupling to a scale type and size of propeller. Having said that, quite a few modellers have attempted such a driveline which risked, if not promptly produced, burnt out motors, esc's and wiring. In fairness, some kit manufacturers have also fallen into this trap, an example being a kit based upon a canal narrow boat (surely the most sedate of scale model?) which included one of these motors.

Brushed motors have long been the standard power unit for scale models, and still are for many of us, but if the scale modeller wishes to take advantage of these robust and otherwise attractive motors,

then some form of speed reduction may be called for between the motor and propshaft and some with integral reduction gears have long been available, but at extra cost. A cheaper solution can be to buy your own gears or pulleys, but this can be off-putting to those with limited skills or facilities. There is also the possible problem of gears making a noise which might not be in keeping with the type of model being built.

Rewinding?

Some years ago I experimented with rewinding the armatures of 540 motors, replacing the thick and hence high current 27 turns of wire with something like 100 turns of much finer wire. The result was a motor with much reduced speed and power, but enough torque to turn a large scale type propeller using direct drive.

The rewinding process is not magic, but does require an understanding of what you are doing. It would be quite easy to remove all the original thick wire and then replace it with thinner wire, but quite possibly wound incorrectly and soldered to the wrong commutator terminals. Likewise, poor workmanship could result in damage to the wire's thin coat of insulation leading to performance robbing short circuits, if it would work at all. Loose coils on the armature also risk them being thrown off as it rotates, leaving a ruined tangle of wires inside the motor case and hence, rewinding is perhaps not an option for everyone.

Low voltage?

However, there is still a way to tame these motors and safely use them in scale models and that is to supply them with a much lower voltage than that for which they are normally rated. They will still run when supplied with voltages down to two, or even less with a much reduced speed, but still a quite respectable torque. This method has been used in a couple of my models, the last one being the Ogdensburg, based on an American river ferry (Model Boats, June 2013). The motor was directly connected to a 2 inch (50 mm) diameter four bladed brass propeller and drove the model at a realistic 2 feet/sec (0.6 m/s).

The only drawback with this low motor voltage was that it precluded the use of an esc (electronic speed controller). These are usually designed to run from 6 volts or greater and often incorporate a BEC (Battery Eliminator Circuit) which eliminates the need for a separate battery for the receiver and servo(s). I used a servo mounted resistive speed controller and had therefore to fit a separate battery for the onboard radio system in that model.

Well, that was what I thought, but thinking about it and the idea came that perhaps an esc could still be used even when using a 2 volt battery to power the motor. To be correct technically I should not say 'battery' since it would be a single cell and a battery is a collection of cells, but we often use both terms. The thinking was that if the receiver was supplied with the correct voltage from a four cell battery pack, it might still operate the esc even if it were only connected to a 2 volt cell to power the motor.

The experiment

Nothing ventured, nothing gained as they say, so the necessary bits were laid out on the desk. First, checking the operation of the transmitter, receiver and rudder servo with only the usual four cell receiver pack connected. This was to prove that the radio side of things was working correctly before the experiment began.

Using one of my oldest esc's (I might have weird ideas, but I'm



not crazy), it was connected to the receiver then the motor and 2 volt cell added. The BEC in the esc was NOT, and I'll repeat it again, NOT switched on. This was to make sure that only the receiver's battery would be powering the electronics.

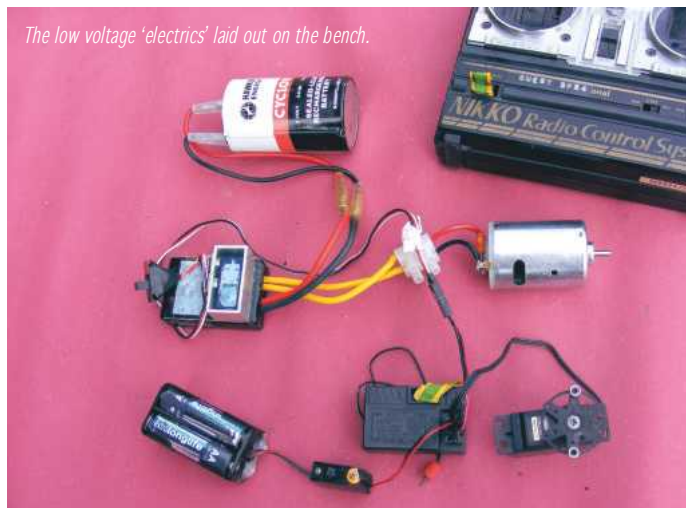
As soon as the radio was switched on, the esc did its usual start-up cycle of relay clicks and the rudder servo worked normally. Pushing the throttle stick started the motor running smoothly up to its now modest top speed, reversing it gave just the same result. To check that this was no fluke, a second test was carried out using a different make of esc, a brand new one which had yet to be fitted into a model. Again NOT switching on the BEC in the esc, only using the receiver battery to power the r/c system, I got the same result. The esc ran through its automatic powering-up cycle this time with a series of flashing lights, then worked perfectly happily.

What have I learnt from all this?

If I have to use a 540 motor or similar, but do not want or need all the power and speed that it would produce on a battery of 6 volts or more, then it's okay to use a lower voltage supply for the motor via the esc, provided the normal 4 cell (4.8 to 6 volts) battery pack is used to power the onboard radio gear and DO NOT switch ON the BEC in the esc, or to be absolutely clear leave the esc switched OFF. I would however recommend that you do a bench test before going to the pond.

Well there you have it - an alternative way to power scale models using cheap 540 motors and that old 2 volt glow plug starting battery (cell) that has been laying idle since the use of i.c. models got banned on your local lake. It does however take a basic understanding of what you are doing and if you would rather remain in your comfort zone, then just stick to what you are happy with.

The low voltage 'electrics' laid out on the bench.



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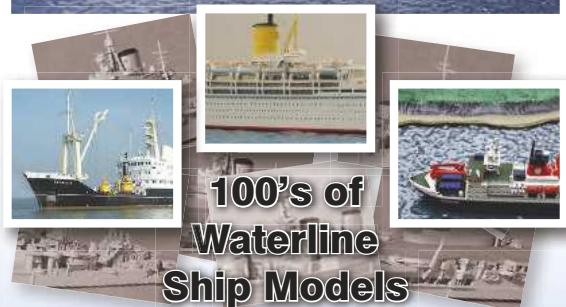
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1:700 SCALE NAVAL DIORAMAS PART 3



Chris Drage explains how to build these miniatures



Above: Operation Halberd 1942 featured the British cruisers Sheffield, Edinburgh and Kenya. These are 1:700 scale models and show what can be achieved just by working on a kitchen table.

Learning to include landscapes

As mentioned in Part Two of this series in the May 2017 issue of MB, one of the most appealing aspects of building in small scales is the amount of 'environmental' detail one can include with a model ship. Having now gained a little confidence in creating harbour scenes with relatively still water, I thought the next challenge would be to include some 'land' in the general mix. The initial idea was to create a scene in port at a quayside with the unloading and loading of stores taking place, but when searching for 1:700 harbour items, I was disappointed as there was not much available and that which was available tended to be Japanese in style. Scratch built jetties and quaysides were a possibility, but again my lack of visual memory and suitable photos combined with the relatively few RN models available at the time of construction, led to a re-evaluation of the situation.

The diorama that is described here (and the one in the next issue), each represent a further step along my diorama-modelling development. They each make use of high quality models that were available from White Ensign Models and both took my modelling

skills to a new level and are as historically accurate as research allowed at the time.

Diorama of HMS Eskimo in 1941

During the Second Battle of Narvik in 1941, HMS Eskimo and HMS Forester entered the narrow Rombaksfjord in search of two German Z-Class destroyers which had taken refuge there during the battle. As they entered, both ships were met by a barrage of torpedoes, one of which went right under HMS Forester. Most of the other torpedoes went wide, but one struck HMS Eskimo on her bow, blowing it almost completely off. She lay motionless in the water while the crew tried closing all the watertight doors and endeavoured to dispatch the rest of the damaged bow section to the deep. HMS Eskimo later ran astern for her whole voyage across the North Sea back to England, a remarkable feat of seamanship by her officers and crew, and after repairs, went on to have a most distinguished war record.

Looking through reference books, I found a photo of HMS Eskimo in the fiord in Norway

in 1941, depicted with her bow completely blown away and one of her forward 4.5 inch gun turrets hanging precariously, and on the brink of falling into the fiord. The key problems with this project were twofold:

- 1** Could the mountains bordering the fiord be successfully modelled?
- 2** Could the damage to HMS Eskimo be successfully replicated?

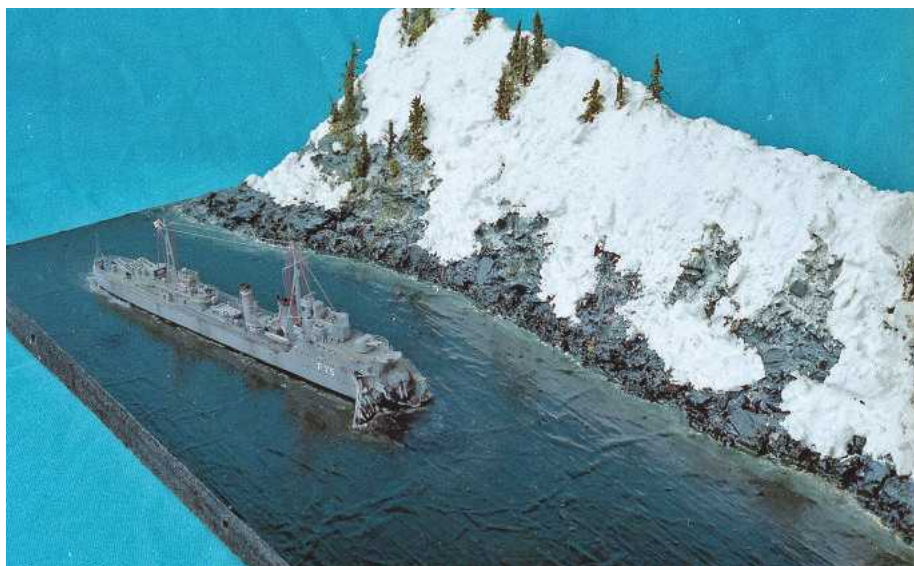
The former was the easier of the two as I had previous experience building N Gauge model railways (1:148 scale), and this involved creating landscapes. With regard to actually modelling 'damage', that was another matter and the model on which this diorama is based around is a White Ensign Models (WEM) HMS Cossack with some obvious modifications. It has to be said that White Ensign Models have changed ownership, but their models are still available, albeit some to special order. Please see the reference section at the end, as Trumpeter also manufacture an HMS Eskimo Tribal Class destroyer (1941) to 1:700 scale that would be suitable for anyone attempting this diorama.

The baseboard and sea

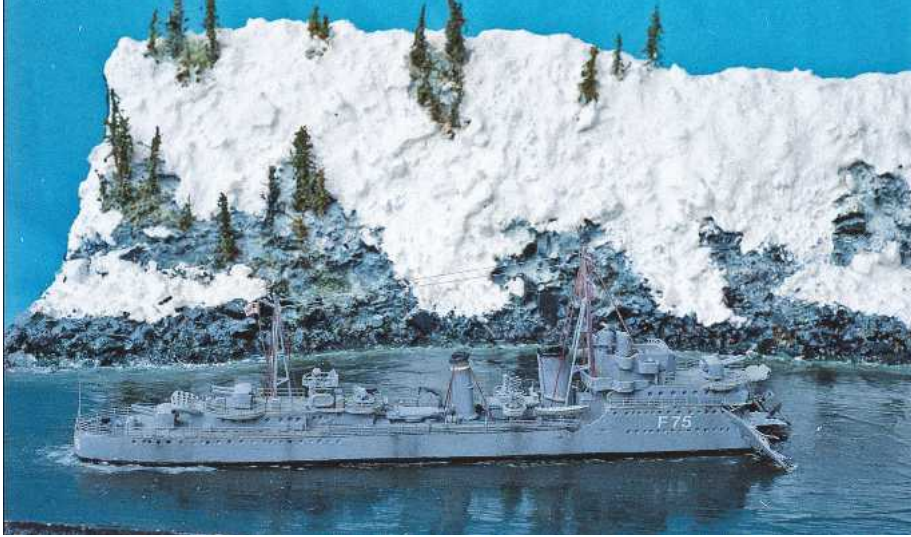
The baseboard is the now familiar 350 x 200 x 20mm (14 x 8 x 0.75 inches) piece of MDF and the seascape crumpled baking foil, glued and partially smoothed out. To this, acrylic paints were applied to create that deep grey-green water seen in fiords, the dark colour giving an impression of their great depth. To complete the seascape, it was given three coats of Tamiya gloss varnish.

Coastline

The bordering coastline and rising mountains were created using small, polystyrene foam sheets glued together rather like a stepped sandwich. When set, these were carved with



Left: This is a general view of the diorama clearly showing the blown-off bow section of HMS Eskimo.



LEFT: A side view of HMS Eskimo and the propellers are still turning immediately after being torpedoed.

a sharp knife to achieve what was to be a small bay or indentation in the coastline. Next, the polystyrene was covered with wet Mod Roc (a plaster impregnated bandage) to smooth the cuts and to add strength to prevent it from crumbling. Polyfilla plaster was added to help roughen up a few places, smooth out others, all enabling rocky shapes to be modelled. Fiord slopes often have scree along the shoreline where large rocks and boulders have fallen and come to rest, and one of the lightest (and cheapest) sources for modelling such boulders is actually real coal. When smashed-up, coal naturally takes on a scale boulder-like appearance. This crushed coal was scattered along the shoreline and fixed in place with PVA glue. The finer crushed coal was also scattered over the mountainside and sprayed with a 50/50 mix of PVA glue and water with a drop or two of washing up liquid added. Railway modellers will immediately recognise this technique as it the same as used to fix ballast to newly laid tracks. Lastly, the rock face was brush painted with a blend of colours to represent dark metamorphic rocks, but the result looked unnatural as it was missing snow, and snow was clearly shown in the reference photos.

Snow and trees

The idea of pouring a thinned Polyfilla mix over the painted rocks was muted. Unsure of how this would work, it was tried at one end and it flowed slowly downwards and simply petered out, leaving a quite pleasing 'snowy' effect. So this idea was progressed, ensuring that it went down the gullies, but leaving any ridges clear. To complete the scene though, some fir trees were needed and once again, the modelling box came to the rescue with some remnants of N gauge trees. Estimating their scale height was not easy, but any tree perched on a rocky slope seldom grows very tall, so the ends of model tree branches were used and trimmed to a conical shape typical of Norwegian Pines. Each was anchored in a small pre-drilled hole with PVA glue. The art involved in this type of modelling is not to overdo anything but to constantly take a step back and evaluate, asking the question; 'Does that look real?' More often than not, the answer is that 'less' is actually more 'real'.

A stern view of HMS Eskimo. The bent metal pieces at the damaged bow are from scrap thin etched brass material. Rigging is fine wire, which is much better at this 1:700 scale than using fine cord.

HMS Eskimo

The resin cast and etched brass HMS Eskimo used the WEM Cossack model as its starting point and fortunately, these two Tribal Class destroyers were virtually identical at this stage of WW2. It was with great reluctance that butchering this lovely little model commenced, as I was not sure how the realistic 'damage' could be made. The bow was sawn off with a fine modelling saw and a burr on a craft drill used to hollow out the hull just aft of the cut. Using the reference photograph, a curled part of the outer hull was made using thin 0.02 inch plasticard (styrene) sheet. To model the internal damage, i.e. the inside of the ship now visible because of the absent bow piece, a variety of off-cuts from the etch brass sheet provided with the kit were used. Being sharp and very angular, these had the correct twisted metal appearance. Piece after piece was added until as much of the visible external and internal damage as was apparent in the photograph was reproduced.

Painting HMS Eskimo

To complete the destroyer, it was given a priming coat of Halford's Plastic Grey Primer and then completed in the overall Admiralty 507B (medium grey) colour scheme. After adding the decals for the pennant number (F75) and funnel band, the destroyer was rigged using 0.01 inch wire to simulate

rope. To ensure that the completed model would blend successfully in the diorama, the waterline was brushed with watered-down toothpaste with more emphasis at the stern, as the propellers would be still turning to keep her from running aground.

Conclusion

This particular diorama took my maritime diorama modelling to a new level. There are few opportunities when the apparent juxtaposition of mountains and ships placed together can form a realistic scene, but using a fiord theme is one of them. It matters not whether you model in 1:700 or in 1:72 scale, the art of diorama building is creating as realistic a scene as the eye can detect. Next time in Part Four of this series, we are continuing the Norwegian theme but this time using WEM's improved HMS Penelope model sporting the most amazing camouflage scheme.

References:

Creative Models Ltd

Website: www.creativemodels.co.uk
Trumpeter 1:700 scale HMS Eskimo Tribal Class Destroyer 1941

Atlantic Models

Website: www.atlanticmodels.net
A variety of supporting etch brass detailing sets and ex-WEM models

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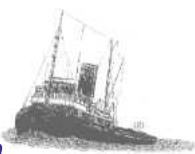
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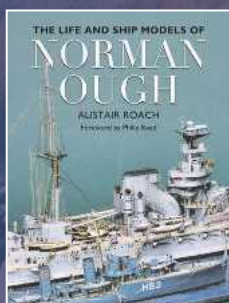


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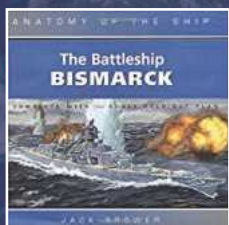
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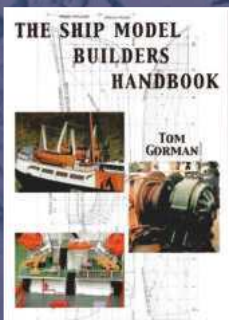


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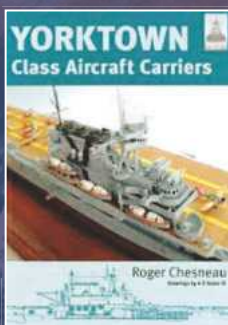


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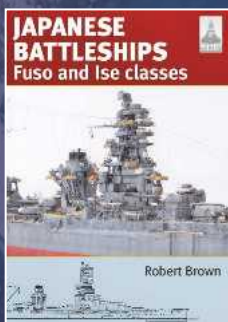
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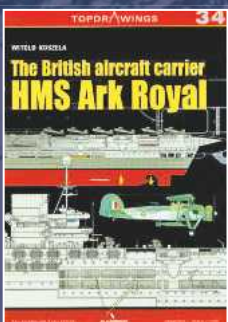


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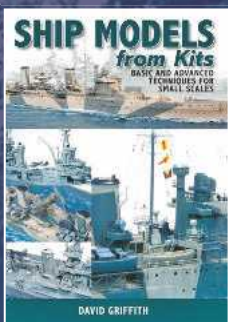


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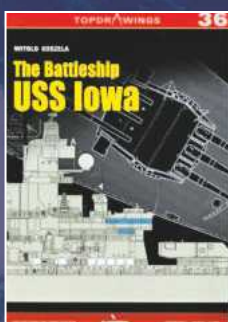
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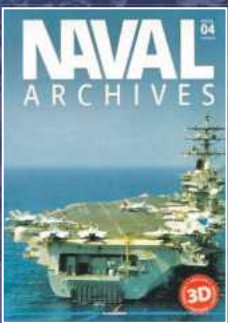
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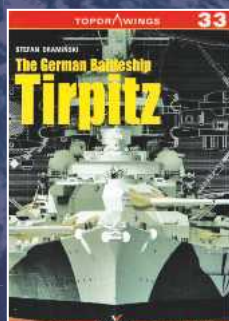
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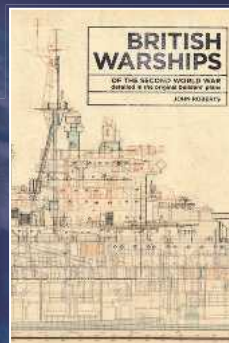
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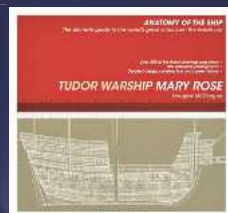
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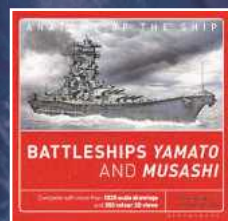
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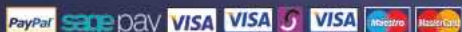
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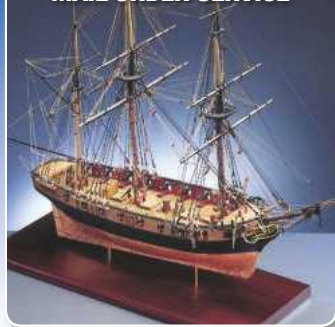
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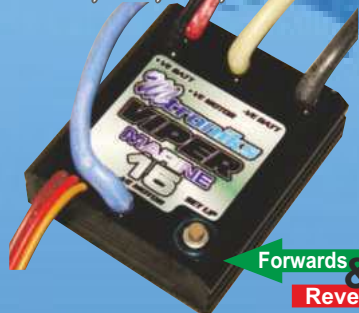
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