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July 2023

Vol.73 No.872



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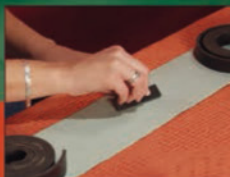
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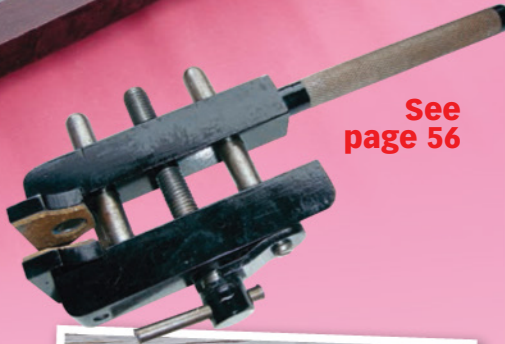
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Just three of the reasons you won't want to miss the August issue of MB

I don't know about you, but as a child I would be glued to the television screen whenever the oceanic explorations made by the late, great Jacques Cousteau and the crew of the *Calypso* aired, so Brian Knight's feature about modelling the recently reintroduced Billing Boats *Calypso* kit for R/C operation brought memories flooding back for me.

I know from conversations with Jens Henrik Thrane at Billing Boats that he is a highly experienced wreck diver himself, so while I am sure the *Calypso* is a real favourite of his, I think he's going to be equally intrigued by Simon Murphy's article on how to totally wreck a model. As a project this is such a great option for anyone with a scale ship/boat that's beyond all hope of restoration and, as you will see, the end result can be totally mesmerizing.

That, however, is not where the out of the ordinary stops this month. I love Peter Koch-Osborne's amazing Amphicar. As some of you may be aware, I formerly edited the title *Model Collector*, so I was already familiar with this quirky little car, its history and the models of it – although up until now I had only ever come across static display scale replicas rather than working versions that could take to the water.

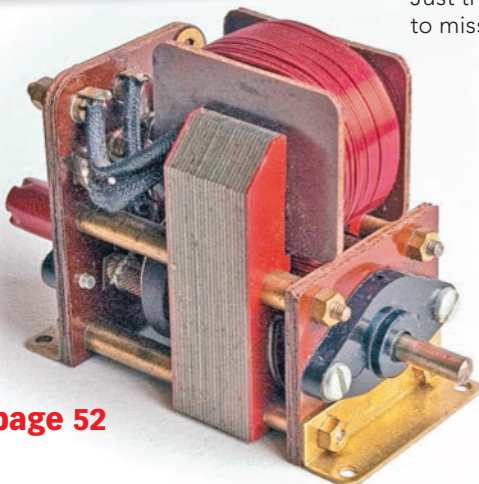
And then things get even more 'out there' with Ashley Needham's latest incarnation of the bumper car boat. A bit like the *TARDIS*, though, hopefully you'll find this issue still manages to pack in plenty for the more traditional modellers amongst you, along with a free pull-out plan and the chance to win one of three smart and snug *Calypso* beanie hats – perfect for when things get a bit breezy pondside.

Enjoy your read!

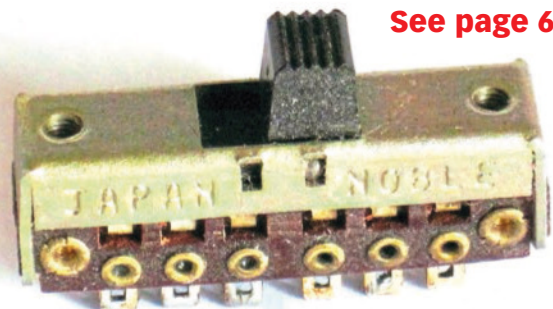
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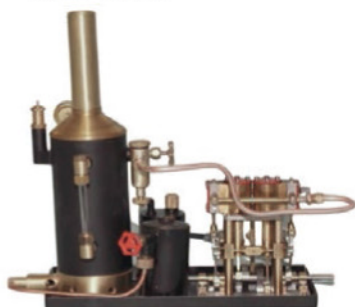
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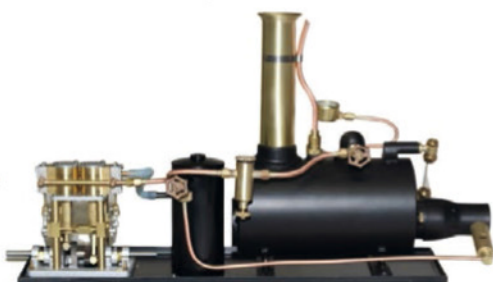
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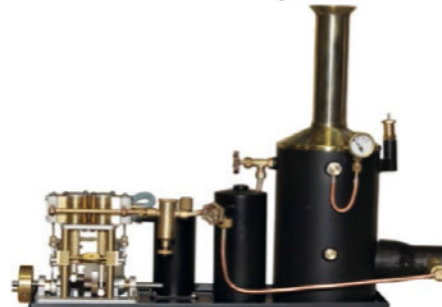
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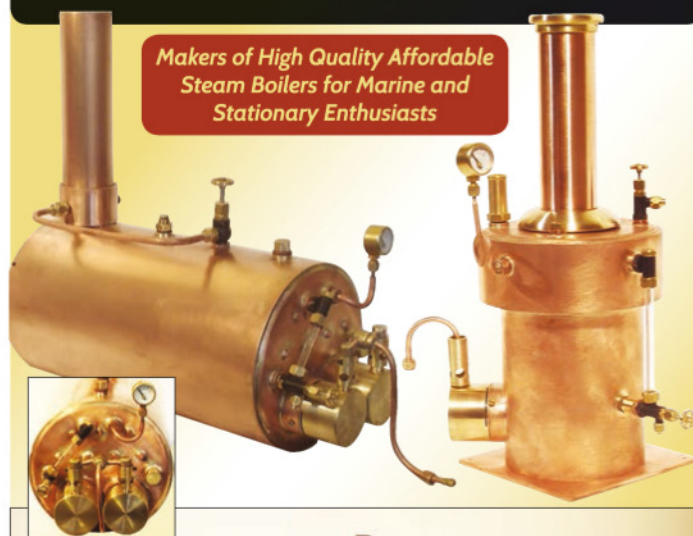


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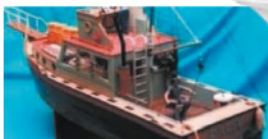
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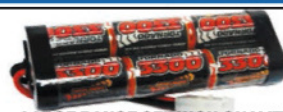
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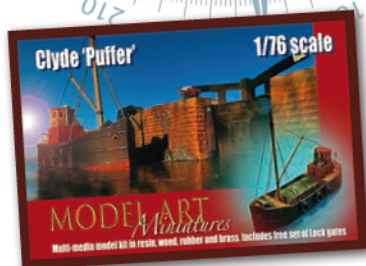
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Compass 360

If you have a news story for these pages, please contact the Editor, Lindsey Amrani, via e-mail at editor@modelboats.co.uk



Left: Box artwork for the new Clyde Puffer, which will be available in several versions (see news story for more details).

Right: The three different versions of Model Art Miniatures' Bristol Canal Tug, inspired by and based on the preserved Mayflower.



Below: Based on 55ft modular vessels and sold as a two model set (one with sheeted load, the other with an exposed load), these Canal Barges from Model Art Miniatures will soon be joined by a more modern extended cabin version.



New from Model Art Miniatures

Industrial model making company Model Art Studios (www.modelartstudios.co.uk) has announced the launch of new range of 1:76 scale waterline ships/boats, complementary buildings and harbour installation components. Developed and produced entirely in the UK, all the items in this Model Art Miniatures branded range will be made available in both kit and ready assembled/pre-painted form.

As moulds are renewed, the certificates of authenticity issued with each product (in kit or finished form) will reflect the limited number and nature of each mould's production run.

Model maker Duncan Howarth, whose career has spanned 35 years and encompassed countless commercial/industrial models and the publication of numerous subject-related books and magazine articles, explains: "Being an illustrator and industrial artist/designer I have always been captivated by scale models/dioramas, so being asked to collaborate on this completely new Model Art Miniatures range has been a privilege and a thrill.

"As a team we sat down and took a good hard look at precisely what, in this mass-market model economy, was missing. As a result, we came up with an extensive range of multi-media models compatible with dockside dioramas, OO/HO model railways and wargames.

Working with an almost 'sepia' colour palette, from original plans and a huge array of photographs, we've striven to produce products that not only replicate reality as

closely as possible, within the boundaries of the production process, but which also capture the character/aura/essence of the vessels and scenarios portrayed.

"The Clyde Puffer will be available in several versions, from the initial 1860s' converted 'Gabbert Boat' with simple steam engine on the rear deck, through a 1900s' Crinan Canal Cruiser and a later War Department commissioned 'VIC' boat built before the advent of World War II. Component counts in our kits are deliberately kept low, so as to facilitate the less experienced, and sometimes younger model maker. There is, however, no compromise on quality or detail level.

"The Bristol Canal Tug, inspired by and based on the preserved Mayflower is a triumph of mould and master design, and typical of its type, in use from the 1850s up until the 1960s. It can be built in any one of three versions and only consists of ten parts, including separate bridge and mast components.

"Cast in the finest resin, our modular Canal Barges represent the first of our widening range and are based on 55 ft modular vessels. They come in a pack of two boats: one with a sheeted load, the other with an exposed (unsheeted) load of coal/aggregate. They are soon to be joined by a more modern extended cabin version.

"The Thames Barges, faithful representations of these iconic vessels, are produced in resin, cord and fine timber, and come in both 90 ft and 46 ft versions, both with sails deployed and furled. Currently in development, a Norfolk

'Wherry' is also now hot on their heels.

"The Canal Dredger and its 'butty boat' come as a set, with the option to rig for a 'steam shovel' type configuration or as a 'drag-line' boat. An optional 'dredged' load is also provided as an insert for the 'butty'.

"Alongside this boat range, and complementary to them, we now provide a burgeoning range of stone and brick bridges, lock gates/stone caissons and canal/harbour walls.

"All models are to be completed at our installation in the heart of the Potteries. This area, with its ancient creative ethos, has provided the inspiration for the first Pottery Factory model ever produced in 1:76 scale: our 'Three Sisters' Bottle-Kiln installation kit. Along with its 'Factory extension' add-on, this makes either an incredible 'stand-alone' diorama or a stunning addition to any model harbour or railway layout.

"Also currently in development are a brewery, cotton mill, watermill, modern recycling centre with all necessary machinery, and a gigantic range of dock and harbourside accessories.

"Special building/painting commissions can be undertaken by prior arrangement."

To view the full and extended range of boats and associated objects produced, along with private and commercial commissions undertaken, visit www.modelartstudios.co.uk or Model Art Miniatures on Facebook



The Thames Barges come in both 90 ft and 46 ft versions, both with sails deployed and furled. A Norfolk 'Wherry' is now also in development.



The Canal Dredger and its 'butty boat' come as a set, with the option to rig for a 'steam shovel' type configuration or portray as a 'drag-line' boat. An optional 'dredged' load is also provided as an insert for the 'butty'.



For the diorama enthusiasts amongst you, the range will also incorporate a large variety of complementary buildings and harbour installation components.

OUT AND ABOUT



Kirklees MBC Summer Open Day

The Kirklees Model Boat Club will be holding its annual Summer Open Day at Wilton Park, Bradford Road, Batley WF17 8JH from 9.30am to 3.30pm on July 9, 2023.

Visitors will be welcome to sail their own model boats alongside those belonging to members on the club's lake (please note, steam powered models will need an up-to-date certificate and no I.C. or high-performance fast electric

boats can be accommodated), plus there will be static model boat and military vehicle displays, possible trade stands to browse, a massive raffle (in support of the RNLI and which includes an annual subscription to Model Boats as one of the prizes), refreshments served and free on-site car parking.

For more information contact the club's events planner on 0113 2675790.



Wings & Wheels (and model boats, actually!)

The UK's longest running annual R/C model show is this year scheduled for the weekend of June 24/25 at the North Weald Airfield in Essex (CM16 6HR).

Despite the name of this show, once again there will be a self-contained area dubbed the 'Marine Village', complete with a temporary 40ft square model boat display pool, a smaller

pool where children and newcomers can get 'hands-on', and a large marquee for club exhibits and for traders supporting our side of the hobby to showcasing their wares.

Tickets at a discounted price can be purchased when ordering in advance online (visit <https://www.wingsnwheels.net/buy-tickets/>).

BUY THE BOOK

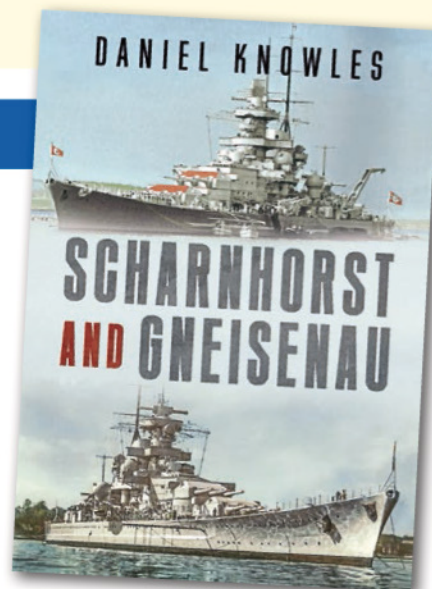
Scharnhorst and Gneisenau

Penned by maritime historian David Knowles and published by Fonthill Media Ltd, this new book provides an authoritative and informed look at the careers of Nazi Germany's most successful battleships.

Illustrated with many rare

and previously unpublished photographs, it covers their most infamous engagements during World War II, including the Channel Dash and the last sea duel between British and German battleships at the Battle of North Cape.

Launched in hardback format and carrying an RRP of £40, the title (ISBN 978-1-78155-887-4) can be purchased directly from the publisher's website at www.fonthillmedia.com or ordered from your local bookstore.



CALYPSO

Brian Knight dives into the build of Billing Boats' recently reintroduced 1:45 scale kit for the legendary oceanographic researcher Jacques Cousteau's world-famous research vessel

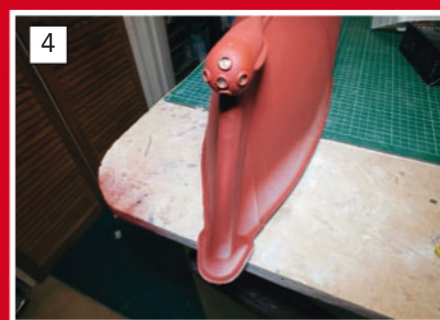




After 70 odd years of model boat building, consisting of both power and scale, scratch built and kits, and with most equipped for radio control, I've probably built enough vessels to start my own private navy! Because I am one of those modellers who enjoys the building more than the operating (although I raced my own designed I.C. power boats for many years) I get bored very quickly when I don't have a project on the go, so a constant problem (not least to keep me out of my long-suffering wife's hair) is what to build next. I was, therefore, intrigued by the interview with Billing Boats run in this magazine last year, explaining how the company has updated its kit manufacturing process to incorporate the very latest in cutting-edge technology into the traditional process.

Consequently, I contacted Billings to enquire about the *Calypso*, a kit I'd always fancied building but which had been off the market for some time. The news was good, as there were indeed plans to reintroduce the *Calypso* into the range. Initially, I was informed that the *Calypso* would be available again in the UK in approximately two months but, to my delight, I had an email just a month later informing me that a consignment of kits had reached UK distributors earlier than had originally been anticipated. After a bit of shopping around, I eventually placed an order with the *Model Shop Leeds*. The staff were extremely helpful, and my kit was dispatched that very same day. It arrived as promised, perfectly packed, the day after. So, after many years of admiring the full-sized vessel, my build could finally begin.

Owing to restrictions of space, I've had to omit some of the construction photos I shot along the way. However, for anyone also thinking of embarking on this build, hopefully the most pertinent aspects of the process are illustrated here. Please excuse the background in some of my photos as I live in a small one-bedroom flat with a very compact working area. Also, some of the white spots on my model are still awaiting clean up and, in many cases, more sanding and painting.



Diving in

To get started, let's first take a look at what's in the box (see **Photo 1**), although please note that the pre-formed hull included has been removed in this particular shot so as to afford a better view of everything else. The first thing I noticed was that this kit features no white metal parts: all fittings are either beautifully turned brass (see **Photo 2**) or plastic components, the latter supplied still attached to their sprues. It also needs to be noted that there are no point-to-point assembly instructions; instead, a comprehensive instruction manual features detailed drawings in which components are individually numbered to tally with both a correspondingly numbered parts list and all the directions on the plan provided. I found the brass parts take a little more studying to confidently identify, although, in fairness, that may just be me, as the drawings of them are good.

Not only are all of the above mentioned instructional documents accessible on Billings' website (www.billingboats.com – just key *Calypso* into the site's search engine) but you can also view numerous photographs of both the full-sized prototype the kit is based on and the resulting model on completion, which I found enormously helpful for reference purposes during my build.

Preparing the hull

As always, I started with the hull, firstly trimming off any excess plastic from the ABS molding before fitting the deck supports. As the hull is very flexible, I decided to add two cross braces to strengthen it at this point. I always complete all hardware and electrical work before I even think of fitting or working on the deck, but an essential task before mounting anything in the hull is to ensure you have access for any items to be added later (such as a battery) or indeed so that you can carry out maintenance of the equipment installed. The easiest way of doing this is to remove the deck from the sheet, dry fit it to the hull, and mark the point where your motors and servos are to be fitted.

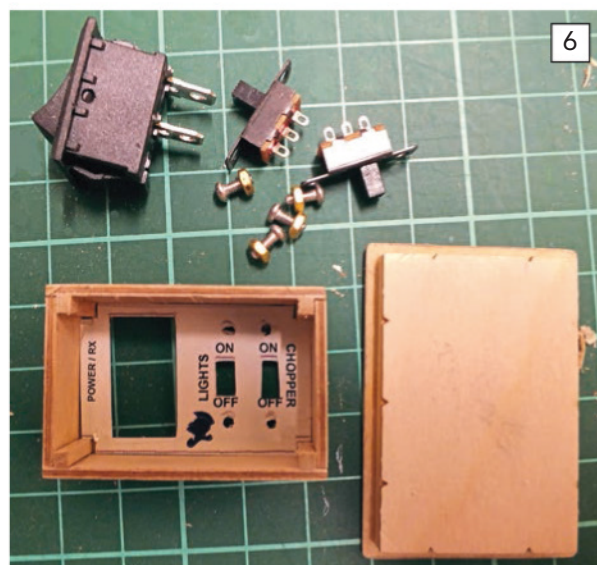
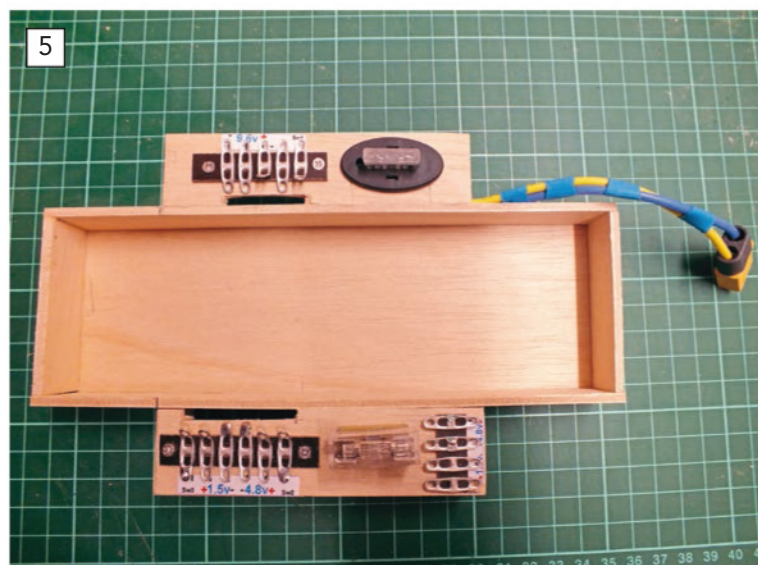
In **Photos 3 and 4** you can see the completed external part of the hull, with its underwater primer already applied. Painting would be carried out later, after the decks had been fitted and the hull stabilized. You will observe, however, that at this stage I had fitted the rub rails and deck trim. When fitting the shafts and rudder post, I knew that, because vacuum-formed plastic hull is semi-flexible, epoxy would have proved too brittle and often doesn't always adhere well (these same failings also apply to superglue). In this instance, therefore, I opted to use an industrial glue gun sourced

from Gluegunsdirect in conjunction with a TECBOND 1942 glue stick, thereby ensuring everything would remain firmly adhered and waterproof.

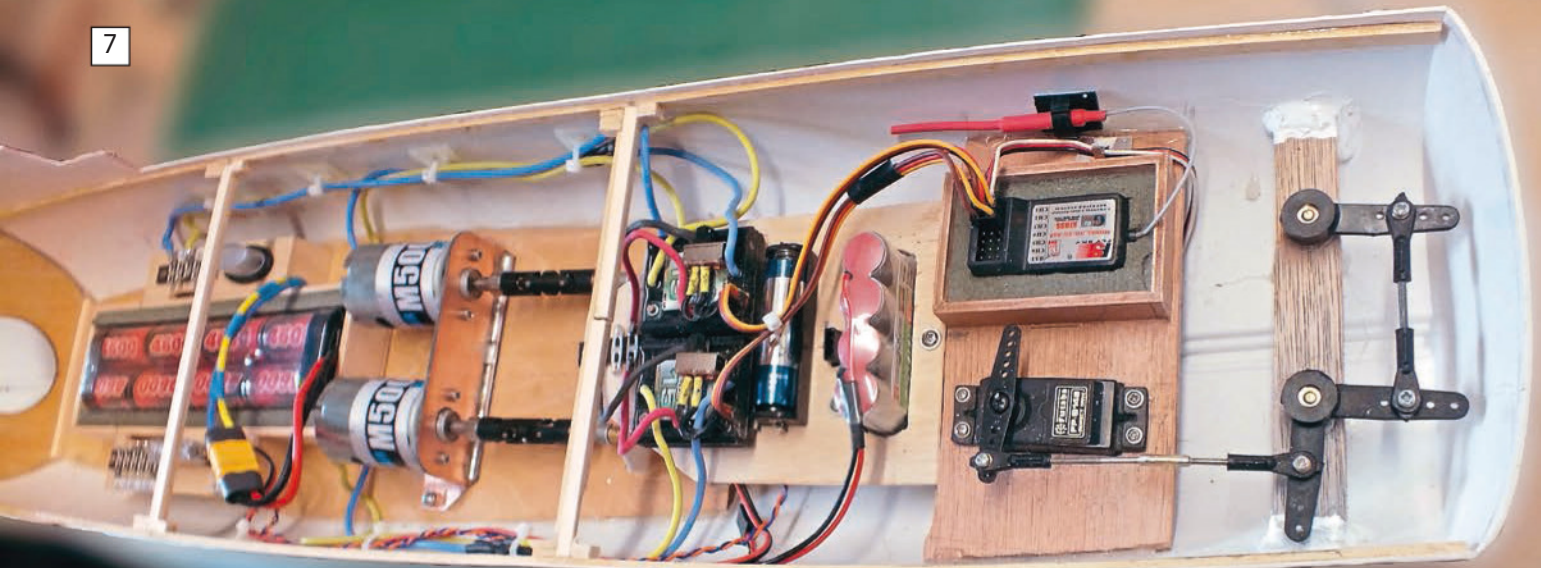
R/C installation

Although the gear itself is not included, this kit is specifically designed with R/C installation in mind. How you decided to equip your model is, of course, entirely up to you. There are many ways to mount motors, and brushed and brushless types often require different solutions. I have used brushless motors in my faster boats but prefer brushed in this type of model (yes. I'm an old 'stick in the mud' and far more comfortable with what I know best!). I make most of my engine mounts using a double-sided fiberglass PC board (I find this gives the mountings strength and yet a little flexibility), with the vertical portion aligned and soldered. In my photos you can view the construction and installation of my battery box (**Photo 5**), modified front deck hatch to mount the on/off switches (see **Photo 6**) and completed mechanicals and electronics (see **Photo 7**). You'll note that apart from the Nimh main battery up forward, there's 4 x AA rechargeable cells and 1 x AA dry cell. These are for lighting and the rotation of the main rota on the helicopter consecutively.

"There are many ways to mount motors, and brushed and brushless types often require different solutions"



7



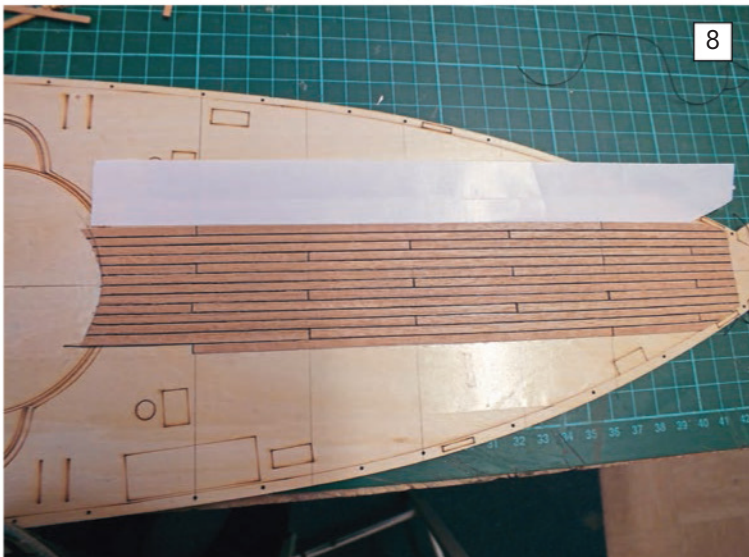
“A very important task, and one that is often sadly overlooked by many modellers, is the accurate lining up of shafts to the motor”

I'm very fortunate in that my trade was in the electrical and electronics industry, but a very important task, and one that is often sadly overlooked by many modellers, is the accurate lining up of shafts to the motor. Correct alignment gives better performance, less battery current drain, less noise and less wear and tear. A tip if using a double coupling or any flexible coupling is to fit a piece of tubing around the extended coupling, although I'm sure there are many other exceptional methods employed by innovative modelers out there.

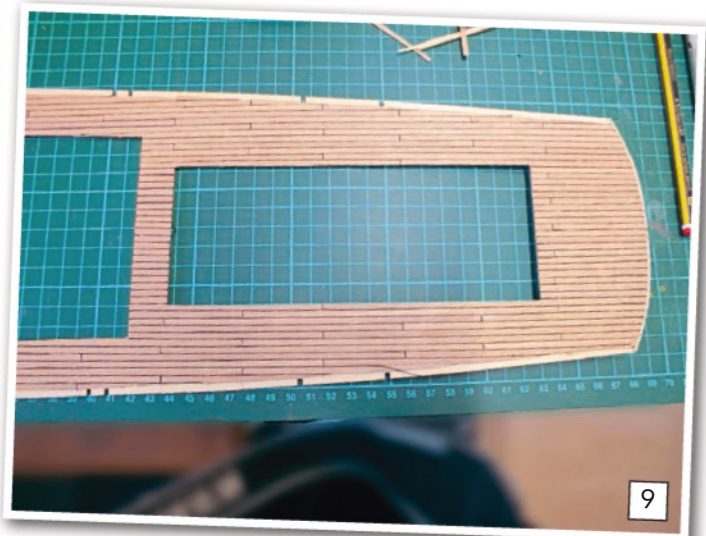
Planking the deck

With the internals complete, let's return to the deck. The kit illustrations show the planking in the length supplied. I, however, chose to plank as I normally do, to the length of the prototype. There's always controversy when it comes to planking to the correct (albeit scaled down) size but searching the web for the original minesweeper on which the *Calypso* was based revealed a mine of vastly conflicting information and images, so in the end I could only resort to taking a little 'creative license' here, settling on a scale

length of 140mm. This gave me a stagger of four planks. At this stage, I adopted my preferred method of planking: that is, using thin double-sided tape and black cord for the caulking (see **Photo 8**) and the main deck (see **Photo 9**). The eagle-eyed modellers amongst you may have noticed that I didn't stick down the cord too well at bottom right! Some may question the lasting effect of fixing planking in this way, but I have models that have been in constant use for 20 years or more and their planking hasn't lifted yet! Just to be sure, though, I give my planking



8

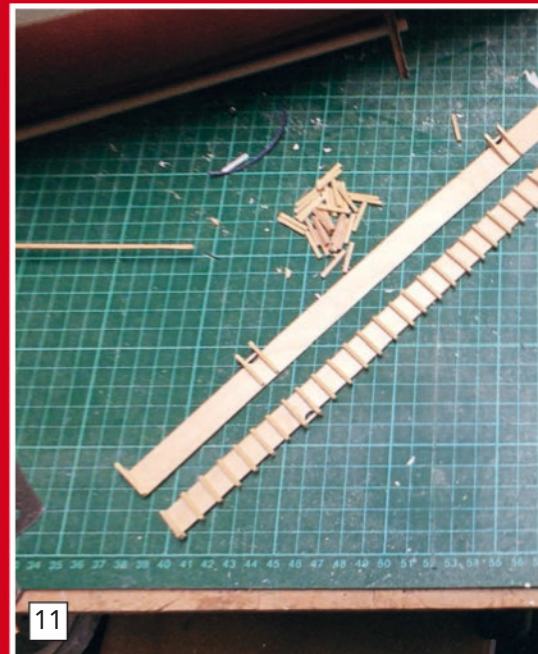


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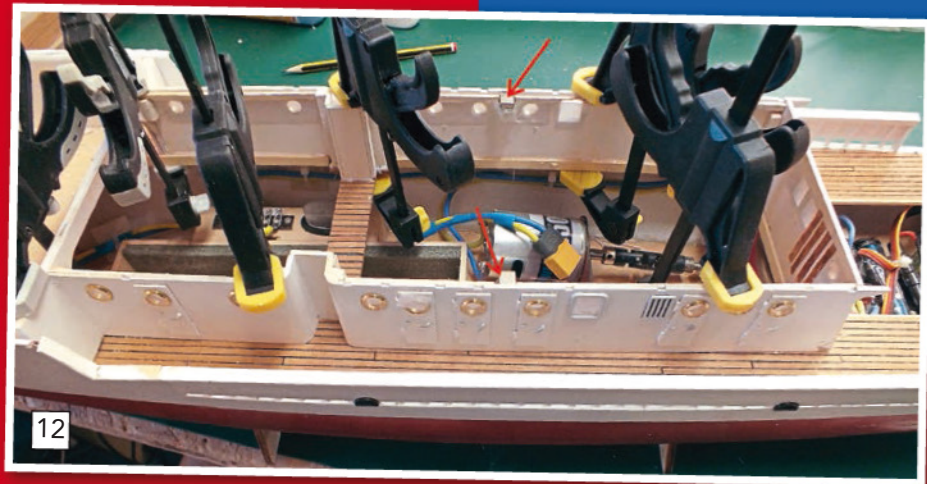
two to three coats of Rustins' sanding sealer and three coats of clear satin varnish. That said, I have encountered challenges with the above method, finding that when the joint of my tape meets with a plank joint, the cord then won't stick. A young but very intelligent modeller, however, recently offered me some advice here. He recommended mounting the double-sided tape diagonally to the run of the planks – a method I will definitely try in the future. Clearly, you never stop learning!

When fitting the main deck, I used lots of elastic bands and clips to hold it down (see **Photo 10**).

The bulwarks needed some detailed assembly and painting (see **Photo 11**) and a lot of tidying up was required before the completed cabin (see **Photo 12**) could be fitted. Magnets have always been my first choice for holding down a superstructure (note the holding magnets indicated in my photo by two red arrows). **Photo 13** illustrates the completed forward deck, with the modified hatch and bulwarks (see **Photo 13**). Note, too, the thin 0.5 mm x 3mm plastic polystyrene strip on the edge of the auxiliary decks, which I feel gives a better edge and finish than just painting. I completed the upper cabin and wheelhouse shown partially finished in **Photo 14** with the installation and wiring of the navigation lights. This required a considerable amount of care,

Flotation test

What I still needed to undertake at this point was a flotation check. I had expected, based on past experience, that I would need extra ballast, but was a little surprised by the result of my calculations. These suggested 1.2 kg would be required to stabilize and compensate for the extra top weight (courtesy of the brass fittings) and to ensure the model would sit correctly on its scale waterline. I therefore had to cut an aperture in between the motors in the baseboard so that I could lay the extra lead weight in the bottom of the hull. Fortunately, my estimation proved correct, as shown in the test sailing photos at the end of this article.



"Some may question the lasting effect of fixing planking in this way, but I have models that have been in constant use for 20 years or more and their planking hasn't lifted yet!"

Superstructure assembly

There are numerous sections (or what I call 'mini kits') to assemble for the superstructure, and I will show some of these here, although not necessary in the order in which they were constructed. Some of the items that detail the superstructure, such as the helicopter floats and the side tanks, are required to be built up of vacuum-formed components. Now, the truth is I've never been keen on vacuum-formed parts, as I find they rarely join together satisfactorily. I therefore discarded these in favour of carving my own interpretations in wood. In no way is this a criticism of the quality of Billing Boats' kit, however, as I know there are many modellers out there who will be only too happy to work with the vacuum-formed items supplied and who will no doubt achieve far better results from them than I ever could.

I then jumped back to the main cabin to fit the removable upper deck supports, small link mounts glued and checked finished and

painted, along with the pillars in (see photo 15) The pillars and supports needed very careful assembly to ensure a completely flat area on which to sit the removable deck, especially as this was to hold a large part of the boat's detail (see Photo 16). As previously mentioned, the majority of the larger plastic parts (which, incidentally, are beautifully molded) are supplied on sprues (see Photo 17), such as those for the helipad, which you can see following assembly in my photographs.

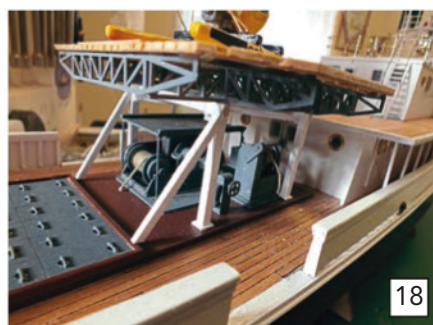
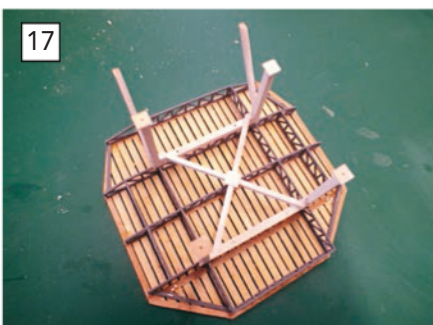
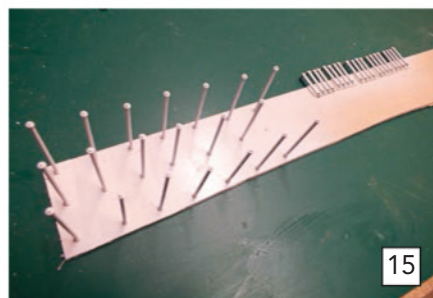
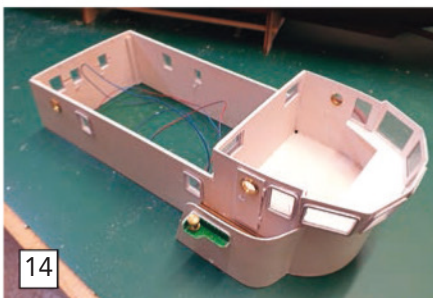
You may have noticed by now that I don't necessarily build in the kit manufacturer's intended sequence. By my own personal choice, therefore, at this point I decided to tackle the rear hatch, along with a strong magnetic hold down. This is because this has to hold some weight along with the helicopter and helipad. so I fitted a fairly strong magnet with a small magnetic disc (see Photo 18). Because there were items to be mounted below the helipad,



which still needed to be assembled, I then concentrated on constructing the various modules/'mini kits' (see Photo 19).

The main mast and rigging

We now arrive at what I found the most challenging task: the main mast. I had to make some modifications here, notably the size of the lamp platform, enlarged to mount the working lamp housings. I am sure Billings originally intended the mast assembly to be part of the cabin, but I decided to change the mounting rods to hollow brass tubes, which I mounted in new positions, with the object of running cables inside to power the lights. Photo 20 shows some of the construction





details. The two outside aerials with the football shape tops are made to slide down (as shown) for transport and raised for display. I also omitted some of the standing and running rigging, because, as this is to be an operation model, I felt the extra cording would simply get in the way.

Detailing

The assembly of the helicopter itself was very straightforward. The installation of a motor to operate its main rota, however, required a little more thought. This was eventually achieved by using a small motor from an old cell phone (there to power the vibration mechanism). I chickened out getting the tail rotor working too!

Photo 21 shows all the main assembly complete but awaiting detailing, a prospect I'd looked forward to right from the start. My only small gripe here concerns the transfers supplied with the kit. Mine broke up on removal. Fortunately, I'd taken the precaution of printing multiple copies with a laser printer on very thin, clear, adhesive A4 vinyl paper (available from MDP vinyl suppliers). I also added a little light relief on the lifebelts by including the ship's name (see **Photo 22**).

Photo 23 shows *Calypso* being displayed on our **Yeovil & District Model Boat Club** stand at a local model show. The wealth of detail incorporated in this newly returned to the market **Billings** kit caused quite a stir, and I have to say hats off to the whole team at **Billings** for all the work they've put into totally reinvigorating the brand since it was taken under the wing of the Vestergaard Group.

After sales support

The kit for the *Calypso* is designated a skill level best suited to experienced modelers, and I have to

concur with this. Make no mistake, though, this is definitely a kit worth all the time and effort involved, and rest assured you will get full and ongoing support from **Billings** should any be needed along the way. After sales support is exemplary. For example, during construction I discovered I was missing three small brass items, but a quick email to **Billings** received an almost instant response, with the necessary parts immediately despatched, and arriving, with an apology, within days.

Final touches

My final pictures show *Calypso's* problem-free maiden voyage at our club's sailing venue behind the Halfway House Inn Country Lodge in Yeovil, Somerset (see **Photo 24**). I'd never normally launch a model without first adding at least a helmsman but with *Calypso* this rule had to be broken due to initially being unable to find any figures of the correct type and scale. Fortunately, thanks to the discovery of a fairly new scanning company – which produces a wealth of figures in all scales, and a bit of help from my artistic daughter (my own abilities when it comes to painting figures being somewhat dubious), I'll soon have a full complement of crew, including Jacques-Yves Cousteau himself! ●



WIN

ONE OF THREE CALYPSO BEANIES!



As a neat little extra, and a nod to the late Jacques Cousteau, Billing Boats' will be including one of the trademark red woolly divers' hats always sported by this world-famous oceanographer and his team in each example of the first, limited edition, run of its back by popular demand kit for the Calypso. This month, however, thanks to the generosity of kind folks at Billing Boats, we've got three of these smart little beanies up for grabs!

Why the red divers' hat?

Those of you who remember the wonderful TV documentaries produced by the now legendary underwater explorer Jacques Cousteau aboard the Calypso will recall that he and his diving team always wore these red divers' hats. So, what's the story behind them?

Well, during the early days of underwater exploration, when divers had to be enclosed in canvas suits and copper helmets, they needed to wear something warm on their heads. The air that was continuously blown into their helmets for them to breathe was very cold; even colder than the surrounding water, because by the time it was fed down via the long air hose through the low temperature depths it also, as it entered the helmet, expanded slightly, thus chilling it a little more. What's more, the air needed to be deliberately blown around the helmet to ensure effective ventilation, thus preventing

any build-up of expired air and avoiding any condensation forming on the viewing ports – which added a 'wind-chill' factor to the cooling effect.

Early divers would have used whatever the common form of thermal head protection around was at the time helmet apparatus was introduced (circa 1840s). This tended to be a red woolly cap commonly used by sailors back then, and especially by the oyster fishermen from Whitstable in Kent, England, the 'home' of helmet diving. A quotation referring to these hats came about in 1851 when someone described the oyster fishermen tied up at London's Billingsgate fish market, selling their loads of oysters:

"Who's for Baker's?" "Who's for Archer's?" "Who'll have Alston's?" shout the oyster merchants and the red cap of the man in the hold bobs up and down as he rattles the shells about with a spade"

Contemporary paintings of sailors and boatmen also illustrate the common use of the red woolly cap.

The caps themselves were of the 'sleeve' pattern, in that they were knitted as a sleeve. The two ends were then stitched up and the sleeve half-pulled inside-out, making it a doubled layered sleeve, now open at one end. The open end was pulled over the head and the lower edge was turned up to provide a four layered band around the forehead. The red divers' cap tradition was therefore established at the same time as diving

helmets were introduced at the oyster fishing port of Whitstable, UK.

It's interesting to also note that the famous British diving equipment manufacturers of the 19th century, C.E Heinke & Co and Siebe Gorman & Co, included the red woolly cap in full sets of the diving apparatus they sold.

How to enter

All you have to do to be in with a chance of bagging one of these beanies is complete the entry form included on this page, cut it out (photocopies of the form will be acceptable for those of you who do not wish to deface your magazine) and mail it back to us at:

BB Calypso Beanie Hat Prize Draw
Model Boats,
Mortons Media Group,
Media Centre,
Morton Way, Horncastle,
Lincs LN9 6JR

Please note, the closing date for entry submissions will be Friday, July 21, 2023
 Good luck, everyone!

TERMS & CONDITIONS

Competition closes Friday, July 21, 2023. There are no cash alternatives available. Terms and conditions apply. To view the privacy policy of MMG Ltd (publisher of Model Boats) please visit www.mortons.co.uk/privacy

Calypso Beanie Draw

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THE AMAZING AMPHICAR



Peter Koch-Osborne explains why and how he set about creating his very own scaled-down but fully working scratch build of this early 60s' hybrid, billed back in its day as the "sportscar that swims"

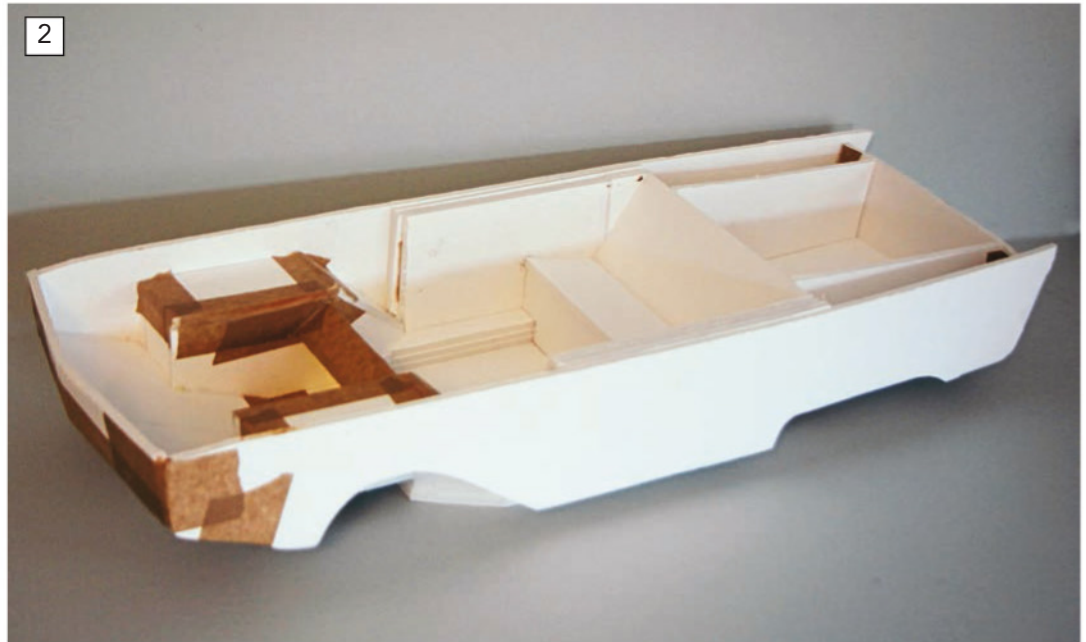
Searching around for a winter scratch-building project I stumbled onto the Amphicar. This was an amphibious car built in Germany in small numbers in the early 1960s (see **Photo 1**); most were exported to the US. Contemporary reviews said it was neither a very good car nor was it a very good boat, but it was a boon for anyone living on a small island! I wanted a project that was 'a bit different' and one that would throw up design and constructional problems in need of solving; in this regard the build certainly did not disappoint.

I fished around on the internet for plans and information and there was sufficient available to make a scale model, and yet more poking around on the social media revealed that a model railway acquaintance of mine actually owned an Amphicar!

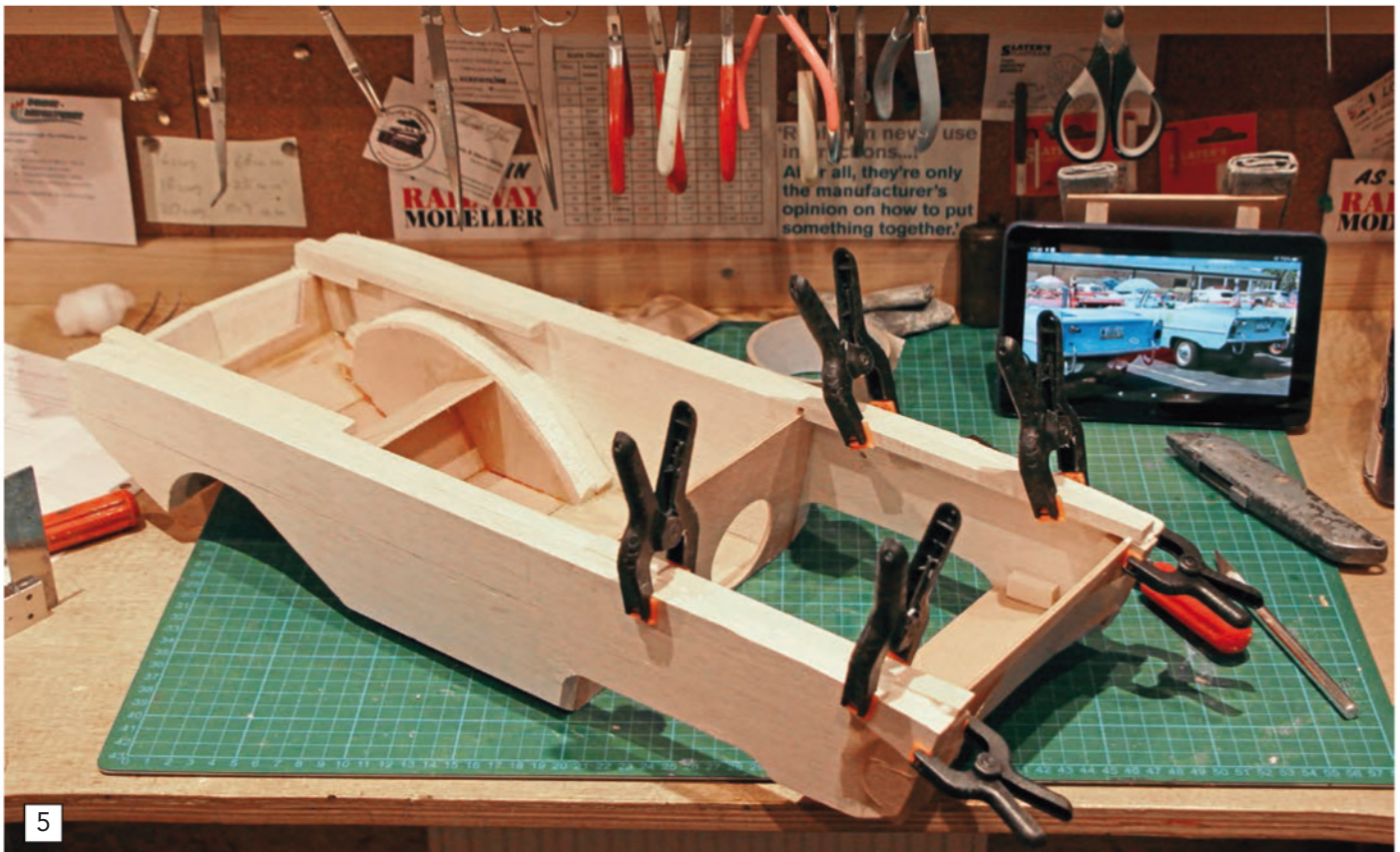
The first problem was determining the scale. This was governed by the availability of wheels, to say nothing about the eventual size of the model. I approached the model car retailers who were singularly unhelpful, stating they couldn't advise on a specific project. A bewildering choice of components

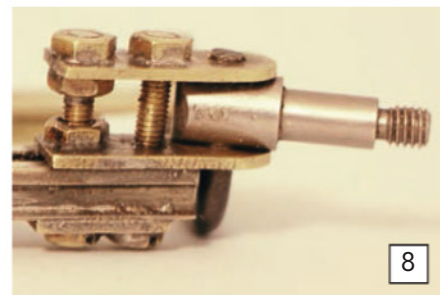
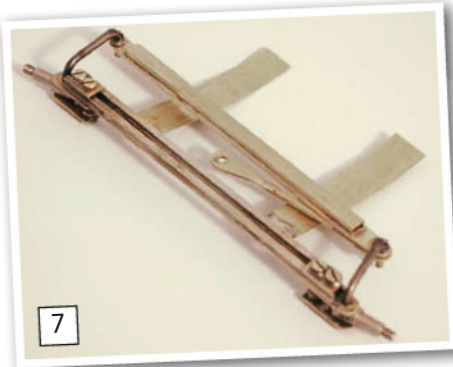
is available, and partly due to the lack of online dimensional information, I was quickly out of my depth. Eventually, 1:14 truck front wheels were located, having roughly the correct proportions, tyre width, hub to tyre size ratio, tread pattern and so on. This determined the scale of the car, as the 84 mm overall tyre diameter related to 1:7.8. The model is around a manageable 560 mm long x 200 mm wide. The readily available complete front and rear axle components were too wide for my model, so I would have to use some ingenuity to sort out the road drive train and Ackerman steering.

"I wanted a project that was 'a bit different' and one that would throw up design and constructional problems in need of solving; in this regard the build certainly did not disappoint"



“A mock-up model was built to scale from some spare foam-board I had. This proved an invaluable three-dimensional ‘plan’”





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The restricted space within the rear engine compartment and front luggage boot would also be potentially problematic, so a mock-up model was built to scale from some spare foam-board I had (see **Photo 2**). This proved an invaluable three-dimensional 'plan' and allowed me to familiarise myself with the vehicle and its somewhat restricted internal spaces. It turned out that the space beneath both front and rear seats was also used.

The build: body and steering

It became clear that some design compromises would have to be made if the model was ever going to function. Calculations revealed that weight would

"While the wheels were UK sourced, the differential, prop shaft (later much shortened) and differential housing came from three different overseas suppliers. Thankfully all were compatible. Phew!"

always be a concern, despite the relatively shallow freeboard when in the water. The front wheel arches limited the under-water volume at the front end (can a car have a bow?). I decided the differential should be within the hull/body as no information on the advisability of flooding a model differential seemed to be available. This precluded the use of rear-end suspension but added useful

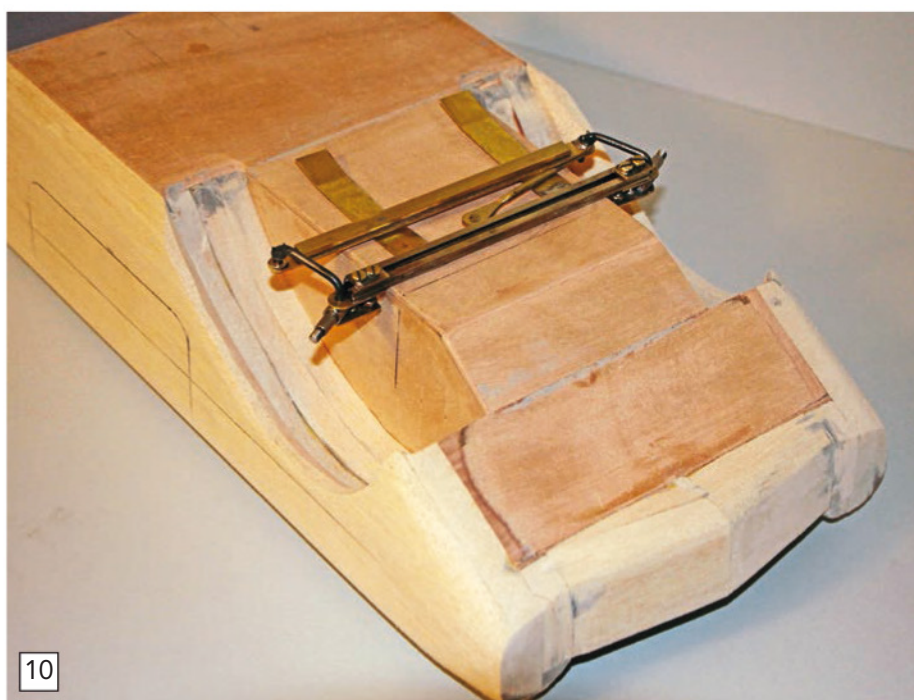
under-water body volume and hence valuable buoyancy.

The full size Amphicar steers poorly in the water as only the front wheels act as rudders. What's more, the 'lock' in one direction is even further compromised due to prop rotation. As the viscosity of water cannot be scaled I fitted both contra-rotating propellers and a pair of transparent rudders to improve manoeuvrability of the model in our smallish model boating pond, hopefully overcoming the turning circle problems in water. The rudders are not visible in the water and barely visible out of it. In the event, the model turns better in the water than out of it!

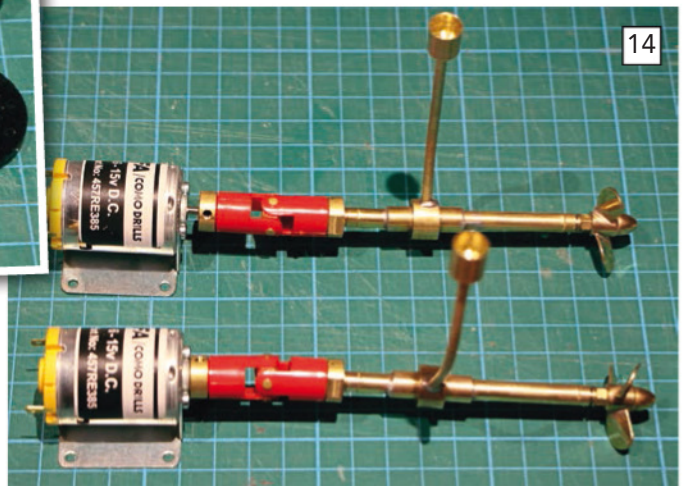
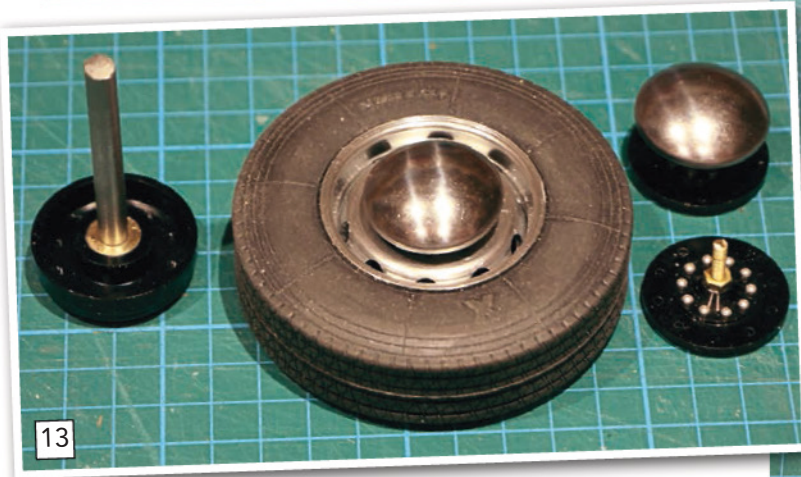
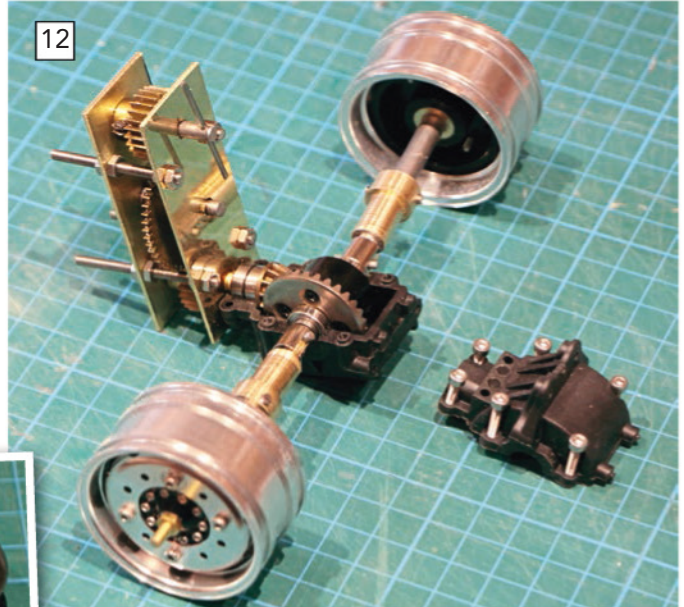
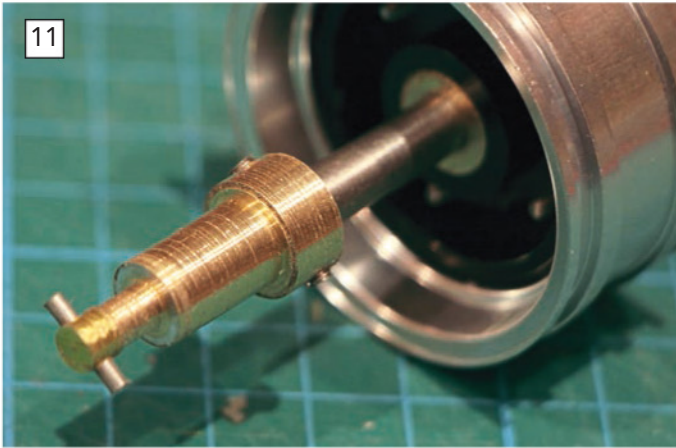
Many components were sought from eBay traders, most in China, so while the wheels were UK sourced, the differential, prop shaft (later much shortened) and differential housing came from three different overseas suppliers. Thankfully all were compatible. Phew!

While these were awaited, a start was made on the balsa wood body (see **Photo 3**) using 12 mm thick planks for the sides to allow for the subtle curves to be sanded in. The floor was constructed from 3 mm ply (see **Photos 4 & 5**). **Photo 6** shows the front luggage compartment and scuttle in the 'rough'.

At this point I scratch built the Ackerman steering assembly, mainly from some stock brass I had to hand; the main beam being some garden railway nickel silver rail (see **Photo 7**). The close-up (see **Photo 8**) shows a detail of the front stub axle (supplied with the wheels) and its incorporation into the



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“Many thanks to the team at Howes Models for their advice regarding sizing the motors and propellers; I wouldn’t have known where to start, and all proved ideal”

steering mechanism. Miniature ball races had to be separately sourced to fit the wheels on to the stub axles. After further body panels were added and much sanding carried out, the body was at last beginning to take shape (see **Photo 9**).

The steering assembly is allowed to ‘float’ on foam pads so that all four wheels stay on the ground. **Photo 10** shows the steering offered up to the underside of the body/hull. A vertical steering column would be fitted later with linkage to a metal geared servo.

The wheel drive train

Attention now turned to the drive train for the rear wheels. Having purchased four truck

front wheels (they all had to be the same, rear wheels were dished!) the wheel centres were machined out to take brass bushes and fixed steel half-shafts. A further brass bush was machined on the lathe to connect with the output shaft cup on the differential. Brass bearings were turned, drilled, reamed and lapped to take the half shafts; hopefully waterproof grease would mean no leaks, as all would be submerged when in the water (see **Photo 11**). In practice a tiny drop of water entered the body at one side only.

The differential, its housing and the shortened (to a stub) prop shaft were offered up to the half-shafts and wheel centres. A train of Meccano gears was assembled between two brass holding plates to transfer the drive to a position suitable for connection to the 50:1 gear motor (see **Photo 12**). **Photo 13** shows the rear wheel, the modified hub and the hub cap, which is a domed snap-on axle end fitting bolted into the wheel centre using a home-made nylon threaded insert to secure.

The propeller drive train

Photo 14 depicts the drive to the two propellers. The 100 mm shafts are shortened to 70 mm and now incorporate a bush with oil tube and cup. Note the LH and RH brass

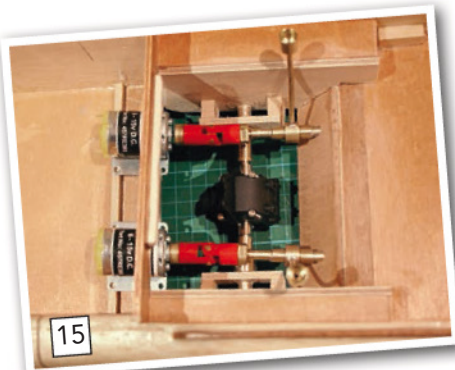
propellers. These were offered up into position with the differential and rear axle components (see **Photo 15**). The gear train to the rear axle was added; this was clamped to the bulkhead (rear seat back) and the main motor mount added (see **Photo 16**).

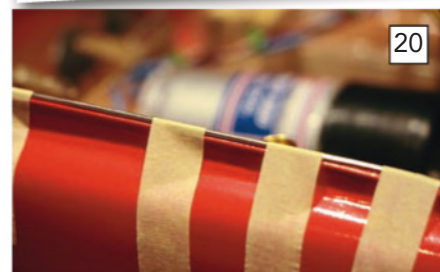
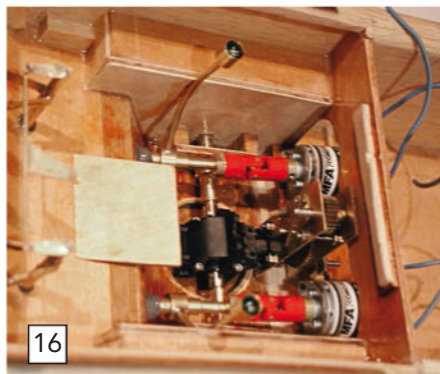
At this point the car was sealed internally with clear two-pack epoxy and outside with dope/tissue paper. The tissue had to be fixed in small pieces due to the complex curves in the body. The underside was primed, and brush painted in satin black, and the body was also primed, then sanded repeatedly. A ‘bath test’ determined much care would have to be taken with the eventual weight of the model!

Many thanks to the team at Howes Models for their advice regarding sizing the motors and propellers; I wouldn’t have known where to start, and all proved ideal.

The fiddly bits

Most of these were fitted after painting the model with grey primer, red primer and gloss red (Hyundai ‘Electric Red’) from Halfords ‘rattle cans’, with much rubbing down with graded wet-and-dry papers. The copper tube rear fenders and quarter-lights were fixed before painting, so the whole car had to be masked to paint these in black gloss then





'chrome' (chrome spray paint being more effective if used over black gloss).

The windscreen surround was built up from brass angle, channel and balsa, anchored by inserting brass wires deep into the balsa sides using cyano adhesive, then finishing with filler.

The headlights are commercial items but were too small as supplied. These were found to be a fortunate push-fit into a 'chrome' surround (the outer part of a large eyelet; at this stage I needed a bit of luck!) when the removable transparent headlight cover was also added (see **Photo 17**). This gives the impression of a larger light. Tail lights are not to scale but the nearest I could find. I nearly gave up on the indicators; these are a non-working LED inserted halfway through a 2BA washer fixed with epoxy and painted orange.

Chrome trim was fashioned from jewellers' silver plated half-hard brass wire, which is wonderfully easy to solder. Windscreen trim, wipers and other bits of trim, door handles, window winders and so on were crafted from the same. The steering wheel was made from brass wire, silver soldered into a circle, with the spokes similarly formed. The brass centre hub was lathe turned and the spokes thickened with 5-minute epoxy. The steering wheel was soft soldered onto the hub and fitted to a plastic steering column, all painted with Humbrol enamels.

The dashboard was created from plastic card, with instruments being printed off from the internet and the various switches represented and painted with Humbrol enamels.

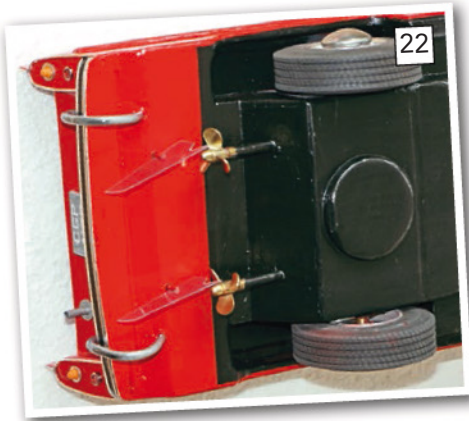
The louvered engine compartment lid

"Chrome trim was fashioned from jewellers' silver plated half-hard brass wire, which is wonderfully easy to solder"



21

23



(see **Photo 18**) presented its own problems. After experimenting unsuccessfully with brass foil, I commissioned a brass etch of the entire engine cover. I was in too deep at this stage to compromise! This was reinforced with brass angle soldered to the underside before forming the louvres by bending with flat-nosed pliers. A balsa wood backing prevented its tendency to twist after all the expansion stresses of soldering and forming the louvres. The folded-down hood is represented by some black fabric from the rag box I stretched over a piece of thin plywood. The seats are of balsa construction, which I covered with offcuts of leather – the rear seat hiding the prop motors and the front seats hiding the battery pack.

1:8 scale number plates were commercially available. I made 'chrome' side protective strips with foil tape and black electrical insulating tape over the centre; using a similarly process for the rear bumper. The front bumper was created from plastic tube/ JB Weld epoxy, sanded to shape the ends, with sheet plastic, sprayed grey primer/black gloss/chrome, used for the flat top.

Working Headlights _____
Radio Receiver _____
Light switch unit _____
Speed Control _____
Servo Drive Selector _____
Steering Servo and column _____

Battery Pack _____

Twin Propeller Motors _____

Gear train to Differential _____

Differential 50:1 Geared Drive Motor _____

Twin Rudders and Servo _____

Working rear lights _____



24





25

Photo 19 shows most of the small components before fitting. **Photo 20** shows the 1.2 mm silver plated wire held in place with masking tape prior to cyano adhesive being applied with a cocktail stick, the wire ends being turned into the balsa body. Once the tape was removed, the taped sections were similarly glued; the finishing lacquer did the rest, and

will also preventing the silver from tarnishing, I hope! The underside was painted satin black; this also disguised the too-thick wheel arch edges (see **Photo 21**). The propellers were provided with transparent rudders to assist manoeuvrability (see **Photo 22**).

Photo 23 shows the internal arrangement and the mechanics and electrics.

Like a duck to water...

The Amphicar made its first outing at Windermere Model Boat Club (see Photos 24-26), which, I am delighted to report, went swimmingly well! ●

26



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B'HAM HAY MILLS 1152 Coventry Rd, Hay Mills	0121 7713433	GLASGOW 280 Gt Western Rd, G4 9EJ	0141 332 9231	NOTTINGHAM 211 Lower Parliament St.	01535 186 181
BOLTON 1 Thynne St, BL3 6BD	01204 365799	GLOUCESTER 221A Barton St, GL1 4HY	01452 417 948	PETERBOROUGH 417 Lincoln Rd, Millfield	01733 311770
BOLTON 105-107 Manningham Lane, BD1 3BN	01274 300962	GRIMSBY ELLIS WAY, DN32 9BD	01472 354435	PLYMOUTH 56-64 Embankment Rd, PL4 9HY	01752 254050
BRIGHTON 123 Lewes Rd, BN2 3QB	01773 915999	HULL 8-10 Holderness Rd, HU9 1EG	01482 223161	POOLE 137-139 Bournemouth Rd, Parkstone	01202 717913
BRISTOL 1-3 Church Rd, Lawrence Hill, BS5 9JJ	0117 936 1060	ILFORD 746-748 Eastern Ave, IG2 7HU	0208 518 4286	PORTSMOUTH 277-283 Copnor Rd, Copnor	023 9265 4777
BURTON UPON TRENT 124 Lichfield St, DE14 3QZ	01283 564 708	IPSWICH Unit 1 Ipswich Trade Centre, Commercial Road	01473 221253	PRESTON 53 Blackpool Rd, PR2 6BU	01772 703263
CAMBRIDGE 181-183 Histon Road, Cambridge, CB4 3HL	01223 322675	LEEDS 227-229 Kirkstall Rd, LS4 2AS	0113 231 0400	SHEFFIELD 453 London Rd, Heeley, S2 4HJ	0114 258 0831
CARDIFF 44-46 City Rd, CF24 3DN	029 2046 4424	LEICESTER 69 Melton Rd, LE4 6PN	0116 261 0688	SIDCUP 13 Blackfen Parade, Blackfen Rd.	0208 3042069
CARLISLE 85 London Rd, CA1 2LG	01228 591666	LINCOLN Unit 5, The Pelham Centre, LN5 8HG	01522 543 036	SOUTHAMPTON 516-518 Portsmouth Rd.	023 8055 7788
CHELSEA 44 Fairview Road, GL52 2EH	01242 514 402	LONDON CATFORD 289/291 Southend Lane SE6 3RS	0208 695 5684	SOUTHDEN 1139-1141 London Rd, Leigh on Sea	01702 483 742
CHESTER 43-45 St. James Street, CH1 3EY	01244 311258	LONDON 6 Kendal Parade, Edmonton N18	020 8803 0861	STOKE-ON-TRENT 382-396 Waterloo Rd, Hanley	01782 267321
COLCHESTER 4 North Station Rd, CO1 1RE	01206 762831	LONDON 503-507 Lea Bridge Rd, Leyton, E10	020 8558 8284	SUNDERLAND 13-15 Ryhope Rd, Grange Town	0191 510 8773
COVENTRY Bishop St, CV1 1HT	024 7622 4227	LUTON Unit 1, 326 Dunstable Rd, Luton L4 8JS	01582 728 063	SWANSEA 7 Samlet Rd, Llanisamlet, SA7 9AG	01792 792999
CROYDON 423-427 Brighton Rd, Sth Croydon	01326 380 841	MAIDSTONE 57 Upper Stone St, ME15 6HE	01622 769 572	SWINDON 21 Victoria Rd, SN1 3AW	01793 491717
DARLINGTON 214 Northgate, DL1 1RB	01304 373 434	MANCHESTER ALTRINCHAM 71 Manchester Rd, Altrincham	0161 9412 666	TWICKENHAM 83-85 Heath Rd, TW1 4AW	020 8892 9117
DEAL (KENT) 182-186 High St, CT14 6BD	01332 290 931	MANCHESTER CHESTER 209 Bury New Road M8 8DU	0161 241 1851	WARRINGTON Unit 3, Hawley's Trade Pk	01925 630 937
DERBY Derwent St, DE1 2ED	01302 245 999	MANCHESTER GORHAM Unit 5, Tower Mill, Ashton Old Rd	0161 223 8373	WIGAN 2 Harrison Street, WINS 9AU	01942 323 785
DRIFTHAM 15 Whitley Hall, Road	01382 225 140	MANCHESTER 169 Chesterfield Rd, South	01623 622160	WOLVERHAMPTON Parkfield Rd, Bilston	01902 494 481
DUNDEE 26-28 Terrace, DD1 3ET	01392 559 919	MIDDLFSBROUGH Mandale Triangle, Thornthorpe	01622 627881	WORCESTER 48a Upper Tything, WR1 1JZ	01905 723146
DUNBURN 163-171 Piersfield Terrace					

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LONDON CATFORD 289/291 Southend Lane SE6 3RS

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NORWICH 282a Heigham St, NR2 4LZ

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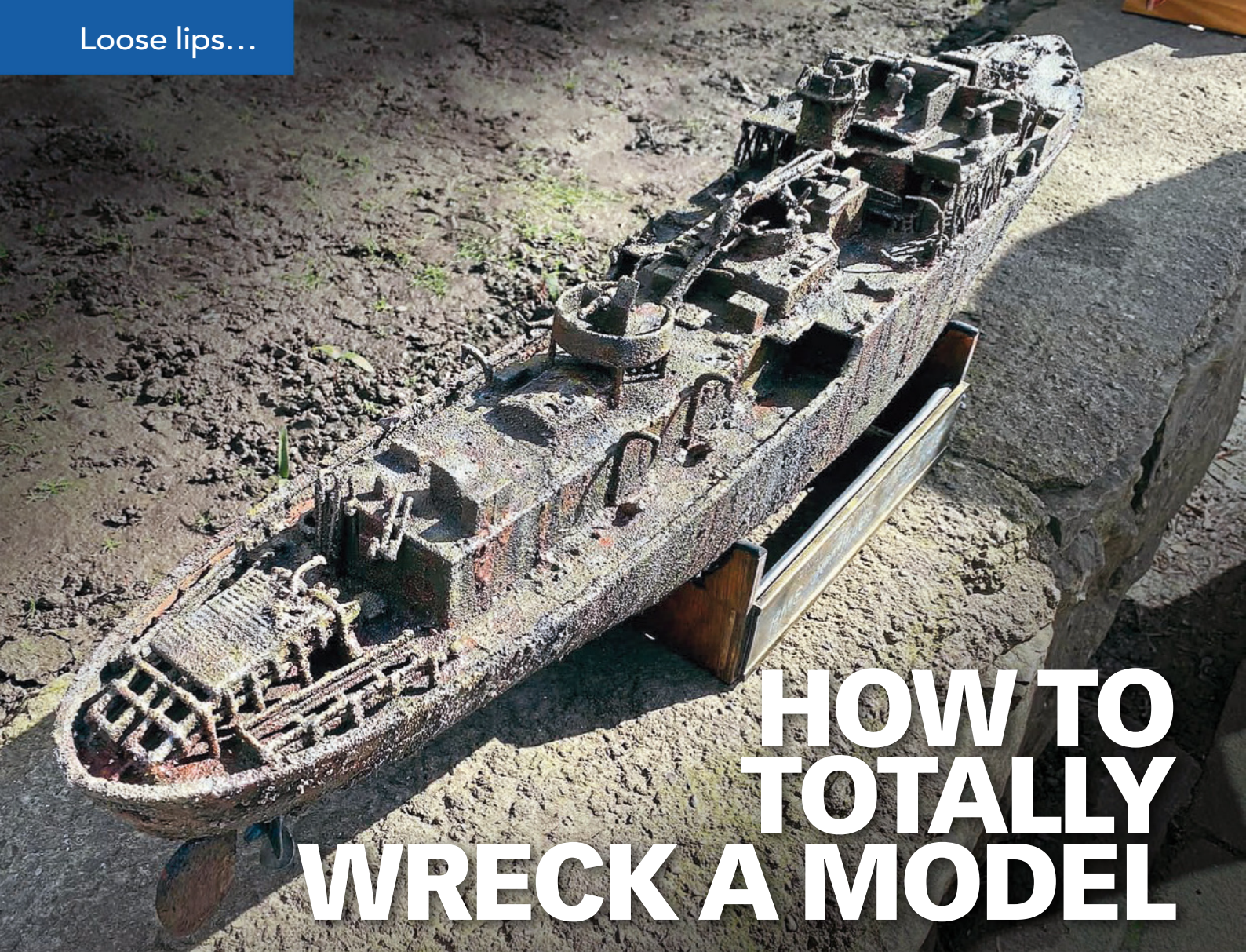
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SWINDON 21 Victoria Rd, SN1 3AW

TWICKEN



HOW TO TOTALLY WRECK A MODEL

Simon Murphy talks us through a novel approach to turning a seemingly unsalvageable old model ship/boat into something absolutely mesmerizing

This is the tale of a ship – well, a model of a ship, and one many of you will be familiar with. I am referring to the 1:72 scale Flower Class Corvette *HMCS Snowberry*, originally released as a kit by Matchbox and later by Revell. This kit builds to a nicely sized model and when converted to a working vessel looks rather fine on the water, too – but what can be done with an



Damage to starboard side after using heat, pliers, cutters and a Dremel. Inside of the hole, a false bulkhead was made, and debris added. Just aft of the hole and before the bilge you will see the round ASDIC housing; this was made from scrap, inserted into a hole drilled into the keel and epoxied in place.

example that has well and truly passed its sell by date? It could, of course, be stripped down for parts, but once beyond economic salvage it's most likely to simply end up in the bin.

This was the prospect that seemed to be facing my desperately tired old Matchbox version, which had so many parts snapped off, broken and missing that it appeared to be beyond redemption. The hull was badly damaged, and the internals (motor and shaft) weren't even worth removing. For some reason, though, I just couldn't bring myself to trash it, so for the longest time the model sat forlornly on my workbench while I contemplated its fate.

This was eventually determined by one of my favorite books, *The Cruel Sea* by Nicholas Monsarrat. Monsarrat drew upon his experiences during World War II to write this novel, which was published in

1951 and, later, in 1953, adapted for the equally excellent film of the same name. The film stars Jack Hawkins, who puts in a magnificent performance as Lieutenant Commander Ericson. Taking charge of the Flower Class Corvette *Compass Rose* and her inexperienced crew, Ericson sets out to defend the Atlantic convoys from U-Boat attacks, until eventually the ship is torpedoed and sunk. Now, I know we've the *HMCS Snowberry* and the *Compass Rose* modelled in both static and R/C format, but no-one, to my knowledge, had ever modelled the ship in her final resting place. Pondering this, it occurred to me that I do have some experience in ruining a perfectly good model – that is to say, I sometimes portray models (mainly submarines) as sunken. I'd never attempted to apply the process to such a large vessel before though. Would it work? Time to try!

*“For the longest time the model sat forlornly on my workbench while I contemplated its fate. This was eventually determined by one of my favorite books, *The Cruel Sea* by Nicholas Monsarrat”*



The coating applied. Note the build-up of layers over the hull and top of the model.



Getting stuck in

I began by removing certain items and bending/shaping the model to form the kind of damage that would have been caused by the act of the ship plunging into the depths. In reality, most of the superstructure would have been ripped away and, over time, her decks would have slumped until she became just a hulk. However, while that would have portrayed a more realistic scenario, it wouldn't, in my opinion, make for a very interesting model. Also, while there is mention in the film that she's been hit by a torpedo, there's no reference as to where. So, I re-watched the relevant scenes in which she went down and concluded that she'd been struck starboard side on, in the bow area in front of the ASDIC tube (which eventually caused her demise). Once more, therefore, it was out with the heat gun, snips, sharp tools to create a glancing blow just forward of the ASDIC tube (which protrudes underneath the keel and has a tube that runs up inside).

Starting the finish

Once happy with the further damage I had inflicted on this poor model, it was time to start creating the kind of 'crusty' look wrecks take on. This is a very simple technique that can be achieved with the most basic of materials:

■ Sand, both fine and coarse

I have found that this works best. Make sure your sand is dry and that you have two separate containers (one for the fine and the other for the coarse), and a plastic shot glass or similar to scoop up the sand to add to your model. You will also need an area in which you can move the model around while coating it without adding a small beach to your workspace (yes, I was clearing up sand for over a week after finishing this model!).

■ PVA (white) glue

This is used in an undiluted mix, which I find gives better results – not too thin so as it runs yet workable. Again, you'll need another shot glass to pour your glue into.

■ Paintbrushes

Cheap kids' or artists' paintbrushes can be used for fine work, while you'll find flat type

brushes work best for covering larger areas.

To coat, apply your PVA glue (with a brush) in sections, then sprinkling your fine sand over that. You can rework, adding more, as required. Topping this with some coarse sand also makes for interesting crusty outcrops; although, remember, you may want to still want to see some of the hull details, so go easy and don't make this too thick. Leave your model to dry after completing each section and before beginning work on another area. I should point out that even when once the coating is dry some of it may come away while handling the model. Don't worry, though, as you can always go back and add more if necessary.

Once your model is fully coated and repairs to any chips and scratches have been made

good, it's time to add the most important part, your main coat of paint. This serves the very important role of not only providing a basecoat but also helping to protect the sand coat applied from handling damage – although if you drop the model, naturally the sand is going to crumble and fall off in chunks.

I used a dark military green on my model, but you can use any colour you like. For a quick and even finish on a model of this scale, I'd suggest spray painting with a rattle can. For smaller models an airbrush or even a soft paint brush will suffice. At risk of stating the obvious, always wear an appropriate face mask and goggles when spray painting. Set yourself up a little spray booth and if performing this task indoors always ensure you have adequate workspace ventilation.



The model completely covered and awaiting its topcoat.



The topcoat and some light weathering applied.



The original kit for this model came supplied with a plywood stand, which Simon has beautifully stained and weathered. The maker's plaque, shown here applied to the rear of the stand, is just a small self-adhesive type, which has also benefited from a bit of weathering.



Initially struggling to find an appropriately sized plaque for the front of the stand, Simon fortunately discovered a door plaque proved to be just the right fit across its entire length. This has, likewise, received some very effective weathering to make it look suitably worn.

Making a fitting stand

The stand that had originally been provided with the kit was made simply from plywood and I felt this looked inappropriately clean and pristine for my model's new incarnation as a wreck, so, once I'd lightly sanded and cleaned it, I applied some stain. Once this had dried, I repeated the entire process. Once my stain was completely dry it was ready to 'distress'. I achieved this by using some black oil paint I'd thinned with white spirit, applied with a brush, before using a make-up sponge (the little triangle type ones work best) to drag and dapple the area, thereby giving it a grimy, dirty look.

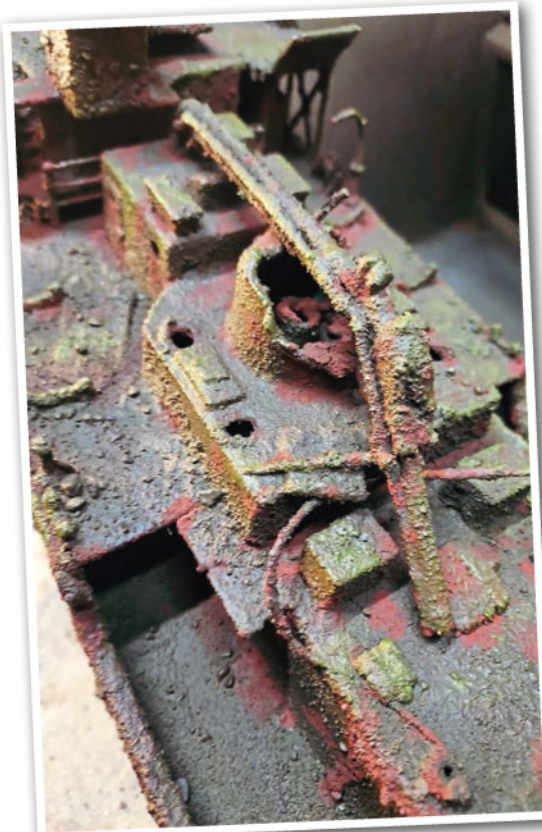
I also sourced a couple of plaques: one small one for the back and a larger one for the front. The latter required some thought, but, in the end, I managed to find a door name plaque that fitted just perfectly. These

"The stand that had originally been provided with the kit was made from plywood, but I felt this looked inappropriately clean and pristine for my model's new incarnation as a wreck, so..."

were given a worn look by sanding them back and then applying a verdigris acrylic paint I made up from blue, green and white. Using a fresh make-up sponge, this was also dabbed on to the text I'd had engraved on the plaques. Once all was dry, everything was given a wash of diluted down oil paint to further enhance the grimy look.

The entire stand and plaques were sealed with a coat of matt varnish using my airbrush.

Final additions were some felt pads on the base bottom edges and a soft rubber ridge fitted into the profile of the stand so that the model doesn't get damaged by the raw edges of the cradle.



I must say I found this a really enjoyable, satisfying and rewarding part of the project but, as long as you have a dependable stand, it's not an essential part of the process.

Further weathering

The next task is the application of various weathering and paint effects. This can be achieved with dry brushing, a technique that involves paint being applied to the end of a brush and then wiped away so there's just a small amount left on the bristles before it's flicked over the area in which you want to apply colour. The process can then be repeated all over the model using various colours and shades until you're satisfied with the overall result. Sponging can also be used in certain areas to create a dappled look. Rust pigments can be applied to highlight deck plate areas, sites of damage and indeed any locations where on a real ship rust naturally tends to accumulate. On my model, adding rust pigments to the build-up of the light sand areas down the hull provided that 'rusticle' (a word coined by Robert Ballard for the growths of rust that flowed down the *Titanic*) look. Pigment fixers are commercially available, but I find white spirit works just fine. Once dry, certain areas can be given a tone down using a little black oil paint thinned with white spirit. When you're finally happy with the overall look of your weathering, leave everything to dry before you apply a sealing coat (I used a semi-gloss varnish to create a slightly 'wet and slimy' impression). This will protect the model's finish. It's worth pointing out, though, that rust pigments can darken after a coat of varnish, so do bear this in mind and allow for it when choosing your products – i.e., if you want to represent freshly formed rust, be sure to opt for a lighter pigment.

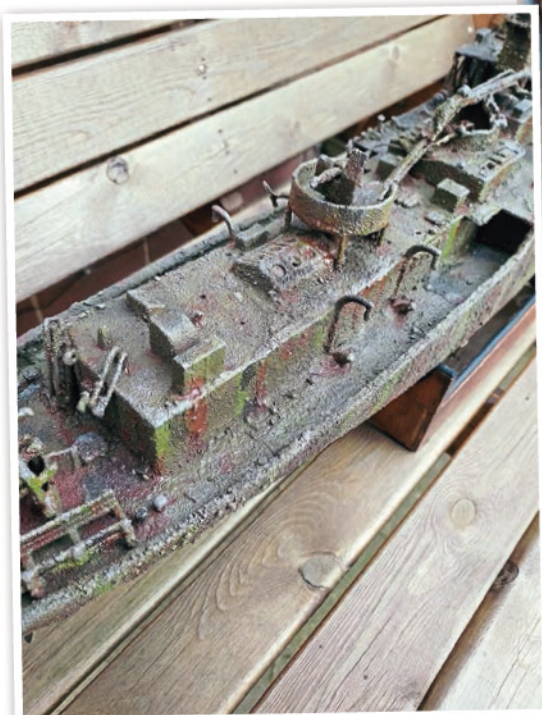


The finished model down at the lakeside where Simon and his fellow club members sail, as photographed by fellow enthusiast Michael Smith.

How to wreck a relationship?

Having completed this process, you can relax and admire your handywork, while wondering if your significant other will allow the model to be displayed in the lounge! ●

"I used a semi-gloss varnish to create a slightly 'wet and slimy' impression"



Above and right: Note how the colours and pigments been laid down, highlighting certain areas while at the same time not obscuring any of the ship's defining lines.



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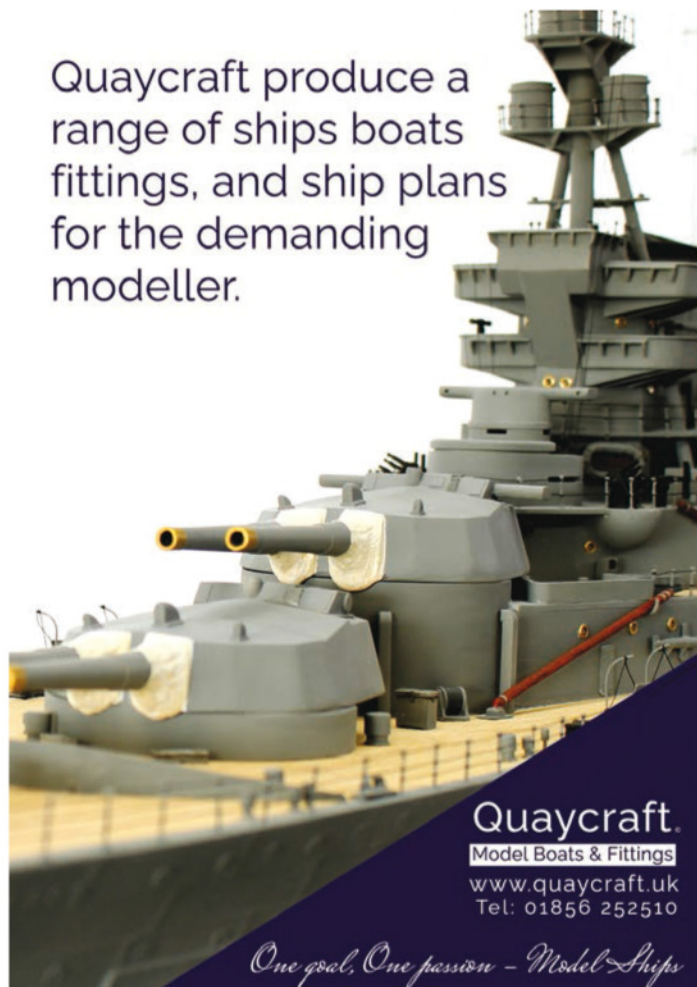
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THE TARDIS

Ashley Needham shows off his latest, no sonic screwdriver required, bumper boat regeneration

It had to be done. Having made some Dalek tops for the bumper boats (Earth date January 2023 Model Boats), it seemed only right that some opposition was forthcoming, and WHO better than the Doctor in his TARDIS? OK, the doctor is not visible, but the iconic blue box is all we really need. Unfortunately, the TARDIS cannot be to scale viz the Daleks as it would have to be rather large, but it's not so far off Barbie size.

Plans stolen from Gallifrey

That's the Doctor's home planet for those not keeping up, but fortunately we don't have to burgle a planet far, far away as Earth's internet is a mine of useful information and there are numerous images available to use as points of reference. I was lucky enough to be able to take measurements from a large plastic TARDIS toy I have and then scale them up a bit. It was, therefore, time to break out the

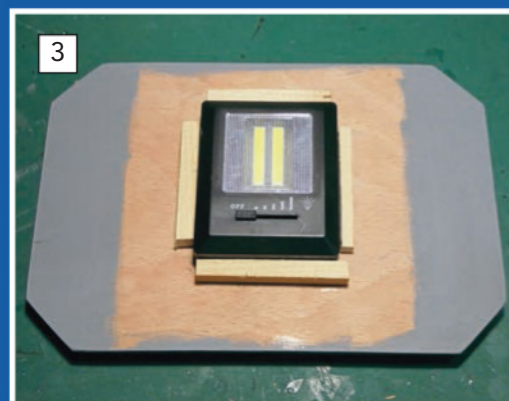
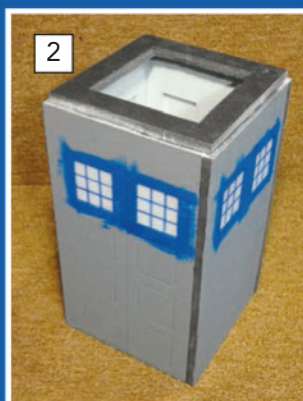
SPAR [Sharp Pencil And Ruler] design package and get creative on a large sheet of paper. As with the Daleks, the width of my TARDIS was constrained by the width of the bumper hull, and also by the sheet size of the 10mm thick grey Styrofoam I would be using. Although the bumper hull would take a 7 1/2-inch base width, this would give quite a tall box. Instead, keeping the base to 6 1/2-inches gave a scale box height (just the sides, so not including the pointed roof) of 280mm and enabled a four pack of 300 x 600mm sheets to be purchased via mail-order (see **Photo 1**), and I could cut three TARDIS sides out per sheet.

As easy as it gets, and it was fairly easy...

...Until it all fell apart After more than a few evenings making quite a decent box-shaped TARDIS (see **Photos 2 and 3**), with white opaque windows and a translucent top light,

all lit up by an LED battery light (see **Photo 4**), I finally put it on the weighing scales, and it was far too heavy, at 447gm. If that doesn't sound particularly heavy for a boat top, I might remind you that a Barbie bumper top is 300gm, and a Dalek only 200gm. Not only that but the weight appeared to be mostly up top. That wasn't going to work – I'd simply have to scrap it and start again (sob, sob). At least I could use the bumper base, although of course I wouldn't be using the LED light.

Although it meant it wasn't going to look as good as originally hoped, a semi-3-D approach would have to be taken, à la Dalek construction. Not all the work was wasted though, as I still had the proportions worked out, and a card template to make the indents for the panels and windows. This time round, just two sides were cut out and indented on both sides, by which I mean a blunt pencil was run around the template to intent lines



representing the panels and so on. They were both cut vertically in half so that I could glue a pair of them together with a 10mm square strip in the middle (see **Photo 5**) and then glue the other sides on against that strip. Although this sounds a bit cack-handed, it meant that the individual panels as viewed side on would all be of the correct width. Without the insert, bearing in mind the panels are 10mm thick, the centre wouldn't be in the right place.

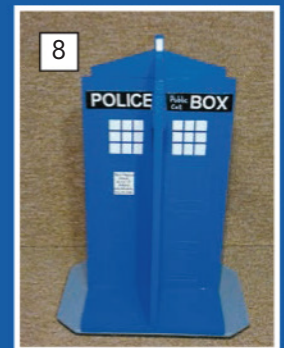
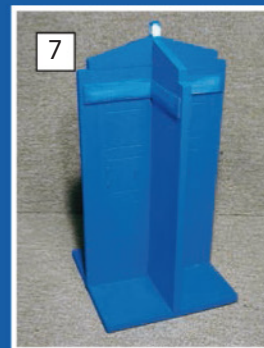
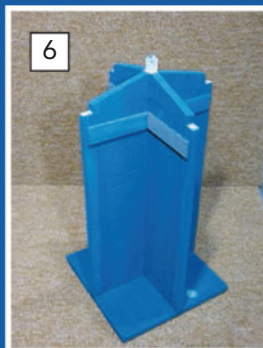
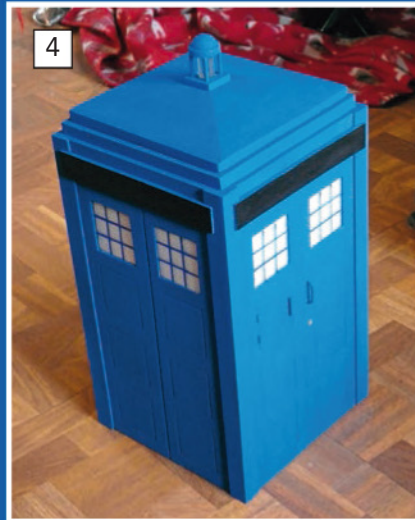
For a change, I used a special glue made for styrofoam, Styrocoll (again, see **Photo 5**), which I found in a garden centre (of all places). Although this takes a few hours to harden up, it's very easy to use and dries clear. So, once the glue was properly dry, the block was stuck on a square base of 5mm styrofoam (see **Photo 6**) and four separate triangular roof sections were cut out and attached on top. Small pieces of cocktail stick doubled up as door handles and lid hinges. Finally, a centre oblong of foam was let into the centre of the roof to do duty as the light, and strips of foam representing the 'Police Box' sign were glued in place – eight in total, as there are eight sides to my four-sided *TARDIS* (it's to do with dimensional reality, don't you know!). Having primed the *TARDIS*, I perched it on the bumper base and... it simply didn't look right. Too thin, I thought; so styrofoam strips 5mm wide were added to the outer edges of the sides and these make all the difference! You wouldn't have thought that 10mm overall would matter, but there we have it!

Paint your wagon

TARDIS dark blue is just too dark to stand out on the pond, so a brighter blue was chosen and, after a coat of blue/grey primer (see **Photo 6**) was applied, the entire edifice was painted. Once dry, the windows and top light were finished in a slightly toned-down white, and the sign boards painted black (see **Photo 7**). Window bars were drawn on with a blue permanent marker; this proved quite effective and was certainly easier than (for instance) cutting loads of thin paper strips and sticking them in place! Script for the all-important 'POLICE BOX' sign was created from peel and stick vinyl lettering sourced from the spares box (15mm in this case) and applied, followed by the telephone door notice and a bit of arty hand painting for the 'Public Call' lettering between the 'POLICE' and 'BOX'.. On completion, the whole lot was stuck on to the previously made bumper hull base (see **Photo 8**), although not until I'd cut off the now unneeded LED light support pieces.

A trip across time and space

It's not a replica, more like a 'work of art', but nevertheless fit for the purpose, and instantly recognisable (which is all that matters). My *TARDIS* only weighs 217gm, compared to the 300gm of a Barbie in her car, and, just like the 200gm Daleks, the difference was made



up with lead strip underneath the battery to aid stability. A test on the pond confirmed that the *TARDIS* performed pretty much as a standard bumper and was stable on its hull, or at least, as stable as the Barbies and Daleks! Spinning proved no problem, and a ramming test on the jetty similarly threw up

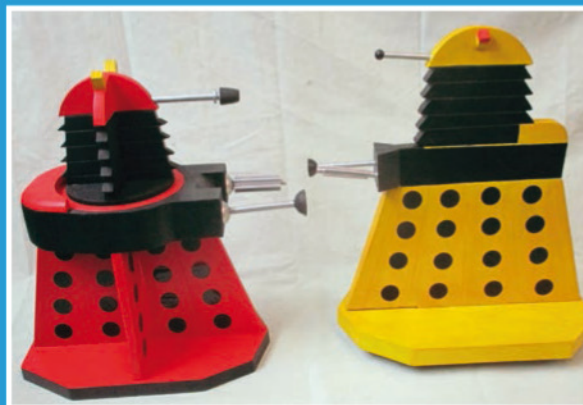
no issues. It looks a bit surreal really when on the water with the Daleks and frightened Barbies. Oddly, spinning the *TARDIS* seems quite natural, as that's how it is depicted flying through the time vortex!

Hang on...What's that funny noise? Where's my *TARDIS* gone? ●

Daleks: Time And Relative Dimensions In Space

Since building his original Daleks (see the January 2023 issue of MB), Ashley has since made three 'flat pack' Daleks for fellow club members (one 'classic', one blue, and one yellow). The tops for these were formed from 15mm foam shapes which slot into

their bases, therefore being easier to store and transport (because we don't all have the luxury of a *TARDIS*). And Ashley points out: "Oddly enough, they look OK on the water with the 3-D ones, proving that 'the look' is all you need!".



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Spookoiny

Glyn Guest provides step by step construction instructions for the 'stand-off scale' World War II Russian destroyer that can be built working from this month's free plan

I must confess to having a fondness for models of warships, especially destroyers. These were the first types of model boats I built, their appeal stemming from the fact that they always seem to be doing something purposeful, even when sailing a random course on the water. Over the ensuing years I've built numerous models based on British and American destroyers and, occasionally, ones from other navies, too. A model taking inspiration from a Russian class, therefore, was a tempting proposition when looking to add something a little different to my fleet.

The result was this model, based upon the Russian Type 7U destroyers in service

during World War II. She is built to a scale of approximately 1:140, which produces a model length of 32 inches (81cm) and a weight of 3.75 pounds (1.7kg). Construction is mainly from balsa sheet.

The prototype has twin propellers driven by individual RE385 motors and a single six cell Nimh battery pack. A single motor and propeller could, however, be used instead.

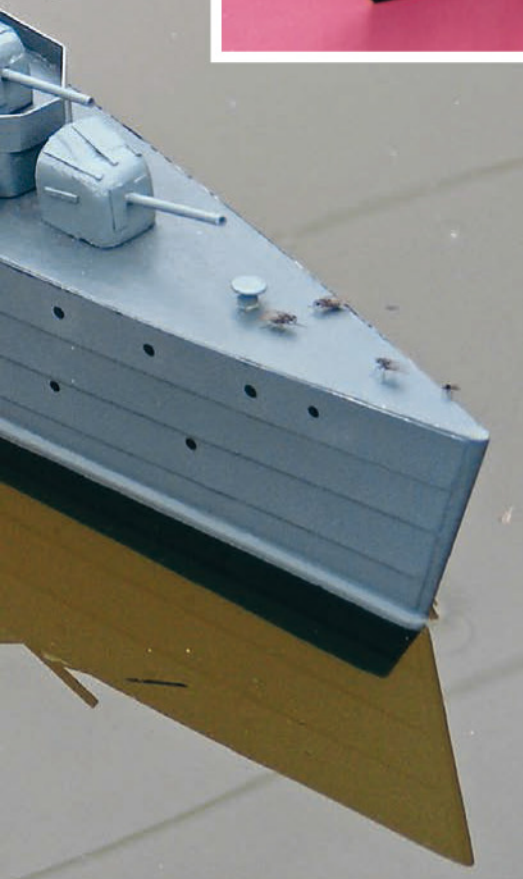
Type 7U

With some external help, the Russian Navy started to be rebuilt during the 1930s. Italy gave assistance with warship design, although this was something of a "mixed

blessing", as while Italian knowledge and experience proved valuable, design criteria suitable for operation in Mediterranean waters could not always cope with the conditions that the Russian Navy had to operate within.

The Type 7 destroyer was a result of this collaboration and would form the backbone of the wartime Soviet destroyer force. The initial builds featured a single funnel, with boiler rooms ahead of the turbines. Problems with their machinery and structural weakness, though, stopped construction at 28 vessels, with the Type 7U design then replacing them.

The Type 7U was based on the preceding



After the German invasion of Russia, the Soviet Navy had a limited role to play, since efforts were concentrated on land warfare. Nonetheless, I felt that these vessels had an attractive profile and would, hopefully, produce a successful R/C model.

Seeking information

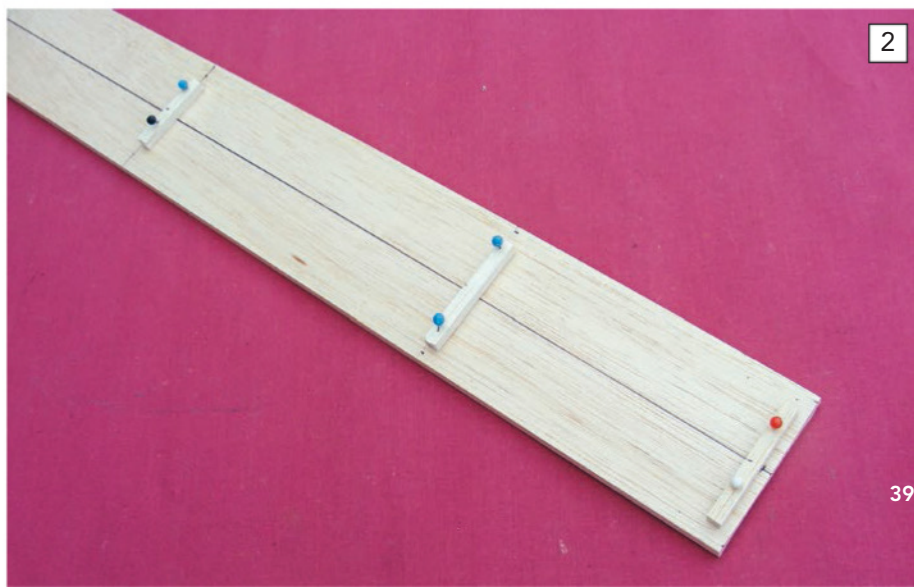
The combination of their nationality and being built during a war did not make them well known vessels. This was reflected in the quality of their photographic record. Reliable drawings were also scarce, often limited in detail, and sometimes contradictory. This latter problem could be

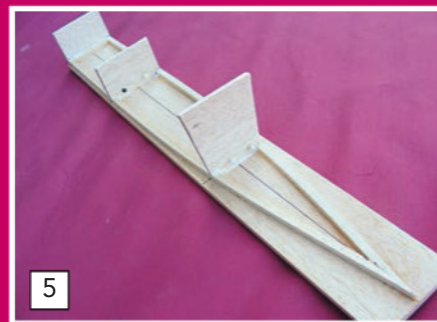
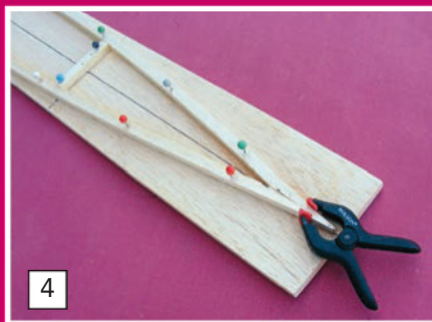
attributed to the wartime alterations and improvisations that inevitably occurred. Thus, no attempt could be made to base this model on a specific vessel.

Rather than abandon the project, I therefore drafted a design from the best combination of data I could assemble. As the model was intended to be a 'Stand Off Scale' type with simplified construction, this didn't seem to be a serious problem. I've always considered it better to have a reliable model that looks and performs well on the water than a 'perfect' scale ship which is risky to sail. This also explains the totally fictitious name!

design but with more attention being given to hull strength. The biggest change, however, was the adoption of 'unit machinery', in which two separated boiler rooms powered two equally separated engine rooms, in turn requiring two funnels.

The unit layout of the machinery did improve the survivability of these warships and the 'U' in their designation stood for 'Improved'. The only problem was that the hull dimensions weren't increased from the previous Type 7 vessels and this unit layout occupied more of the hull volume. This led to many sailors feeling that the 'U' actually stood for cramped and uncomfortable!





Scale choice

The length and beam of these destroyers was reported to be 370 by 33.5 ft (112.8 by 10.2 m), which using my favoured 1:144 scale would produce a model somewhat smaller than I was happy with. The beam would have been 2.8 inches (71 mm), which would likely lead to poor transverse stability.

A few moments with a calculator suggested that a scale of 1:134 would give me a beam of 3 inches (76 mm), which looked more promising. This would, however, give a length of 33 inches (84 cm), which would be just over the length for a plan to fit comfortably on an A1 sheet. Changing the scale to about 1:140 produced a model fractionally shorter and was used instead, but the beam was kept at 3 inches!

I'll say this for the first, but not the last, time: models based on slim warships **must** be built without adding too much top weight. This means that superstructures and details on and above deck level must not be any heavier than they need to be to maintain their shapes. Likewise, all internal items, especially ballast, **must** be placed as low as possible within the hull and prevented from moving. Destroyer models will always 'roll' when turning tightly at speed, but being 'weight conscious' will ensure they never forget which way up to float!

Construction material choice

No surprises here: sheet and strip balsa were used for the prototype in order to create a strong but not overweight hull. This is basically a box made on a balsa sheet base, with balsa sheet sides and transverse bulkheads. The bow and stern shapes are made by pulling the sides inwards. The internal corners of the hull are reinforced with balsa strips. As much of the deck as possible is removable for good access. A simple balsa strip 'plug' secures the deck to the hull and keeps water out.

The following list ought to cover most of model's construction:

- 1 sheet of 1/4 x 3 inch (6 x 75mm)
- 2 sheets of 3/32 x 4 inch (2.5 x 100mm)
- 2 sheets of 1/8 x 3 inch (3 x 75mm)
- 6 strips of 1/4 inch (6mm) square

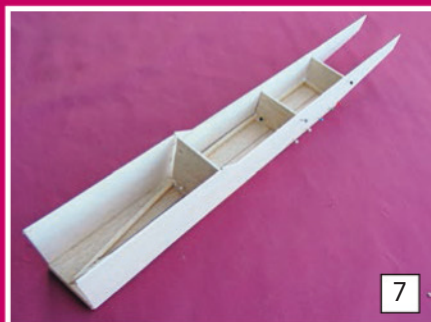
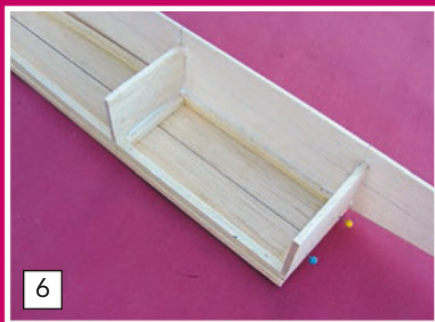
If you enjoy the luxury of being able to select your balsa from a good hobby shop, then take some time. You'll need straight (i.e., not bent, twisted or warped) sheets, with clean and square cut edges. Likewise, the grain pattern ought to be uniform; attractive as it might appear, a 'swirly' grain is likely to give you problems with cutting, forming and final strength.

There is no need to seek out 'rock hard' grades of balsa either; the strength of a model should be in its design and construction. That said, you should avoid the softest grades which will deform under the lightest of finger pressure. Luckily, the strength of balsa is closely tied to its density, so I just select sheets and strips with a 'middle of the road' weight.

The wood-wood joints were made with a 'water-resistant' wood glue. This has proven both convenient and more than strong enough, but I do take care to make the outside of my model's waterproof. Even if the insides look perfectly dry after a sailing session, my models are left opened up for a day or two just to be sure. I guess this is why the balsa hulls I built a few decades ago are still sound.

Two points about these glues... Firstly, even if they claim you can handle them after 30 minutes or whatever, I tend to leave them for a few hours between stages of the hull's construction when any bending of the balsa sheets or strips is called for. Even if a partially set glued joint doesn't pull apart, it could be weakened unnecessarily and create problems later. The second point, and something of an





obsession of mine, is to run a small bead of glue along the exposed edges and corners of joints and then smooth them into a fillet with my fingertip. This is to seal the joint and reduce the chance of cracks forming. Again, it seems to work, since my hull joints don't break even when I accidentally test them with an impact!

Wood-metal joints were made with epoxy adhesive. The usual comment about having clean oil and grease free surfaces can be made. It's also a good idea to roughen metal surfaces with a file. This doesn't need to be too heavy, but a surface with scratches will give the epoxy a firmer grip. To ease working with epoxy I tend to avoid the ultra-rapid setting types – something with at least 30 minutes working time is usually fine.

“The grain pattern ought to be uniform; attractive as it might appear, a ‘swirly’ grain is likely to give you problems with cutting, forming and final strength”

New ideas

A new model gives me the chance to try out new ideas in construction and operation. This is usually limited to one new idea per model to avoid the possibility (or in my case probability) of two or more ideas interfering with each other and making their value difficult to assess. This ‘rule’ was broken when building Spookoing, as I felt that the four new ideas would not conflict.

The first of these was to improve the shape of the simple balsa box hull by starting to bend the side sheets inwards on the hull base to meet at the bows a shade earlier than I have done in the past. I suspected this might improve both appearance and performance and was worth trying.

My usual approach would be to install the receiver in a compartment accessed by a removable portion of the forecastle. However, these vessels had a relatively short forecastle and so the second idea was to just make the main deck removable. Thus, with less freeboard I had to make sure that no water would reach the receiver.

The third idea was to install twin motors with the same ‘Together Or Mixed’ control that had been used in the Earnshaw model (see Model Boats February 2016). This system worked well in the Earnshaw and I wanted to see if it was also viable in a slimmer destroyer hull,

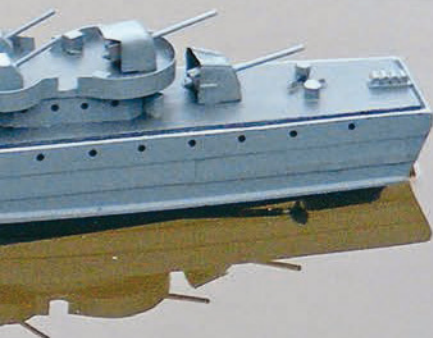
where the drivelines are closer together and hence have a reduced turning effect.

The final new idea was caused by my need to use a dark grey colour on the hull sides, superstructure and fittings. Humbrol No. 5 (Dark Grey) would have been perfect. My local DIY shop, however, only had cans of PlastiKote spray paint in stock. Looking through the colour options, one appeared potentially suitable, even though it was described as medium rather than dark grey. So, despite having never used this type before, I decided to take the risk.

Personal choice

The prototype was designed for, and built with, twin motors and propellers. It works well with this layout but, if you want, a single motor and propeller could be substituted. I have no doubt it would give you good performance and handling. It might not have the maneuvering advantages of being able to operate two propellers in opposite directions, but the single propeller would have a powerful effect on the rudder directly behind it.

You might decide you want to keep the twin propellers but don't need independent control of the motors. In this case, a single motor driving both propellers is an option. Gears could be used to connect the motor to the propeller shafts but I'd be inclined to use pulleys. It's much easier (probably quieter too?) to get good alignment with pulleys and their drive belt.



“Destroyer models will always ‘roll’ when turning tightly at speed, but being ‘weight conscious’ will ensure they never forget which way up to float!”





"This 'rule' was broken when building Spookoiny"

Another option would be to enlarge the model design. Increasing the dimensions by a quarter (25%) will allow the model's displacement to almost double. Even a more modest 10% increase in size would result in model that can carry about one third extra weight.

If you increase the size of this design, it may be possible to use alternative materials in its construction, such as plywood. If, however, you build to the plans size, stick to balsa or you'll risk ending up with an unstable model.

Basic hull construction

This should, hopefully, be simple, as only straight cuts in the balsa sheet and strip are required – but they must be accurate. For this reason, it's a good idea to check that they fit together properly before reaching for the glue.

My hull sides were cut from 3/32-inch (2.5mm) balsa sheets (see **Photo 1**). You can cut them out separately, or use the first one as a template for cutting out the second. My usual method is to pin the two balsa sheets together and carefully (with the blade always perpendicular to the sheets) cut both sides out in one go.

The three bulkheads and transom were cut from thicker 1/8-inch (3mm) balsa sheet. Note the direction of the grain. These items should be checked against the hull sides; B1 and the Transom ought to be the full depth of the sides, whilst B2-3 will be shorter.

The hull bottom was made by gluing 1/4 inch (6mm) square balsa strips onto a 1/4 inch

(6mm) balsa sheet. I found it handy to draw a centerline along the bottom sheet to aid the accurate positioning of parts. Note that the two longitudinal strips must be 22 inches (557mm) to match the lower edge of the hull sides from the bows to B3.

The transverse strips, which locate the bulkheads, were first glued to the bottom sheet (see **Photo 2**). The longitudinal strips were added but only glued to the parallel part between Bulkheads 2 and 3 (see **Photo 3**). Once totally dry, these strips were pulled together so that a 'scarf' joint could be made where they meet at the bows before fully gluing them in place (see **Photo 4**).

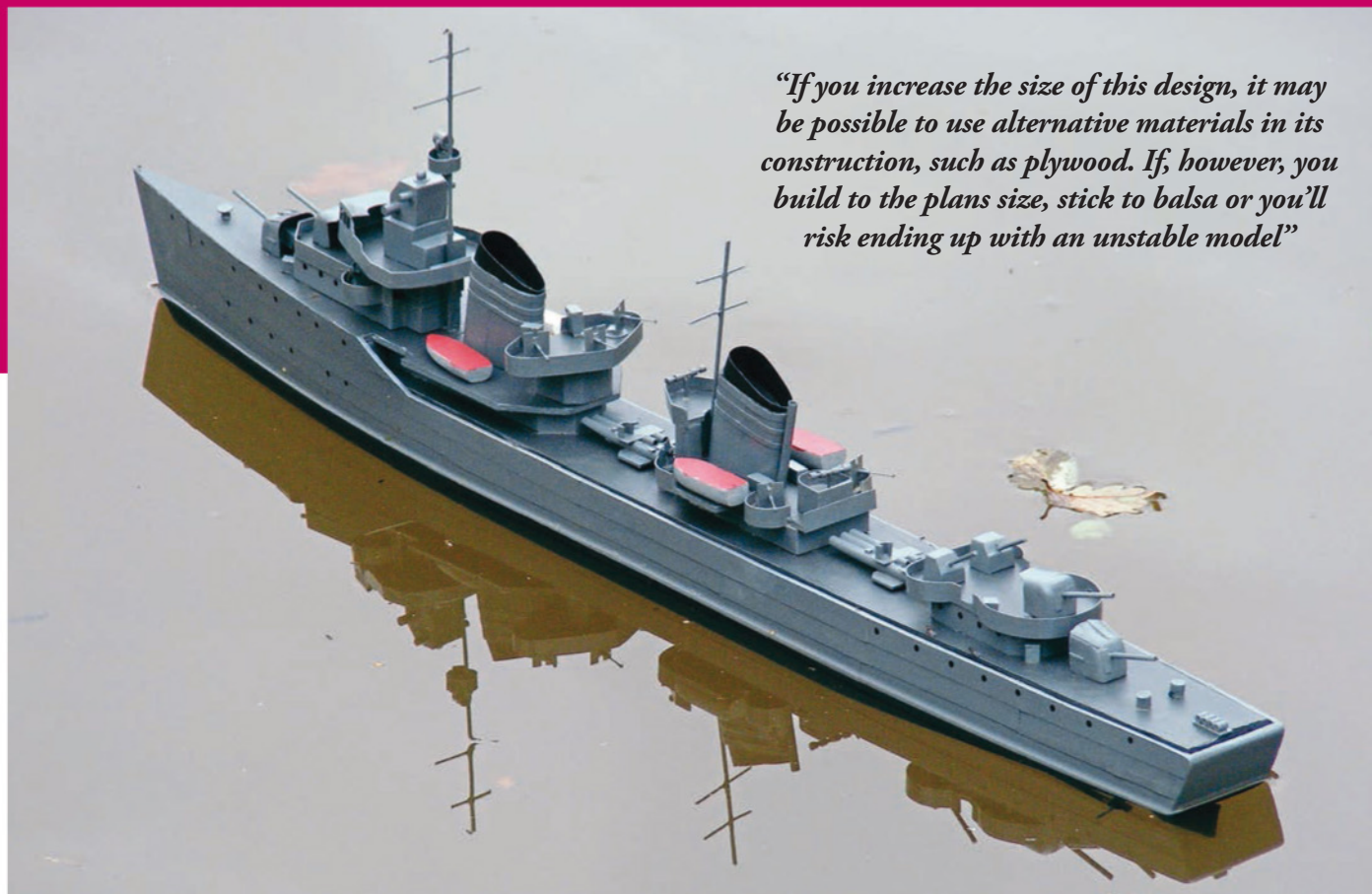
After the glue had set, the fit of the base, bulkheads and sides were checked. It is much easier to correct any problems at this stage rather than risk having to tear glued joints apart later! Reassured everything did fit together as anticipated, the bulkheads were then glued to the hull bottom, taking care

to position them correctly and keep them upright while the glue set (see **Photo 5**).

The first hull side was added by first gluing to B2, B3 and the hull bottom between them (see **Photo 6**). The second side was added in the same way (see **Photo 7**). The structure was then left well alone until the glue had fully hardened.

The forward hull section required the hull sides to be pulled inwards and glued to B1 and the hull base, as well as together where they meet at the bows. The curves demanded are modest and I found that liberal use of pins, supplemented by clamps, at the bows was sufficient to hold the glued joints together while they dried (see **Photo 8**). Try to avoid being 'heavy handed' as it's possible to push the unsupported sides too far inwards, which results in a shape you definitely do not want! Likewise, the clamps at the bows should avoid doing this.





"If you increase the size of this design, it may be possible to use alternative materials in its construction, such as plywood. If, however, you build to the plans size, stick to balsa or you'll risk ending up with an unstable model"

As the bows of a model boat seem to be the area most prone to damage, the inside of this joint was reinforced. This involved nothing more than a strip of glue-soaked fabric being pressed across this joint (see **Photo 9**). This precaution has served me well through many 'accidents' and is strongly recommended.

The rear of the hull was completed by first gluing the transom piece between the two hull sides (see **Photo 10**). Care needed to be taken to ensure that both sides had the same curve, otherwise a bent hull would result. This was avoided by drawing a centerline on both the transom and the ¼ inch (6mm) balsa sheet which formed the rear hull bottom, and by making any adjustments before my glue set (see **Photo 11**).

The joints between the hull sides and bottom also needed internal reinforcement with balsa strips. Two lengths of ¼ inch (6mm) square were trimmed to fit from B3 and the transom and glued in place. To keep them pressed in place, a couple of balsa scraps were used as wedges while the glue set (see **Photo 12**).

To both strengthen the hull access opening and hold the removable deck section, balsa strip was glued around inside of this opening. These edging strips were fitted across the top of B2 -3 and laid 1/8 inch (3mm) below the top edge of the hull sides. This was to allow the deck to fit flush within the sides. Strips were also glued across B1 and the transom. I used to raid my wife's box of clothes pegs and use these as clamps to hold such strips in place. Perhaps not surprisingly, though, I

found this practice made me most unpopular on washing days, so I've had to desist and buy my own clamps (see **Photo 13**).

Removable deck

The frame that fits on the underside of the removable deck section to plug into the balsa strips around the hull opening had to be made 'in situ' to ensure a good firm fit. It was made by first cutting the two longitudinal strips to fit into the opening, then trimming the transverse strips so they would push these strips snugly (but not with excessive force) against the strips glued to the hull sides (see **Photo 14**). Great care was taken to avoid gluing this frame to the hull.

Only when I could be confident that the glued joints were fully set (go have a nice meal, watch a film or allow your wife to take you out shopping – although I can't honestly recommend the latter!) was the frame eased out of the hull; not before, however, I had marked the top surface! If when doing this yourself it seems to be tight, then a light sanding can be undertaken before refitting it into the hull opening. If necessary, you'll find repeating this until it can slide in smoothly but without creating any noticeable gaps between frame and the fixed strips is all that's needed.

The top surface of the frame (which is why you must mark it before removing it from the hull) was stuck centrally to the underside of the deck, a piece of 1/8 inch (3mm) balsa sheet, which was slightly longer than the hull opening. Once dry, the excess material had to be trimmed away so the deck would fit snugly inside the hull opening (see **Photo 15**). I used

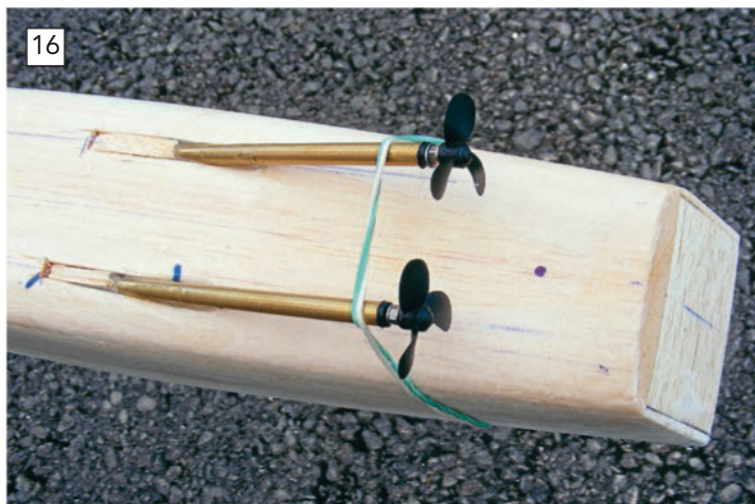
a piece of ¼ inch (6mm) square strip to draw a cutting line on the underside of the deck around the edge of the frame. By carefully cutting just outside this line, then equally carefully sanding back, a neat fit was made. If you find you've removed too much and have created a large and/or uneven gap between the deck edge and hull sides, then glue a strip of balsa to the edge of the deck and try again.

Shaping the hull

The excess balsa was cut from the bottom sheets using a knife; cautiously, of course, moving the blade away from my body! The edges of the hull, where the sides meet the bottom, required shaping to match the cross-sections on the plans. I used a razor plane to remove the bulk of the material and then sanding blocks to produce a smooth surface. Care was taken here to avoid removing too much, hence avoiding the risk of weakening the hull.

The transom, sides and bottom were sanded to produce a smooth and flat surface, i.e., no rounding of the corners. Sanding blocks (mine are no more than convenient pieces of wood around which various grades of sandpaper have been pinned) are the best way to ensure a flat surface.

The junction where the two side pieces meet at the bows was also sanded flat, which produced a better gluing surface for a strip of harder wood. This, like the internal glued strip of fabric, acts to reinforce the bows in the event of an accident. After the glue had fully set, this strip was carved and sanded to blend into the hull shape.



The external hull surfaces were then checked for any defects such as small gaps and pinholes. A tube of ready mixed fine surface domestic filler is handy for this task.

Installing the drive line

A word of warning now... My prototype was fitted with two RE 385 motors, which proved ideal, but the similar RE 360 motors would serve as good alternatives. Using a six-cell Nimh battery pack (i.e., a 7.2-volt supply), a comfortable top speed and general handling was achieved. However, if you're tempted or someone suggests using RE 380 or SPEED 400 motors, I'd recommend you not to. They may look the same as 385 motors but they are way too powerful for a model such as this. There again, you may feel the desire to amuse any spectators to your maiden voyage as the model hops across the water before, likely or not, self-destructing in the middle of the lake.

A RadioActive brand 7-inch (180mm) shaft/tube and 30mm diameter three-bladed propeller assemblies seemed to be the best match for this model, and two were bought. For maximum turning effect when running motors in the opposite directions, the motors had to be positioned as far apart inside the hull as possible. It was a simple matter to work out how far apart the motor shafts would be with the motors pressed up against the inner surface of the hull sides. The two slots in the stern bottom sheets could then be cut, plus two holes in B3, so that the propeller shafts would line up with the motor shafts.



"This is admittedly the worst situation possible, but one that prudence dictates you must allow for"

Making the holes and slots for the tubes slightly oversize allows you to make final adjustments to ensure the shafts will be parallel and aligned with the motor. I used wedges made from scrap balsa to achieve this and trimmed off the surplus once things looked right. The tubes were then glued to the bottom sheet and B3 with epoxy (see **Photo 16**).

I opted to glue the motors into this hull, as there was little space for commercial motor mounts. Before doing this, the motors had interference suppression capacitors and power leads soldered to their terminals. If you've ever tried to work with a hot soldering iron inside a hull, then you'll appreciate why it's sensible to do this before installing motors!

Short lengths of stiff plastic tubing were used to keep the motor and prop shafts inline and allow for the couplings. A little experimentation showed that a strip of balsa could be used under the rear of the motors to keep things aligned. After this, both motors were secured to the hull sides, support strip and hull bottom with that product that claims to make nails a thing of the past. An alternative would be silicone sealant (see **Photo 17**).

Past experience had shown that silicone fuel tubing was strong enough to make good connection between motor and propeller shafts when using RE 385 motors. But, I did experience a problem in making a firm grip onto the small diameter propeller shafts. In

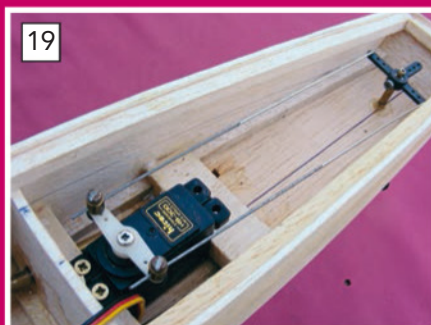
the end, some small diameter plastic tubes had to be forced onto these shafts before the silicone tubes would grip.

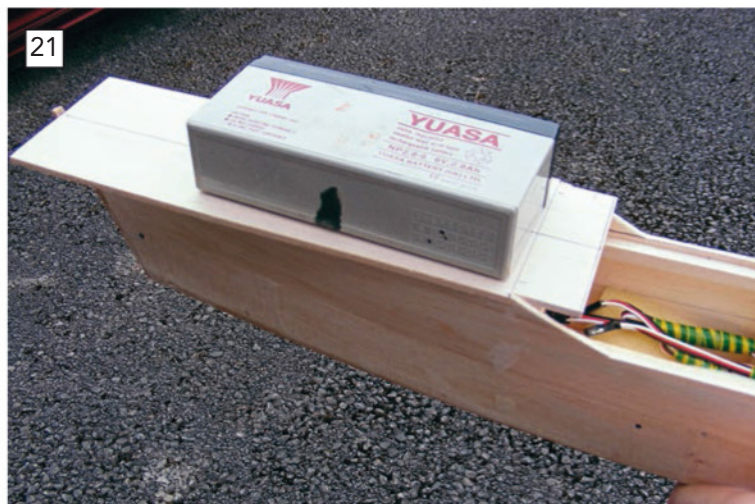
Steering gear

A commercial rudder assembly could have been used but would have required modifying to suit this model. It was little extra trouble to make my own from a short length of brass tube, a steel shaft (which was a close fit inside the tube) and some thin aluminium sheet. The brass tube was epoxied into a hole made through the hull bottom. Provided you have not used a very soft grade of balsa and made adequate fillets of epoxy, no other support ought to be needed.

After deciding the shape of the rudder required, the steel shaft was bent into a 'U' shape, which was just less than the rudders depth. The rudder blade was cut from some thin aluminium sheet and folded around the shaft, the aim being to get the top of the blade perpendicular to the shaft and have about 1/3 of the blade area ahead of the shaft. The rear of the blade where the edges of the sheet met was held together with a couple of clamps.

Once happy with my rudder, the clamps were removed, the inner surfaces of the blade given a coating of epoxy, and everything reassembled. Now, with epoxy being a fluid, albeit a very viscous one, it will try to flow out of the blade. This can be prevented by sealing the open bottom edge





with adhesive tape or, my favorite, some modelling clay, and keeping the rudder upright. Doing so also gave me the chance to add some more epoxy to the open top edge of the rudder.

After the epoxy had set, the rudder shaft was inserted into the tube and the tiller arm dropped onto the shaft. This allowed the shaft to be marked and the excess to be cut off – a quick and easy procedure that's way more reliable than simply hoping your shaft will be long enough and maybe finding it isn't!

The external surfaces of the rudder blade were then cleaned up with some wet sanding pads. This provided a better key for the paint. It may also prevent any teetotal modellers taking offence at my source of aluminium sheet (see **Photo 18**).

The tiller being double sided allowed me to make a 'closed loop' linkage, with two wire links to the servo arm. The servo was secured to strips of balsa glued across the rear of B3 and the hull bottom (see **Photo 19**).

First float

It was felt prudent to give the model a floatation test at this stage. This would permit me to check the drivelines, rudder linkage and positioning of the rest of the R/C items. Also, the amount of internal ballast and its position could be determined; this was especially needed for any ballast that had to be placed in the bow compartment, since the fixed deck would make this space inaccessible later.

To allow this, the hull's external surfaces needed waterproofing, so I gave them a coat of thinned cellulose dope, followed by two neat coats, lightly sanding between the coats. Personal choice/experience could suggest suitable alternatives.

As soon as the hull was placed in my testing basin (the garden pond after all the weeds had been skimmed off) the need for ballast was obvious. Pieces of lead were used for the ballast since, being dense, it occupies a small volume and helps to keep the models center of gravity low to ensure stability.

As expected, ballast was required in bow compartment and this took the form a couple of layers of thin lead sheet (actually lead flashing, as used in the building trade). This was cut into triangular shapes to fit on the hull bottom between the balsa strips. With all

the internal items secured, the hull displayed adequate stability and could be heeled until the top edge of the sides were at the water level and would spring upright smartly when released.

The drive lines were then tested and both motors created a healthy propwash. Testing the rudder response was limited due to the modest size of the pond but looked OK. After a few minutes of testing a problem was observed, in that the connections on the propeller shafts were slipping at full power – clearly something worth discovering on the garden pond rather than the middle of a large lake!

Coupling conundrum

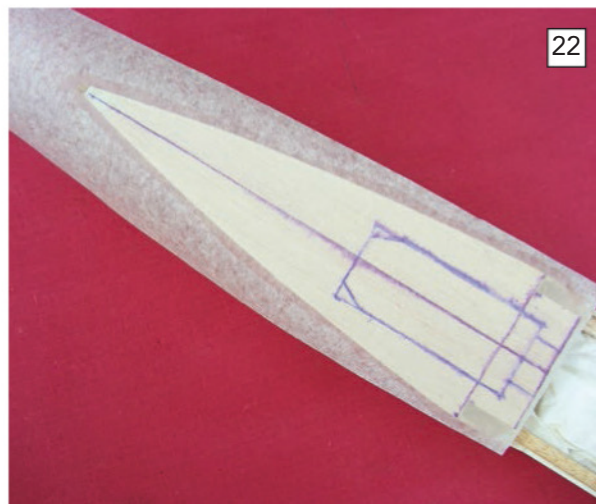
The cause of the coupling slipping was the small diameter of the wire used for the propeller shafts. Searching through my stock of material, I found nothing that would hold onto the shafts when the motor was stalled. This is admittedly the worst situation possible, but one that prudence dictates you must allow for.

One idea was to solder a length of brass tube to the end of the shaft. This would enlarge the shafts diameter and ought to make a more secure connection with the silicone tube. Alas, it would also prevent the propeller shaft from being easily removed from the tube. This might not seem to be a problem to some, but past experience has shown that anything difficult to remove is going to need removing at some point – a situation best avoided.

I suppose I could have searched the internet for suitable commercial couplings that would match both motor and propeller shaft but making my own seemed a quicker solution. This was achieved with some metal collets which would grip firmly onto both shafts with a short length of steel spring soldered between them. These were more than strong enough and when firmly screwed to the shafts I was confident nothing could slip (see **Photo 20**). In hindsight, though, it might have been easier to fix the collets to the shafts and push a rubber tube over them.

Finishing the hull

After the initial floatation test, all the loose internal items were removed, save for the



ballast in the bow compartment. This ballast was firmly glued in place and left to fully set before doing any further work on the hull.

The fixed forecastle (1/8 inch/3mm balsa sheet) was glued in position using a convenient weight to keep things in place (see **Photo 21**). Note that this deck extends past B1, and needs the edges trimming to clear the small 'notches' in the hull sides. The bulk of the excess balsa sheet can then be trimmed way from the edge and sanded to blend in with the hull shape.

Drawing a centerline down both the fixed and removable decks, and the positions of the superstructure blocks, greatly assisted later construction. Before that, the decks were sealed using dope and model aircraft tissue. Firstly, a thinned coat of dope was applied and, when dry, lightly sanded. Using slightly oversized pieces of tissue placed over the decks, neat dope was brushed onto and through the tissue, (see **Photo 22**). This was done from the center of the tissue panel, working the brush outwards to avoid creases forming. Once dry, the excess tissue was removed and, after a light sanding with fine paper, another coat of neat dope applied. This produced a smooth, grain free surface quickly, without adding much weight.

Looking at photographs of the full-size vessels revealed that the hull's steel construction could often be seen. This was suggested on my model by gluing slightly overlapping thin card strips to the hull sides (see **Photo 23**). After the card strips had been trimmed, the external surfaces were given two more coats of neat dope; this seals the card plating and, because each coat dissolves into and bonds with the previous one, produces a surprisingly robust surface.

Superstructures and details

These at first looked complex but could be broken down into simpler shapes and made up from spare pieces of balsa (see **Photo 24**). The vertical sides were covered in thin card before sealing with dope, while the decks had the tissue and dope treatment.

Note that the main deck superstructure that abuts the rear of B1 might need the top reducing to fit under the forecastle extension (see **Photo 25**); the aim being to create a firm fit but without stressing the structure. The partially completed superstructures are shown in **Photo 26**. Card strip was used to make bulwarks around parts of the superstructure decks. I then found out that many of these 'bulwarks' were in fact canvas wind dodgers fixed to railings, but at this scale solid bulwarks look OK.

The funnels were formed by wrapping card around balsa formers – the shapes are shown on the plans. By angling the bottom former, once the excess card was removed this created the desired rearwards rake (see **Photo 27**). The upper former was recessed, which allowed a card strip to make the cap shape. Three card strips around the top of each funnel completed them (see **Photo 28**).

The remaining details are shown on the plans. The aim was, like many artists do, to simply suggest them with the right overall shape. Another aim when making them was to keep them as light as possible, by using card, balsa and plastic. The only metal bits were the two masts, rangefinders – which were made from brass tubes and wires soldered together, plus some of the gun barrels.

Painting

Looking at photographs of the full-size vessels showed some in camouflage. Most, however, were just dark grey. A camouflage scheme might be attractive, but my experience is that small models can pass unnoticed by less observant modellers; even brightly painted models can become invisible to some.

Your choice, of course, but I went for plain grey, which actually suits the model quite well. The hull sides, superstructure and details were sprayed dark grey (which PastiKote thinks is medium grey), while matt black was used for the funnel caps and the insides of the funnels. The decks were painted with a darker shade of grey, and the hull below the waterline gloss black. To add a little relief to these dull colours, the hulls of the ship's boats were painted a lighter grey with tan covers. The motor launch is slightly smarter, its deck having been finished in a light brown and its cabin in white.

The hull and superstructures looked bare without any portholes, so, some were added using the end of a metal rod dipped into gloss black paint and placed on the model (some care/practice is needed here if this method is new to you). Finally, the whole model was given a couple of light dustings with clear satin varnish to create a uniform effect.

Reinstallation

All the items removed after the first floatation trial now had to be refitted (see **Photo 29**). The six-cell battery went in ahead of B2, which left enough space for the receiver to slip between the battery and B1, and the ESCs, being Mtroniks' small but very good 10 Amp MicroVipers, were comfortably sat between the motors and B2.

After refitting the rudder servo and linkages, the electrics were reconnected, switched on and everything worked as before. However, the model could not be sailed until a final ballasting trial was undertaken on the pond. As expected, the model's trim had changed a little with the addition of decks, superstructure and details. This called for some adjustment of the internal ballast before it could be firmly glued in place.

The model's final weight was some 60 ounces (1.7kg) and a measurement of the power drawn from the battery was around 10 watts.

TOM (Together Or Mixed) motor control

As stated earlier, one of the intentions of this project was to test if twin screws, with the ability to mix control of the motors, was a worthwhile proposition in a small and slim model. Considering the limited space inside of *Spookoiny*, it didn't seem sensible to try and squeeze a clever piece of electronics in to do this mixing. Fortunately, a more attractive solution had been found for another model – and this was to use the transmitter's internal mixing functions, which I'd already paid for.

You have to accept the fact, sad though you may feel it to be, that the majority of R/C outfits are designed for use with model aircraft. Luckily for model boaters this is no problem, unless you refuse to read the instructions that came with the outfit, or, I suppose, buy things without any accompanying instructions.

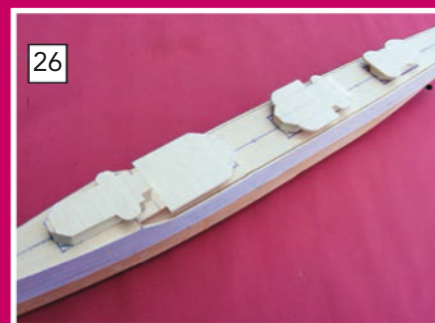
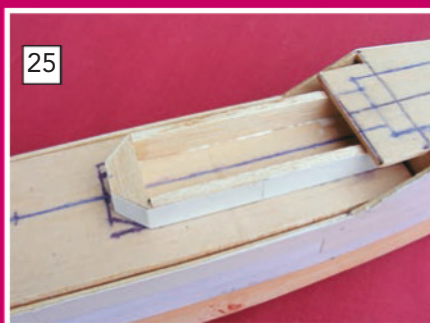
Using a transmitter with two dual-axis stick units, what we need to do is to arrange it so that the horizontal movement of the right-hand stick controls the rudder as normal. The vertical movement of the left-hand stick operates both ESCs to rotate the motors in the same direction. And now comes the clever bit... When the left-hand stick is moved horizontally, both motors will rotate in opposite directions.

With my transmitter, after reading the instructions, it was found that it had to be in MODE 1 (a term widely used by our aeromodelling cousins to denote which channels control which aircraft functions) and the 'V Tail Mix' switched on. The receiver connections were as follows.

<u>Aircraft Function</u>	<u>Boat Function</u>
Aileron	Rudder
Elevator	ESC for Motor 1
Rudder	wESC for Motor 2

More than likely, you will need to use the transmitter's servo reversing switches, or even swop the receiver's ESC connection over, to get the desired operation of the motors. You might find it easier to set this





"And now comes the clever bit..."

system up outside of the model, using servos connected to the receiver rather than to the ESCs, motors and batteries. In this case, you want both servos to rotate in the same direction when the left-hand stick is moved up and down but to rotate in opposite directions when moved sideways.

Hopefully, this description of the method of mixing twin motor controls and the instruction that came with your R/C outfit will be enough to achieve the desired result. There are, however, other ways to mix transmitter controls, so some careful experimentation might prove rewarding.

Sailing trials

My models tend to undergo a protracted series of sailing trials before I am totally happy. The pond tests for ballasting and R/C function tests have been mentioned earlier, but they can only tell you that the model floats the right way up and moves. My first real test is usually carried out on a local canal, which is nearby and usually quiet. There is also the lack of any fellow modellers to view my sometimes humorous antics with a new model!

The model proved stable and handled well with no obvious vices. My 'gripe sheet' (a list of problems or changes that need to be made), however, was not completely empty after this sailing session. One issue was a larger than expected turning circle of about 10 feet (3m). Another was that it was hard to make the model rotate on the spot without it creeping forwards or backwards. At least the insides stayed dry.

Back home, the rudder movement was checked and found to be around 30 degrees either way. This is a reasonable amount but I adjusted the rudder tiller linkages to increase it to about 40 degrees. Luckily, full rudder deflection did not foul the propellers nor anything else.

Checking the motor operation in the mixed mode showed that one motor might start turning before the other and, with just the horizontal movement, there was sometimes a difference in motor speed. I played around with the transmitter trims and did improve things, but only after making them worse of course!

Onto a larger lake and the model was given a thorough and prolonged 'shakedown cruise'. Stability was still good, and *Spookoyny* coped with rougher conditions quite well. Timing the model over a known distance gave me a top speed of about 3.5 ft/s (1.1 m/s), which corresponds to a full-scale dynamic speed of some 25 knots. While this might be less than a real destroyer's maximum speed, the model manages to look realistically 'busy'.

I was worried that the rudder's response might prove sluggish, since it lay between the two screws rather than immediately behind a single screw. In fact, this was not the case and for sailing around the lake and general maneuvering there was no noticeable difference. Increasing the rudder throw had, however, reduced the turning diameter to a more comfortable 6-7 feet (2m). On centering the rudder, the model would immediately return to a straight

course, which it could hold with only minor adjustments.

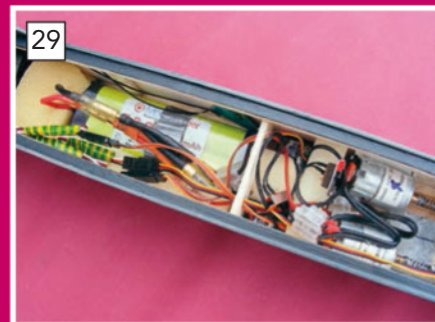
Astern sailing proved to be controllable, and the model could be reliably steered. The angled transom was handy as it prevented water rising up and coming over the deck – well, that is if you kept the speed at a reasonable level. A destroyer sailing at full speed astern looks silly anyway!

Playing with the motor mixing using the horizontal left-hand stick movement was a learning experience. Even after my careful adjustments, the model still had a tendency to creep forwards or backwards when attempting to just rotate, but after a few minutes the technique of controlling this creep by adding a little vertical stick movement became second nature.

Results

The four new ideas tried out on this model seem to have worked. The 'improved' hull shape and having the receiver in the battery compartment gave me no problems. Likewise, the use of a can of PlastiKote spray paint produced a good finish and I will have to look at what other colours are available on the local store's shelves.

As for the use of twin motors and mixed control, yes, this works – but for general sailing around on the water it isn't really needed. It could, however, prove very handy for negotiating tight spaces (perhaps the creation of some fiendish scale steering course designer?). I, though, will just enjoy sailing something that is a little different, both in appearance and maneuverability. ●





I.C. POWERBOATING BASICS

Derek Owen continues his beginner's guide

I recently (May 14) attended the second circuit race meeting of the year at our Elmbridge club and while rather early in these season and so slightly down in numbers, it was still well attended enough to put some great racing heats together. These events really are superb and if you can get along to one of them you will not be disappointed. The venue, located in Egham in Surrey (nearest postcode TW20 8RJ) boasts a large lake in a beautifully green setting, plenty of spaces in the car park, onsite toilets and plenty of food and drink

served by the dedicated catering team. A quick visit to the MPBA website (<https://www.mpba.org.uk/>) will provide you with directions and keep you fully up to speed with the dates for forthcoming events.

On this occasion my 15-year-old grandson entered the Sport 60 class. It was his first time racing a boat and only his second time ever running one. As mentioned in a previous article, Sport 60 is an ideal start to competitive power boat racing, and for some reason teenagers seem to have a natural ability to control these boats. Maybe all that

time spent on PlayStations and PC games has its plus points!

Hopefully, my contributions in Model Boats will encourage more youngsters and newcomers to give I.C. powerboating a go, and so this month we'll be looking at aesthetics...

Scenes from the second circuit race meeting of the year at the Elmbridge club of which Derek is a member, where a great time was had by all.





Typical products, including 2k primer, paint, hardener, clear lacquer and epoxy resin finishing resin used in conjunction with isopropyl alcohol.

Personalising your powerboat

Powerboats can, of course, be made from various materials, with carbon fibre, Kevlar and epoxy resin favoured by most of today's seriously competitive I.C. powerboat racers. These high-tech options produce a hull that is incredibly strong and yet remarkably lightweight.

Traditionalists, however, may still prefer wood, and will often simply opt apply a nice clear coat of gloss varnish to their hull to

bring out the natural beauty of the wood grain.

Wood is good choice for most watercraft due to its buoyancy, but it's also porous and therefore requires sealing. Most wooden boats are sealed with several thin coats of epoxy. I personally like to thin my epoxy with isopropyl alcohol (obviously there are other choices of thinner) to a water-like consistency so that it really soaks into the wood. With



A typical small paint gun such as this one can be used for more intricate work.

“With petrol or glow fuel there can be a very real danger of the fuel’s ingredients eating into your paintwork. Not what you want! So, what can be done to prevent this?”



Buying a spray compressor second-hand is often a cost-effective way to go.



For larger painting areas you can use a regular size gun

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Parts being masked, prepped, primed and painted, finally resulting, after being lacquered, in this beauty

patience, many coats of thin resin will build up to a glass like finish, which can be lightly sanded between coats and polished to finish.

If you're looking for more colour, so want to paint rather than purely varnish, then the above sealing method can still be used – however, more sanding down of the final coat will be required to provide a decent key for the paint.

At this point, though, we must address the fact that with petrol or glow fuel there can be a very real danger of the fuel's ingredients eating into your paintwork. Not what you want! So, what can be done to prevent this? Well, I recommend using either a coloured epoxy paint or a 2k good quality polyurethane paint (both being a two-part mix of paint and hardener). Each brand will have its own mixing ratio and paying full attention to the instructions is critical to getting the best results.

Personally, I first like to use a filler primer, which is also a 2k mix; this will help fill any small imperfections and when sanded down will give a superb base for the topcoats of paint.

If you wish to paint over a high-tech product, such as an epoxy carbon fibre boat, then you may need to use an etching-style primer to get good adhesion. I am far from an expert on paints, etc, but I have used these products several times and with acceptable results on my racing boats.





Just let your imagination take control of your artwork!



It's always best to read up and talk to people to get as much basic knowledge as possible – after which, you can simply let your imagination run wild with your personalised paint finish. Paints in a 2k format are available in aerosol cans or to mix yourself with a separate catalyst (hardener). You will of course need your own compressor and spray gun set up if mixing your own. Basic spray guns, etc, be purchased at affordable prices or, alternatively, grab a good used set up.

For those looking to go the extra mile, there are also clear 2k lacquers, which when applied over your paintwork will allow you to

achieve a stunning mirror-like finish. These clear lacquers are normally used by those who like to embellish their hulls with some airbrushed designs/artwork.

Last, but not least...

As many paint products can contain isocyanate and other potentially harmful substances, ensuring your workspace is well ventilated and that you always wear of a proper mask is of paramount importance. Likewise, before starting work with any product, make sure read the manufacturer's usage and safety recommendations first. ●



“For those looking to go the extra mile, there are also clear 2k lacquers, which when applied over your paintwork will allow you to achieve a stunning mirror-like finish”



TAYCOLS TARGETED

John Parker's handy guide to the model electric motors intended primarily for model boat propulsion produced by Taycol Limited of Bournemouth, England

The aim of this article is to assist with the identification of an old motor that you may either come across or see for sale on eBay, and to help explain where it fits in the Taycol range.

Please bear in mind that these motors underwent many detail changes over their years in production, including (but by no means limited to) whether the field laminations were painted or not and their colour, the materials used for the mounting brackets, assembly hardware (steel or brass) and bearing caps (brass or plastic), and so on. As a result, any motor you have may differ in these details, but the basic type should be readily identifiable.

Star

The Star low power 4.5-9-volt permanent magnet motor capitalised on Taycol's 1948 patent for an integral speed control and reversing lever. This was achieved by varying the pressure and position of a brush on the commutator, with the return circuit being via the armature shaft and bearings. In practice, this proved to be something of a gimmick. The Star first appeared around 1950 and production continued until about 1960.

Comet

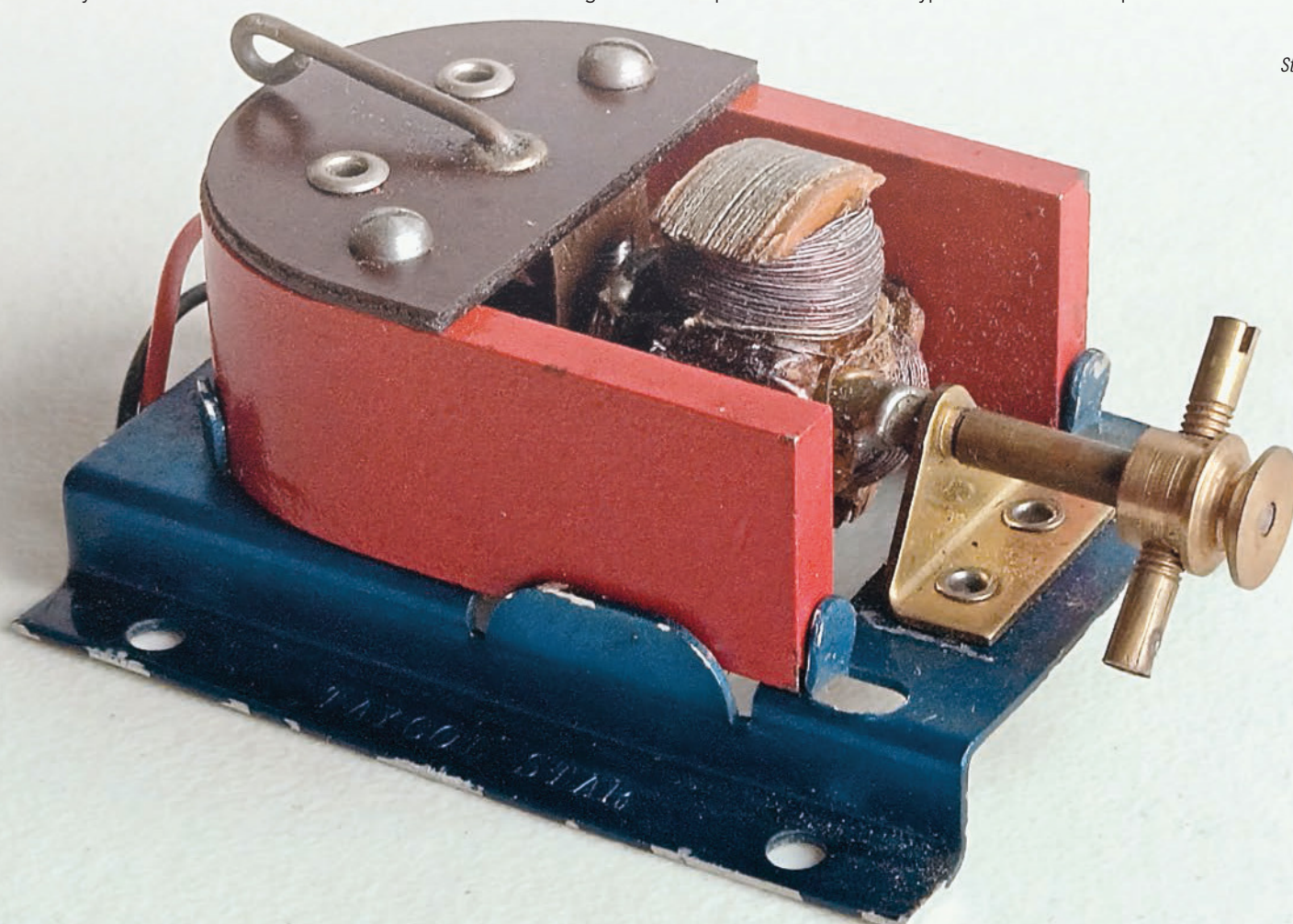
The 4.5-to-6-volt Comet used the same permanent horseshoe magnet as the Star in a vertical arrangement. A unique feature of the

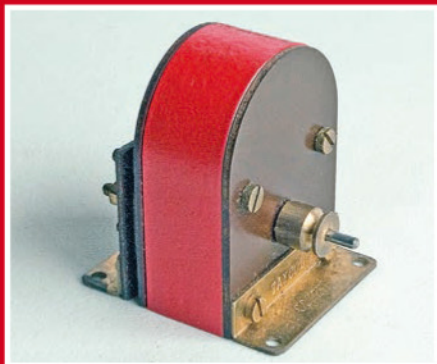
Comet was its availability in un-geared as well as geared and twin-geared versions, all with a 4:1 ratio. The first advertisement I could find for it is from April 1951, when it was priced at 10s 2d, 12s 10d and 17s 9d for the three versions respectively. The two-shaft gearbox was made available separately for 7s 11d. Like the Star, the Comet was in production until about 1960, though stocks may have been available until long after.

Marine

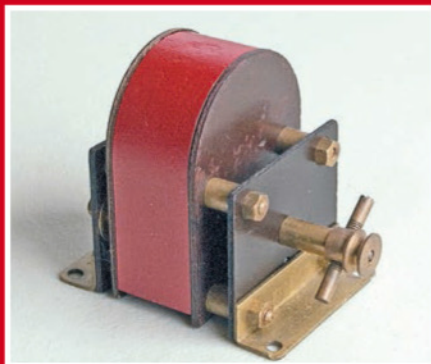
This large, open frame motor with two wound-field coils was announced in May 1955, priced at 64s 2d. Identified by its drum type commutator and square section brush

Star.

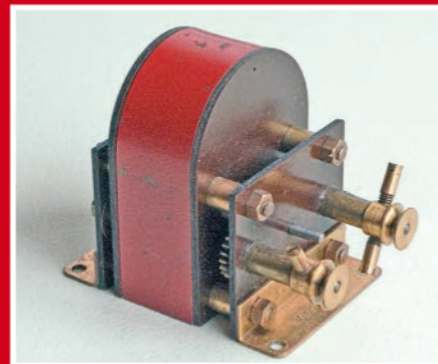




Comet in un-gear form.



Geared Comet.



Twin geared Comet.

guides, the Marine is now quite rare because it was soon replaced in production by the upgraded Supermarine in September 1956.

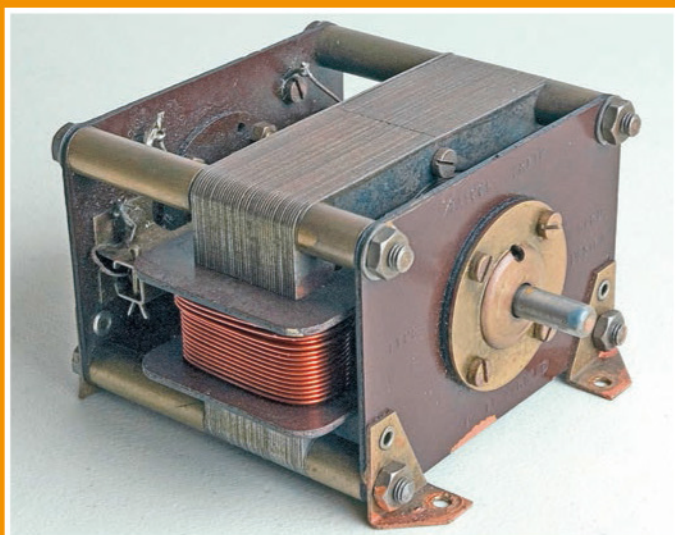
Specs: size 102 x 92 x 60mm; weight 1.03kg; 6-volt operation; typical current draw 3A; maximum efficiency 40% at 2.1A.

Torpedo

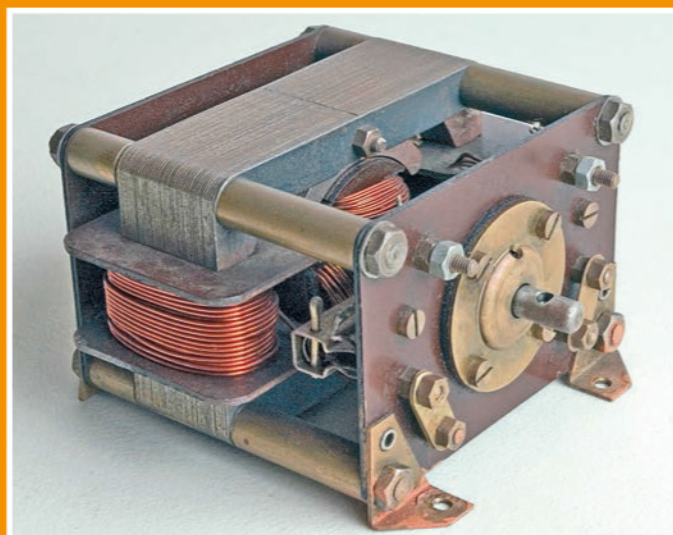
This mid-sized motor with a single overhead field winding was released in December 1955 and priced at 30s. It would later be labelled as the 'Mk.2' with revised electrical specification.

Specs here are as follows: size 66mm x

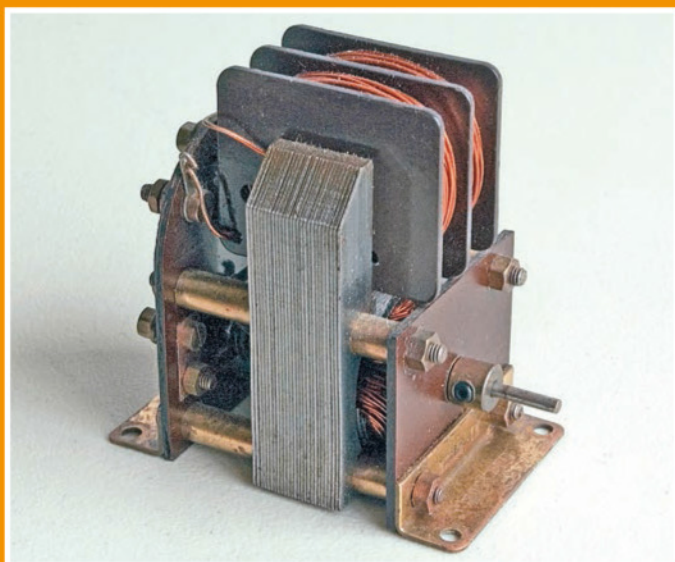
42mm x 69mm high; weight 350g; 2.3mm shaft; 6–12-volt operation; current 2.75A at maximum power, 1.6A at maximum efficiency of 48%; recommended by the manufacturer for use in model boats measuring 500-750mm in length.



Marine, front view.



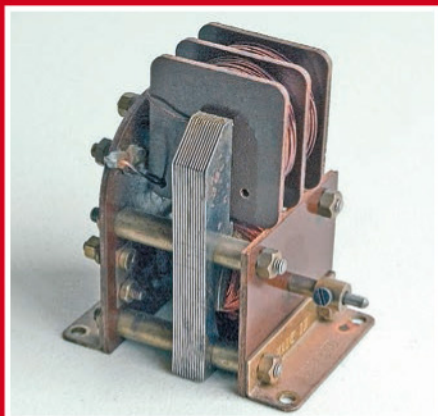
Marine, rear view.



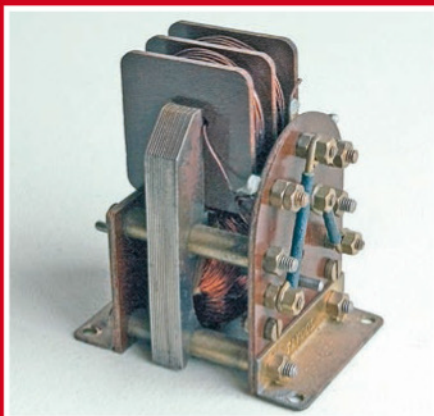
Early Torpedo with split field winding and wire links, front view.



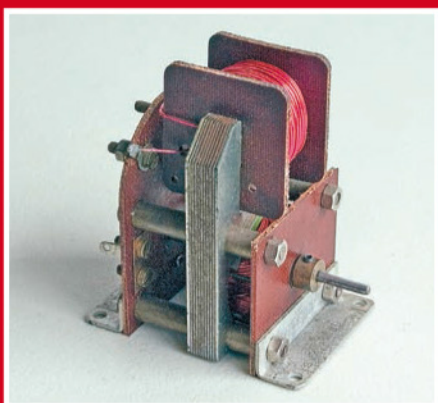
Early Torpedo with split field winding and wire links, rear view.



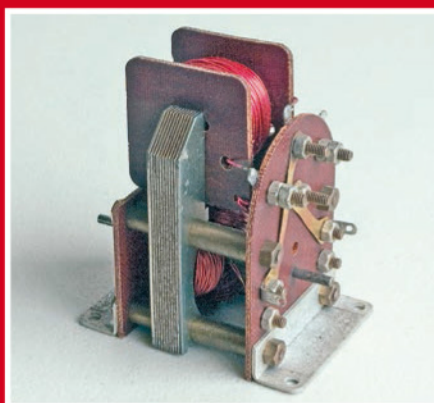
Early Target with split field winding and wire end links, front view.



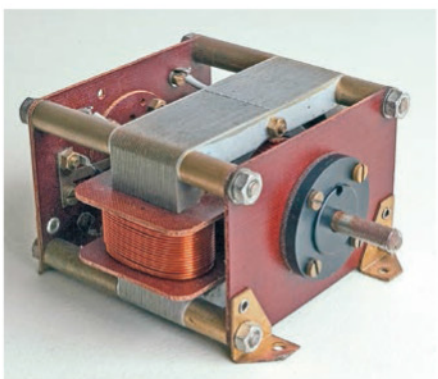
Early Target with split field winding and wire end links, rear view.



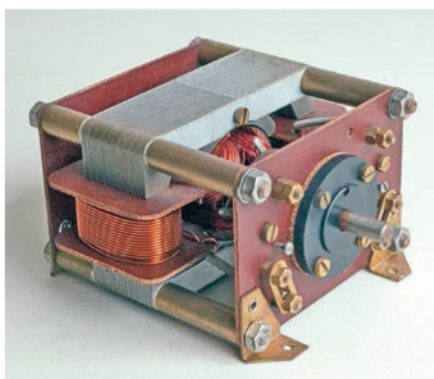
Later Target with continuous field winding, copper strip links and steel mounting brackets, front view.



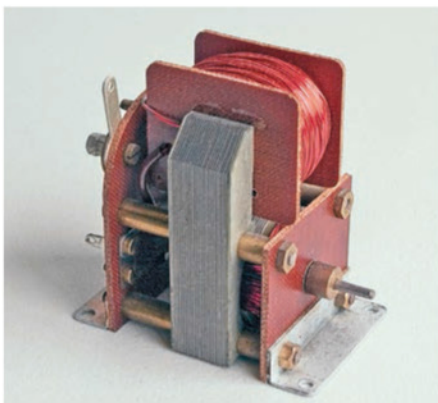
Later Target with continuous field winding, copper strip links and steel mounting brackets, rear view.



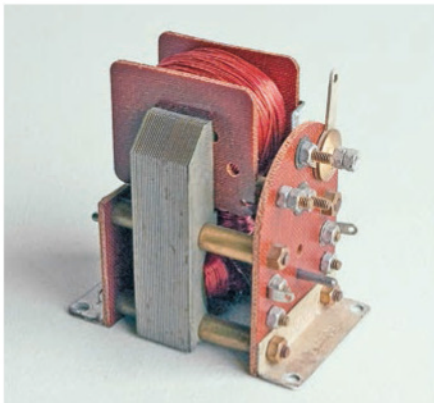
Supermarine with plastic bearing caps, front view.



Supermarine with plastic bearing caps, rear view.



Later Meteor with plated steel mounting brackets, front view.



Later Meteor with plated steel mounting brackets, rear view.

Target

This lower powered version of the Torpedo with a reduced number of laminations in the armature and field windings was released in May 1956 at 29s 7d (by which time the Torpedo was priced at 36s).

Specs are as follows: size 58mm x 42mm x 69mm high; weight 220g; 2.3mm shaft; 4-12-volt operation; current 1.75A at maximum power, 1A at maximum efficiency on 6 volts; for boats up to 600mm long.

Supermarine

This upgraded version of the Marine for 6-to-12-volt operation with disc type commutator and cylindrical copper gauze brushes was released around September 1956 at 79s 2d.

Specs are as follows: size 102mm x 102mm x 60mm; weight 1kg; 6.35mm shaft; 6-12-volt operation; current 4.75A at maximum power; maximum efficiency 44%; for boats 900mm long and up.

Meteor

This was a reversing version of the Torpedo – the reversing action achieved courtesy of an extra winding over the field coil – and was released in July 1958 at 39s 9d. Weighing in at 335g, its performance was as per the Torpedo.

Asteroid

Featuring the reversing version of the Target, the Asteroid was released in July 1958 at 33s 10d. Performance was as per the Target and its weight was 250g.

Supermarine Special

This was a reversing version of the Supermarine, achieved by extra winding over the field coils. Released around the end of 1959 at 80s 11d, performance was as per Supermarine, at a weight 1.112kg.

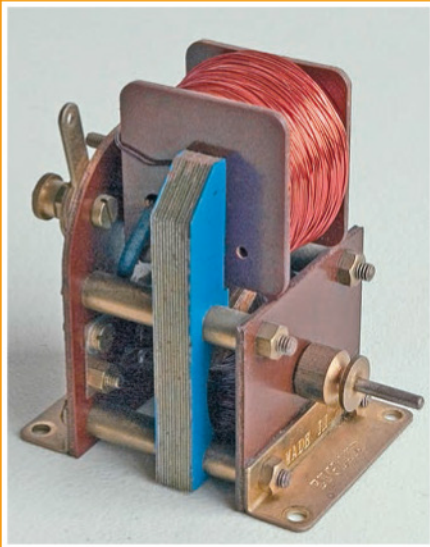
Supermarine Double Special

Appearing in late 1960, this was a development of the Supermarine with about twice the power of the original Marine. It was priced at 95s. Larger field windings were carried on canted-out laminations, resulting in increased width.

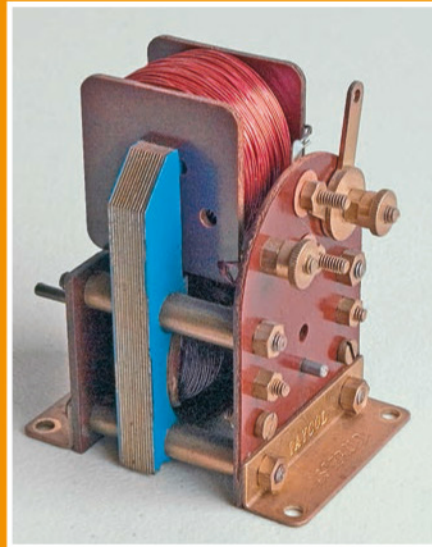
Specs are as follows: size 130mm x 102mm x 60mm; weight 1.275 kg; 6-to-12-volt operation; current at 51W maximum power 7A; maximum efficiency 74% at 5A; fitted with reversing coils; for boats 900mm long and up.

Standard

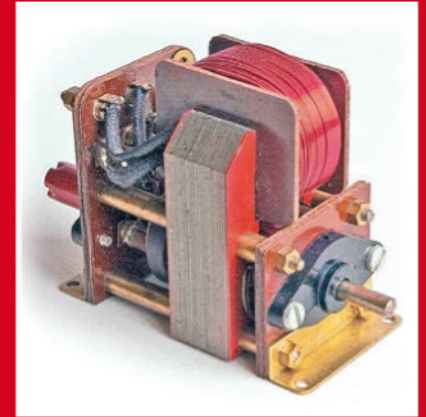
This final Taycol design appeared in January 1961. It used the same armature and field stampings as the Torpedo/



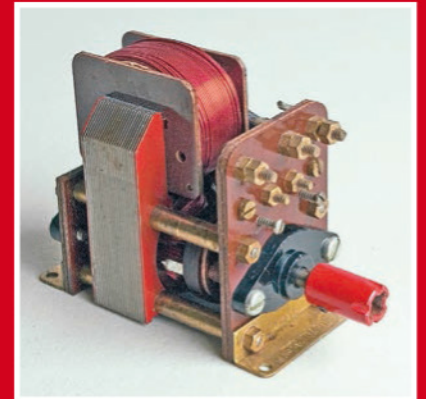
Early Asteroid with brass thumbscrews, front view.



Early Asteroid with brass thumbscrews, rear view.



Standard, front view.



Standard, rear view.

Target/Asteroid/Meteor but in greater numbers and with heavier duty brush gear and bearings.

Specs are as follows: size 90mm x 42mm x 69mm high or (later models) 81mm x 42mm x 69mm high; weight 510g; 4.8mm shaft; 6-to-12-volt operation; current at 26W maximum power 6A; maximum efficiency 40%; fitted with reversing coil.

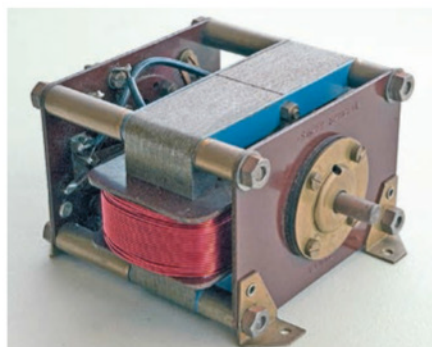
Range rationalisation

By January 1962, the Taycol range was being advertised as including the Double Special, Supermarine Special, Supermarine, Standard, Meteor, Torpedo, Asteroid and Target, indicating the Star and Comet had been discontinued. By 1967 the range had been rationalised to the Double Special, Supermarine (Special), Standard, Meteor and Target, with the Special version of the Supermarine no longer being referred to as such following deletion of the Supermarine. This range continued in production right up to the closure of the company in 1976-1977, with the final advertisement I could find

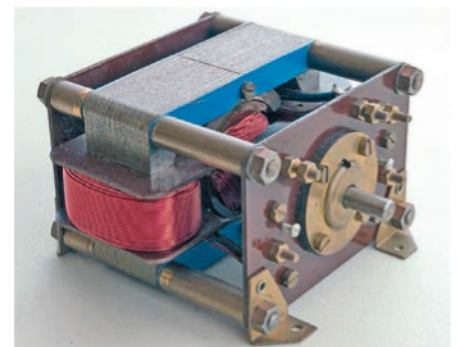
having been run in November 1976.

Monetary values

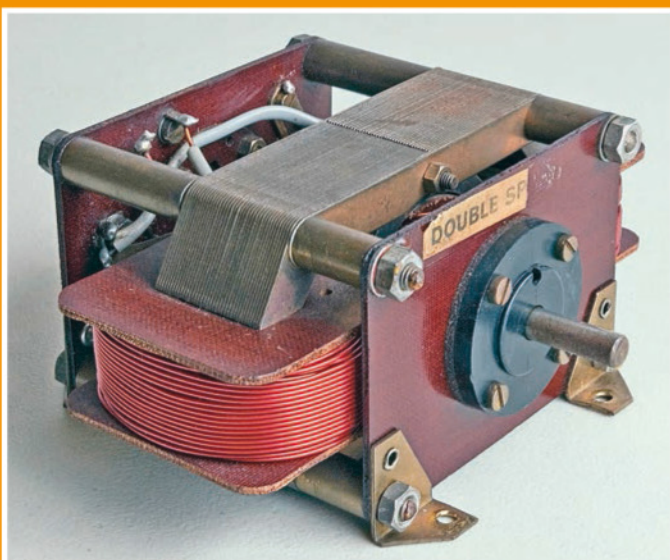
For price comparison, £1 (20 shillings) in 1955 is worth about £21 today; so, for example, the Marine motor at its 64s 2d price on release in 1955 is the equivalent of paying about £67.20 today. Has your Taycol maintained its value? ●



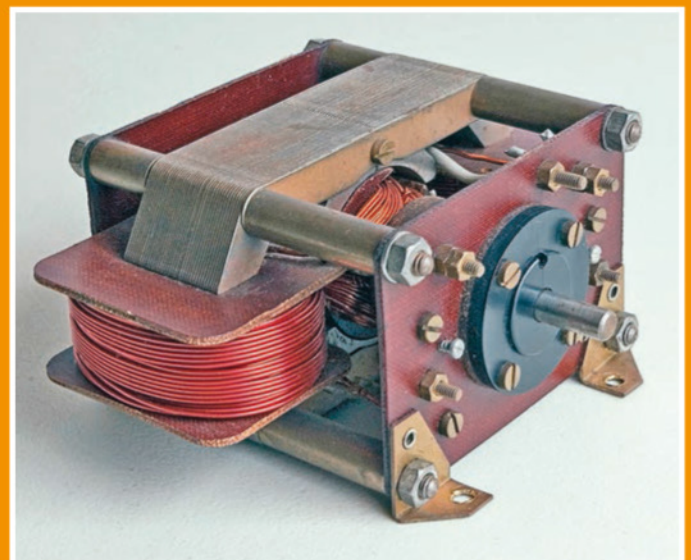
Supermarine Special, front view.



Supermarine Special, rear view.



Double Special, front view.



Double Special, rear view.

BOILER ROOM

Richard Simpson focuses on yet another traditional manual workshop tool and its various forms and many uses, with plenty of practical advice thrown in for good measure along the way

Last month we had a look at drilling and this month we're going to have a brief look at another common manual workshop process: filing. Both drilling and filing have been covered before Boiler Room, but not since 2014, so I genuinely feel they merit revisiting, as so often 'bread and butter' tasks such as these aren't given the attention they deserve. I'm a great fan of addressing the basics, particularly in the workshop, as we seem to have become so wrapped up in technology and so willing to spend significant amounts of money on all sorts of machine tools that I fear we're at risk of forgetting just how useful the traditional manual processes can be.

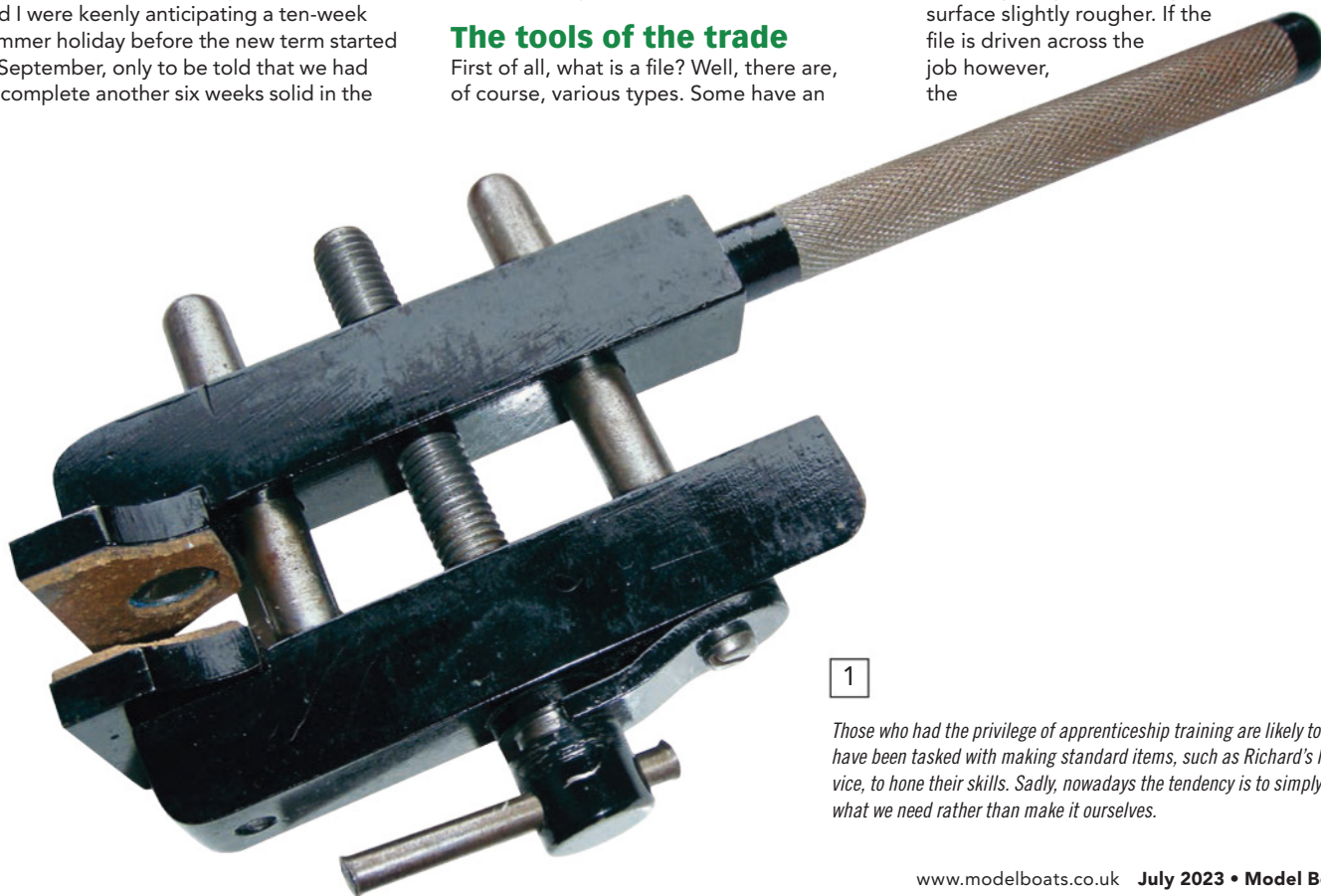
I was very lucky to have gone through an apprenticeship (in the latter half of the 1970s) where basic workshop skills were actually taught. On completion of the first year at college and having already put in many hours of workshop time, my fellow students and I were keenly anticipating a ten-week summer holiday before the new term started in September, only to be told that we had to complete another six weeks solid in the

workshop before any time off for good behaviour! Of that six weeks, two were to be dedicated to electrical engineering, two were to involve dismantling and reassembling of marine machinery that had been collected over the years from scrapped vessels, and two were to be spent further honing our workshop capabilities. We chose job sheets and made items from drawings which were designed to improve mostly basic workshop skills, such as sawing, filing, drilling and lathe work. We also used shaping machines, as milling machines were still not generally used in many workshops at that time. I decided to make myself a hand vice, which involved drilling, tapping, lathe work, thread cutting, sawing and filing. This proved to be so handy that even now I still use it regularly (see **Photo 1**). What follows, however, is a distilled overview of what I learned at the time about filing, and which I still put into practice today.

The tools of the trade

First of all, what is a file? Well, there are, of course, various types. Some have an

abrasive material, such as carborundum or diamond grains, embedded in their surface, but the standard file consists of a hardened metal blade with a surface that is cut with a series of parallel grooves that lift a sharp edge proud of the surface. These cuts are arranged in two different directions, designed to create cutting edges along the sides of the rhombus shape that the parallel cuts generate. If you look very closely at a file surface with the naked eye, you can see the cutting edges along the edge of the rhombus shape. You'll also see that when looked at along the length of the file the cutting edges are longer and when looked at across the file the cutting edges are much shorter (see **Photo 2**). Each of these tiny cutting faces will remove its own small shard of metal when the file is driven across the surface of a piece of metal. If the file is driven down its length the cuts are wider, the filings larger and the generated surface slightly rougher. If the file is driven across the job however, the



1

Those who had the privilege of apprenticeship training are likely to have been tasked with making standard items, such as Richard's hand vice, to hone their skills. Sadly, nowadays the tendency is to simply buy what we need rather than make it ourselves.



2
The surface of a flat file is quite interesting – although getting caught studying one might generate odd comments! You can, however, clearly see how the cut is coarser when the file is pushed lengthways and finer when it is drawn across the work.



3
A selection of different size and grades of round file. Round files are designed to be used by hand, not put in a drill and used to open holes out! Note the ones that currently do not have handles fitted.



4
A selection of triangular files. These are very useful for dressing up traditional wood saw blades and cleaning out damaged screw threads.



5
Another commonly found file configuration is the half round. Flat on one side but convex on the other, this is a handy configuration when dressing up internal curved surfaces. The flat face can also be used to draw file as it's cut in exactly the same way as a standard flat file.

cutting surfaces are smaller, so the removed metal filings are finer and the generated surface slightly smoother. This is known as draw filing, which we will look at later. Files obviously also come in a number of different shapes and sizes, such as round, half round, triangular, etc, but the standard basic file is a rectangular cross section, with both sides, and usually one edge, having a cutting face. This is so that if you're dressing up a corner and you don't want to cut an adjacent finished face, you're able to rotate the file so the smooth edge is against that face.

Round files (see **Photo 3**) cannot be used for draw filing a flat surface so are simply designed to be used to cut lengthways, but they're usually tapered so can also be used by rotating to open out a hole in a controlled manner. This should, of course, be done manually. The strong temptation to insert the file into a power drill and rotate it at speed in the hole you're trying to enlarge should be resisted at all costs. This will frequently end in the file snapping or, if a little larger, snagging and ripping the drill out of your hands, with potential for damage and injury. Files are hand tools only.

Triangular files are handy as they feature a regular triangular cross-sectional area, with each edge between two sides being at 60 degrees (see **Photo 4**). This can be particularly useful for such things as cleaning out damaged threads that have been bruised. However, care should be taken when thread cleaning to follow the thread perfectly or you could end up doing more harm than good. Make sure also that you have an idea of the thread shape, as it's possible that the thread angle could be finer than 60 degrees. When it comes to sharpening a wood saw, though, the triangular file is invaluable. Again, this was one of those skills we were actually taught at school back in the days when saws were sharpened and expected to last a lifetime, rather than the disposable items we get nowadays.

Finally, the half round file is a combination of a flat file on one side, which can be used to draw file surfaces, and a half round on the other side, ideal for either opening out holes or simply filing concave surfaces of any kind (see **Photo 5**).

There are also other file shapes, such as square section and even tapered across the

face, for more specific uses.

The carborundum or diamond faced files simply have a graded grit embedded in the face of the file, which provides a sharp cutting edge on the tip of the grit (see **Photo 6**). This is basically nothing more than an abrasive paper secured to a metal backing, and when you think of abrasive papers the fine surface finishes are only generated when the grade of grit is slowly increased to give a smoother finish. This isn't available with a grit type of file, which is why I tend to use abrasive papers attached to something solid, such as a block of metal, or glued to a wooden backing, and don't really consider these types as a file.

Using a file

I remember as a youngster at school watching our metalwork teacher demonstrate how to file a cutting edge on a triangular scraper that we were making. Starting off with a square edge of a plate, he put his scraper in the vice and after a few strokes of the file had generated a beautifully straight, perfectly even, cutting edge on one side of the scraper. This left such an impression I still

remember it to this day. It's what made me realise was just how handy a file can be and just what you can achieve with one.

In the workshop, safety should, of course, always come first, so there are couple of things worth noting. Firstly, always use a vice when filing. This will ensure the job is held nice and securely and that you have both hands free to control the file, making for far more effective and accurate filing. It is also surprising just how reasonable a small bench-mounted modelling vice can be, so this would be a sound investment (see **Photo 7**). Secondly, it's always a good idea to wear goggles or safety specs when filing as the very fine chips created by the file can become airborne and get into your eyes. This is particularly a concern if there are any draughts or if you allow the work area to become particularly dusty. I tend to be a little fastidious with such things so I have a battery powered vacuum cleaner next to my work bench and frequently vac up dust and debris to keep it under control. Another common safety aspect of filing is the tendency to not

bother putting a handle on the file. Many traditional files have a tang on the end that's designed to tap into a socket in a wooden handle. Sadly, all too frequently people don't bother and consequently use a file without a handle. The danger then is that if the file snags or catches on something and your hand skips forward, the pointed end of the tang can push straight into your wrist. It's therefore well worth considering using sets of files that come pre-fitted with handles.

Next to consider is selecting the correct file for the job. Files not only come in varying sizes, from needle files to large heavy engineering types, but also come in varying finishes in each size. You could therefore have three eight-inch files with fine, medium and course cutting faces. The success of the operation will very much depend on selecting the right one. If you choose too small and too fine a file you will find it very difficult to control the surface as you file it, and will easily end up with an uneven finish. Too course or too large a file and you will generate a very rough surface

that you will then find difficult to smooth down to an acceptable finish. A common mistake is thinking that a large course file will remove great chunks of metal that can then be finished with a smooth file. Files are not designed for removing large amounts of metal; saws and machine tools do that. Files are very much a finishing tool, and most filing jobs should only take a few minutes. If you're still trying to get the job down to size after half an hour there's probably something wrong with what you are doing.

As with just about all manual tools, the job is best held at a height such that your elbows are at right angles when you're working on it. This is the most comfortable position and so will give you the best natural control of the tool. The file is most effective when pushed away from you, with either your fingertips (see **Photo 8**) or the heel of your hand (see **Photo 9**) pressing on the end of the file to create the cutting pressure. By far the most common mistake when filing is to rock the file as you push it. The trick is to push the file while maintaining it in a horizontal attitude.



Richard tends to think of carborundum or diamond files as simply abrasive surfaces rather than files. They cut equally in any direction and tend to be available only in small sizes.

As you push the file all those minute cutting teeth will remove a small chip of metal, with the end result being a flat section of metal having been removed from the job. If the area you're filing is wider than the file then you will have to move the file with each stroke to keep the surface flat. When you're down to almost the level you want then the file can be rotated through 90 degrees and drawn across the surface. This gives a finer and much wider cut, resulting in a smooth and flat finish to the surface (see **Photo 10**). If you've generated any sharp corners then a gentle wipe across the corner at 45 degrees to the surface should remove any burrs and sharp edges, making the part much more comfortable to handle.

If you're filing an internal corner, use of the smooth edge of the file is worth considering to avoid damaging the adjacent face (see **Photo 11**).

Looking after your files

A file is a traditional hand tool that's often overlooked and frequently abused, but it can be extremely useful. For most model engineering purposes I'd suggest either a set of small files that are pre-fitted with handles (see **Photo 12**) or a selection of traditional engineers' 6-inch files. I well remember a very



One of the first things you should fit out your home workshop with is an engineer's vice. The degree of ease this adds to a task (compared to holding something by hand) will make you wonder why anyone would even consider doing something without one. There again, there's always the 'G' clamp on the dining room table!

"The strong temptation to insert the file into a power drill and rotate it at speed in the hole you're trying to enlarge should be resisted at all costs"



The standard filing stance. Control with the handle and apply pressure on the front of the file. Lighter pressure can be applied by just using a couple of fingers for finishing cuts and simple dressing up.



Pressure can easily be increased by using the heel of your hand, but control still remains with the handle.



Final fine dressing up can be done by draw filing, using the file across the length. This technique is not as easy to control, so is usually kept to a few light strokes to smooth off the surface. If the file is used in this way for any length of time, the surface will frequently end up less than flat.



When filing an internal corner, always bear in mind where the cutting edge and the plain edges are. This will help prevent damage to the adjacent face that may then take a lot of correcting.



12

A small set of engineer's files in all the shapes you are likely to need. Coming ready fitted with their own handles keeps things safe, plus being supplied in a handy wallet keeps the cutting faces out of harm's way and in good condition. Such a set is definitely a sound investment for any model engineer.



13

Look after your files and they will last you for many years. When they do finally become worn they can be replaced, but hopefully not because they've been knocking chunks out of each other due to all having been thrown in a heap inside a drawer.

angry Chief Engineer on a ship I served on as a cadet who'd discovered a drawer in the workshop full of files. The workshop, as was frequently the case, was in the machinery spaces, so was subjected to significant vibration from machinery and the propeller. The drawer full of files had been bouncing around and hammering together for some time and all were thoroughly dented, eroded, scuffed and well beyond use. Some looked fairly new. The Chief was quite right in being so annoyed and tasked me with making a rack for the shadow board across which files could be hung – another lesson to carry throughout life. My files all sit in a foam lined drawer, neatly separated from one another and not touching (see **Photo**

13). When files are used they can clog up with swarf in the cutting edges, especially when used to file soft materials, such as non-ferrous metals or even non-metals, so should be frequently wiped with a wire brush. I use a brass wire brush, which does the job fine. If you don't keep a file clean the built-up swarf will create grooves in the filed surface, which will then be difficult to remove and look unsightly.

Conclusions

Filing is frequently looked down on as an ancient art that has no place in a day and age where we have machine tools that can do everything for you. I, however, think there's still a place for the humble file and

that it's well worth developing a competent standard of filing, as you will find it's a skill that will pay dividends throughout your modelling life. Not many people nowadays enjoy being taught such skills in schools and colleges, so the benefits may not be quite so obvious, but I'd recommend at least having a practice at it occasionally.

Finally, it frequently seems to surprise some modellers just how readily available and how reasonably priced files are. **Photo 14** illustrates the wide range of sizes and grades being offered by a trader at a model engineering show I recently attended, so there's really no excuse for not having a set of good, well looked after set of files to hand in your workshop. ●

"A common mistake is thinking that a large course file will remove great chunks of metal that can then be finished with a smooth file"

Go along to any model engineering show and you will almost certainly come across a vendor displaying files in a wide range of shapes, sizes and grades, all at surprisingly reasonable prices. Pick yourself a few common configurations to keep available at home (along with some suitable handles of course) and you won't regret it.



14

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THE STOCK MARKET

Dave Wiggins looks at how investing in spares can pay dividends

I guess that there's a fine line between collecting and hoarding. Maybe a 'collector' has nice items shown off in posh display cabinets, while a 'hoarder' has boxes filled with 'may come in useful' bits and bobs? But if your aim is to end up with a nice collection of the former type without spending truckloads of cash then you're going to need to restore less than perfect R/C systems (or engines) as a first step, and to accomplish this you're going to need a reserve of spare parts. In other words, you'll need to build up a stock.

As regular readers will know by now, my own enthusiasm radio wise is for American equipment from the 1970s (the opposite of my engine interest, which is for British diesels). American radio spares of the kind I illustrate in this issue are hard to find but, on the plus side, are often inexpensive once tracked down. Being mostly small and light, they're also not ruinous in terms of air postal costs from the USA, unlike complete sets.

Kraft

In the 1970s Kraft Systems of Vista California was easily the world's biggest R/C manufacturer. A Kraft radio could therefore be a sensible target for a first-time collector and restorer of Americana, as any spare parts needed are not that hard to locate, even now.

My first picture (**Photo 1**) therefore shows three Kraft receiver cases dating from about 1968 to 1972. The two flat cases are for 4-channel 'Gold Medal' sets, c.1968, while the oblong case is c.1971/2 and was used for a few more years after that, making it a universally useful spare part. As a boat modeller you may question the need for spare receiver cases, but bear in mind that most 4- or 6-channel gear was sold to model aircraft fliers back then and so these cases are frequently found with cracks due to crash



A set of small, moulded parts made by Kraft Systems.

landings. Phil Kraft made an early decision to set up a small plastics moulding division and these parts were all made in-house, as were their servo cases and stick parts.

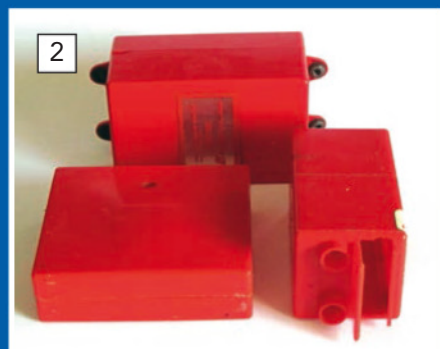
Logictrol

Our second picture (**Photo 2**) is for similar mouldings but made in red nylon by EK Logictrol in Texas. The receiver case to the rear of the shot is one of the very early 5-channel designs imported into the UK by Henry J. Nicholls & Son of London; that to the right is for a 1970s 'Super Pro' or 'Champion' set imported by Crescent Products of Essex; while the case in the foreground is a universal battery container used both in EK transmitters and with their receiving systems. These

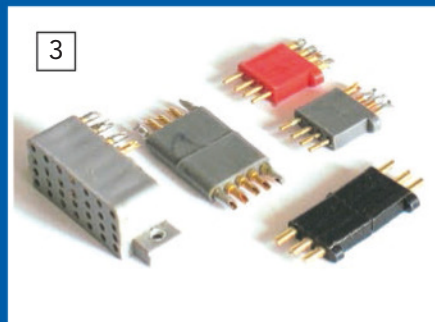
battery cases are sometimes found in other colours, but red is the most common.

And others...

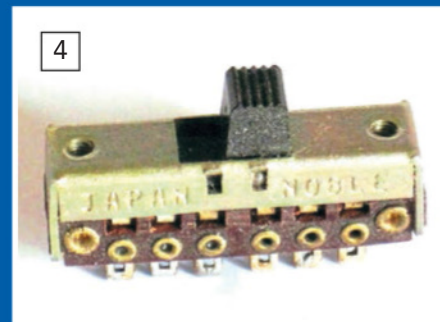
Photo 3 is of sample connectors made by SLM of Cheltenham right here in the UK. These gold-plated connector blocks, plugs and sockets were used by just about every British concern and are, from my point of view, 'gold dust' when in good condition, as these examples are. It's also an interesting picture for another reason, in that it shows the progress made in R/C receiver and servo design as the '60s became the '70s and how servo amplifier design improved bit by bit, from five wire to four, and finally to the three wire systems still in use today.



Some Logictrol casings kept as spares.



SLM of Cheltenham made really nice connectors – here are some ready for reuse.



The Japanese Noble switch was used by almost every R/C maker.



"Salvage is how I've come by such a useful stock of spares"

5: These orange battery case mouldings are from a 1975 2-channel radio from RS Systems Inc.

6: Recovered and renovated Kraft foil labels.

7: The end result of successful salvage: a set of six Kraft KP12 servos.

8: The sub miniature audio transformer was a common item in the very first transistor R/C receivers.

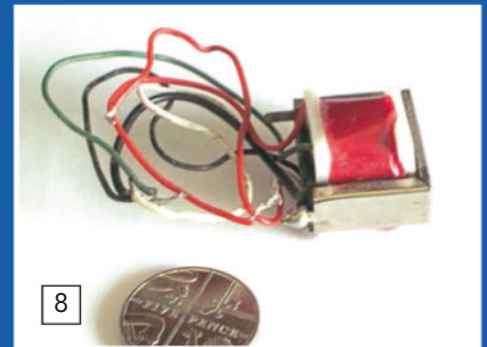


Photo 4 moves from the UK to Japan but also to the entire R/C world, as these four-pole change-over slide switches manufactured by Japanese maker 'Noble' were literally used by every manufacturer globally, such was their quality and reliability when rewired (bridged across) for double-pole use. Most radio makers added a simple plastic back cover and faceplate to finish the job. Some smeared impact adhesive over the wiring to achieve vibration support, so these are now suitable only for binning I'm afraid. If this hasn't been done, these switches can sometimes be successfully renovated, cleaned and reused. As with SLM connectors, new Nobles are deemed 'gold-dust' items in my workshop.

Photo 5 shows a very hard to find part, i.e., a moulded 4-cell battery case from RS Systems of California (radios designed by Bob Novak), from c. 1975. All 'RS' parts are now difficult to come by, but I've included it as it shows the standard that can be achieved with a bit of elbow grease and white spirit. Good as new, in fact! Battery cases are never easy as old NiCad cells will invariably have leaked.

Photo 6 displays a batch of renovated Kraft foil labels recovered from old servos and batteries (these are always good stock items as they're often missing after so many years of past use). All that's required is to select the best and to re-back them with double-sided adhesive tape.

Photo 7 shows a complete set of six Kraft KPS12 micro servos awaiting wiring and closing-up after an extensive and time-consuming renovation programme. By the time this picture was shot every single part

(case top, bottom and centre sections, all gears and spindles, all motors and all feedback pots) had been thoroughly cleaned and lubricated (where necessary), ready to refit tidied-up Kraft amplifier boards. In many ways this picture is the end result of a great deal of hoarding and searching for parts. The popular Kraft KPS-12 was used by many other set makers both here and in the USA, so parts are out there, they just need finding.

One point to bear in mind is that this servo was sold by Kraft and by others (Heathkit and Skyleader, for example) in two different formats. Early production servos had a four-wire/all discrete amplifier and a low resistance/2.4-volt Mitsumi motor, while later models (1972 and onwards) were fitted with an improved I.C. (Integrated Circuit) amp' and 4.8-volt wound motors – so don't make the mistake of fitting the wrong motor during restoration.

The very early days of modern R/C remembered

My last item is quite different. All of the very first transistor receivers, whether made in Britain or overseas, or for single- or multi-channel control, had a need for ultra-miniature audio transformers for inter-stage coupling. Little single channel/super regenerative jobs like Macgregor's popular (British) 'Minimac' or the first (American) Kraft needed a pair of such transformers and the firm who dominated this market in Europe was called Ardente. Ardente actually manufactured hearing aids, so its tiny transformers continually reduced in size as

hearing aids became smaller and smaller year on year.

The transformer I show is not one of Ardente's but a marginally bigger item that originated in Japan, c. 1962, and was intended for use in small portable transistor radios. In my early days as a radio technician, I was in and out of a large coil winding shop in a major radio/TV factory and can honestly say that I certainly wouldn't have wished to be tasked with manufacturing such minute windings, even back then.

Stash it, don't trash it

The intention of this little primer has not been to explain electronic restoration techniques but rather to describe and illustrate how useful 'dud' or old equipment can still be as a source for spares. Like any other collector, I've made buying errors on the internet and ended up with radios that are beyond repair. This doesn't, however, mean such sets have to be trashed. In such cases, my advice would be to remove anything useful, clean it up and store it away as a spare. I've even managed to get 'mileage' out of the vinyl clad aluminium salvaged from damaged transmitter cases in the past. Salvage is how I've come by such a useful stock of spares over the very many years that I've been servicing R/C equipment.

Next time around

In my next stroll down Memory Lane, I'll be continuing this theme by examining minor items that can be bought very cheaply but which are, nonetheless, still of real value to a collector or restorer. ●



Your Models

Whether you're highly skilled and experienced or completely new to the hobby, you're definitely invited to this launch party! So please keep the contributions coming by emailing your stories and photos to editor@modelboats.co.uk

Mike's marvelous builds

Having long enjoyed other's submissions in the Your Models section of the magazine, I am sending you photos of some of the models I have built over the years, which include a 1:24 scale Fairmile B built on a Christian Capurro hull, HMS Vega built to 1:48 scale on a Sirmar V&W hull, a Deans Marine MGB, the Manchester Ship Canal tug *Badger* built on a modified Canning from Mountfleet Models' hull and last, but not least, my interpretation of Revell's infamous HMS *Snowberry*.

I've portrayed *Snowberry* in 'fresh from painters' condition, as before the ravages of war really set in ships would have been



kept spotlessly clean as a matter of routine. I remember reading there had initially been some scepticism about how bright that scheme was, with some skippers feeling the ship would stick out like a sore thumb, but apparently this concern soon dissipated once they began to realise how surprisingly effective it actually was.

Thanks for an interesting magazine.

MIKE CORCORAN
EMAIL

Thanks so much, Mike. Fabulous work. It's also a lovely coincidence to be able to include your pristinely finished model of Snowberry in the same issue as Simon Murphy's fascinating feature on the completely different treatment he gave the same ship (albeit in a different guise) built from the old Matchbox version of the kit. Ed.





David Virgo's yacht, based on Ray Wood's plan for Eventide but delightfully and practically personalized.



Eventide

Inspired by free plan for the motor sailing boat Eventide free by Ray Wood included in the January 2023 issue of Model Boats, I thought I would have a go at building this model.

I had some scraps of wood and other bits and pieces and was keen to see what I could produce on a low budget. I also decided to add a motor and propeller, which was not included in the prototype – a good call, as this has proved useful when trying to recover my yacht in tricky weather conditions. Sails were made from 50-year-old engineering drawings and although they still show plans of a housing project somewhat add to the character of the model. The whole model cost £60 to build, including all the radio control equipment.

For those who are interested in more details, I've produced an 18-minute video of the complete construction, which can be viewed on <https://youtu.be/8Qqmrc70ZE>
DAVID VIRGO
EMAIL

She's absolutely gorgeous, David, and I know Ray is going to be really interested in how you've taken his original plan and run with it, adding your own unique innovations along the way. Can't quite believe how you managed to bring her in on such a tight budget, either. Well done! Ed.



Refurbished Clyde Puffer

I thought I'd send in some photos of my 1:32 scale Caldercraft Clyde Puffer. I bought this model on eBay and then carried out a complete refurb on her over the next 18 months. The engine housing was a complete rebuild, as was the wheelhouse, before she was all repainted using Humbrol enamels.

I enjoyed this project so much that I'm now in the process of

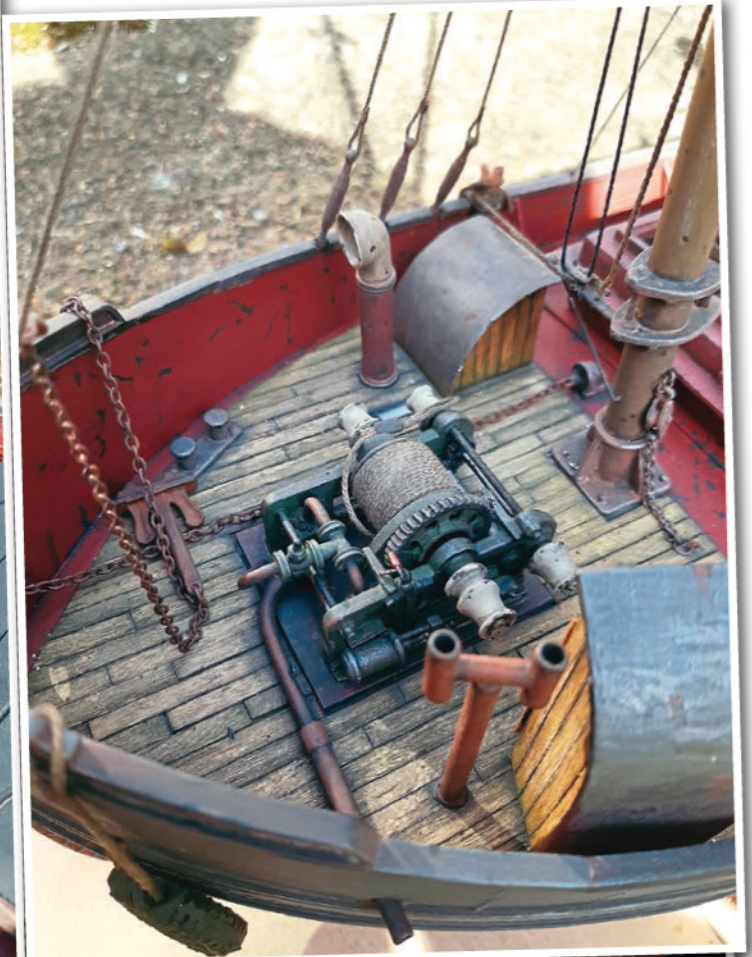
tackling Mountfleet Models' 1:24 scale Clyde Puffer.

ALAN DAVIES
EMAIL

Love how credibly you've managed to portray this characterful workhorse, Alan. It's clear to see the all the thought that's been put into the overall look and feel of the finish. Ed.

Alan Davies' splendid restoration of an old 1:32 scale Caldercraft kit-built Clyde Puffer purchased secondhand on eBay.







Don't you just love it when a plan comes together!

This is a small selection of models built by model makers at home and abroad to plans I have drawn over the last 55 years.

Most lines plans are a closely guarded secret by the boatbuilders, so apart from one or two examples the rest have been generated from often small outline plans in shipping magazines and the lines have

been my own interpretation of what the body shape would be like; fortunately, having been on or around shipping all my life I have gained a pretty good idea of the shapes.

I never cease to be amazed by how these modellers can transform lines on a piece of paper into an almost living breathing object, so I hope this selection of photos will encourage others to try and match the skills demonstrated in their work.

JIM POTTINGER
EMAIL

It must be so rewarding to have been sent all these photos of the wonderful models built from your skilfully drawn plans, Jim. Congratulations to you, and to all the incredibly talented modellers responsible for them. Inspirational indeed! Ed.





LVTP-7 – fresh out of the water!

I'm a scale modeller who makes mostly 1:35 military and 1:24 commercial vehicles. Wanting to broaden my modelling horizon, I saw Model Boats at the Grande Bibliothèque in Montréal; and I discovered a healthy hobby through a well-made and informative magazine. I even read articles that are not my cup of tea, because I often learn something. Even for non-modellers, it's a great magazine to learn about boats.

Given that nearly every military land machine ever made has been kitted in 1:35 scale, and tank guys won't make aircrafts because they take too much shelf space, you're likely to hear from more guys like me, looking for something to build. Some kit makers have started to make 1:35 scale small watercrafts, and I hope more will follow.

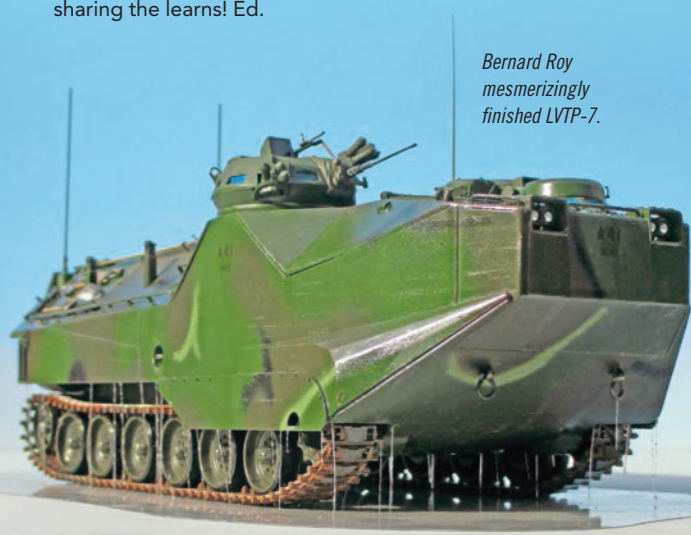
As a visitor from a 'parallel universe', I thought I would share pictures of one of my models that is kind of boat-related; I know you like boats on the water, but here's a Tamiya LVTP-7 Amphibious Personnel Carrier fresh out of it. The dripping water was made from clear stretched sprue (clear styrene rod heated until soft, then stretched to a thin thread) adorned with tiny drops of white glue. The water puddle was cut from a thin clear plastic sheet, the tracks and some of the drips were glued on it, and everything was airbrushed with acrylic clear. A car-trunk size version would look great on the pond or coming in and out of it.

Many thanks for your magazine, where I discover or learn something new in every issue.

BERNARD ROY
MONTRÉAL, CANADA

Quite aside from the mightily impressive job you've done on the LVTP-7 itself, Bernard, I am blown away by the innovative way you've managed to create the effect of water dripping from the vehicle and puddling beneath it. Thanks so much for explaining the method employed here, made to sound so simple but you are clearly an exceptionally skilled modeller! There is clearly plenty of scope for cross-over between the different modelling sectors when it comes to sharing the learns! Ed.

*Bernard Roy
mesmerizingly
finished LVTP-7.*



Your Letters

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Dunkirk spirit

On Friday, May 5, 2023, to mark the occasion of the Coronation of King Charles III, the Association of Dunkirk Little Ships held a gathering of boats (of all shapes and sizes) which took part in the evacuation of British Expeditionary Forces' troops from the beach of Dunkirk in May 1940. Some 31 vessels made the trip from up and down the river Thames (there are many more craft owned by members of this Association, many of them currently being restored to their former glory – a feat not for the feint-hearted).

I was delighted to finally meet the owner and skipper of *White Marlin* (a Vosper/Thornycroft-built boat which was the subject of my design and build of a free plan in the December 2019 issue of *Model Boats*), spending much of the day aboard, a rare treat for a model maker. I was also pleased to chat with many of the other owners who had made the pilgrimage to St Catherine's Marina adjacent to Tower Bridge, and a friendlier bunch of people it would be hard to find, all with a common interest in preserving the valiant fleet of 'Little Ships'.

**RAY WOOD
EMAIL**

Right: A general view of the 'Little Ships' decorated with flags and bunting.



White Marlin, a 50 ft motor cruiser built by Vosper Thornycroft in 1939, a.k.a. HMS Fervant during Royal Navy service.



The 1:18 scale model of White Marlin on the deck of the real boat.

Fabulous photos! Thank you so much for allowing those of us not present on the day to vicariously enjoy the spectacle through the lens of your camera. Bravo, too, to the Association for keeping the story of the incredible spirit demonstrated at Dunkirk alive. Ed.



Coronia, an auxiliary ketch built on the beach in 1927 by Henry, Theodore & Sidney Peake of Newlyn, Cornwall.



Brown Owl built in the James Silver yard in Rosneath on the Clyde in 1928. She is 42 ft long and cost £1,650 when new – a tidy sum back in the day.



Lady of Mann, one of the smaller craft, kept in an immaculate condition by the owner.



Wanda, built in 1935. This 35 ft motor yacht was built by Reginald Yebbsley for Henry Maxim, head of Austin Reed. After the evacuation she was fitted with a Bofors gun and patrolled Portland Harbour.



Breda, a lovely gentleman's yacht of the pre-World War II period, the owners must have wondered if they would ever come back. Ray's model of the White Marlin is just visible cruising by!



Greta, the Thames sailing barge, resplendent after her spring refit at Faversham, Kent, represented the sailing barges, many of which did not come back from the action. During the summer months she can be found at Whitstable taking day trippers out into the Thames estuary to visit the Maunsell forts.



Mary Irene, typical of the pre-war period launch/work boat, represents one of the service craft of the era very well.

Stuart Drummond still has the box for his example of the Veron kit that has been much discussed on these pages following Mike Newell's appeal for information on a 'mystery model' back in the March 2023 issue of Model Boats.



Identity crisis

The latest Model Boats magazine (March 2023) has just arrived at our bookstore, and I would like to assist with the query featured in Your Letters, page 68, under the heading 'Identity Crisis'.

The model is a Veron product, and the build instructions reference the Trinidad and Tobago Coast Guard ship Courland Bay. Malaysia had 22 identical hulls built.

If anybody is interested you can purchase

the plan from Cornwall Model Boats – search Model Boats Plans, Model Boat Builder Plans, Warship Plans, and then scroll down to HMTS Trinity. However, this plan is aimed at the experienced builder and is not the same plan as the one included in the Veron kit.

I had saved the box, with its charming period artwork, my kit came in. Support documents for the hull numbers can be found in *Combat Fleets of the World*

1980/81. My boat and build instructions are in deep storage right now as we are still 2-3 weeks away from our lakes being ice free.

Hope this is helpful.

STUART DRUMMOND
YUKON, CANADA

Much appreciated, Stuart – and thanks to all of you who have over the past couple of issues provided such a wealth of information here. Ed.



Left: L'Orage, built in 1937-38 by Boats & Cars of Kingston she is 29 ft 6 in long and was owned by the famous pilot, writer and broadcaster Raymond Baxter, who with his son founded the Association when a fleet of 'Little Ships' made the channel crossing on the 25th anniversary of the evacuation in 1965. She is kept at Goring-on-Thames in a boathouse.

Below: Margo II: no log of her war exploits exists but she was seen to depart to the evacuation. She has had many owners over the years, the more notable being Walter Young, inventor of the Young's Course Corrector, who fitted her with the compass from the Wellington bomber he flew during the war.



Above: Letitia, typical of the number of motor fishing vessels used to support the evacuation of troops from the beaches of Dunkirk in dire conditions and under constant threat of attack.

Right: Ray's White Marlin (model) inspecting the assembled fleet at a good pace round the basin.

Aerotek RAF Crash Tender articles

In response to Mike McLaren's request for information on the RAF Crash Tender in the June 2023 issue, there has been a number of articles over the years in the Model Boat magazine. A series of articles published in October 1965 under the title *Boating for Beginners* covered the building of the 34" RAF Crash Tender and was run over eight parts and finished in June 1966. More recently there was an article in the January 2005 issue, plus on the Model Boats website there is a wealth of information and articles on the subject.

The earliest information I've come across on the full-size vessels, the No 93 and No 94 Crash Tenders, appeared in the *Flight* magazine dated 24 October 24, 1952.

I hope that this information is of some use to Mike.

DAVID WHITTAKER
EMAIL

Most helpful, David – if I had the budget, I'd offer you a job as an archivist! Ed.

Your Letters

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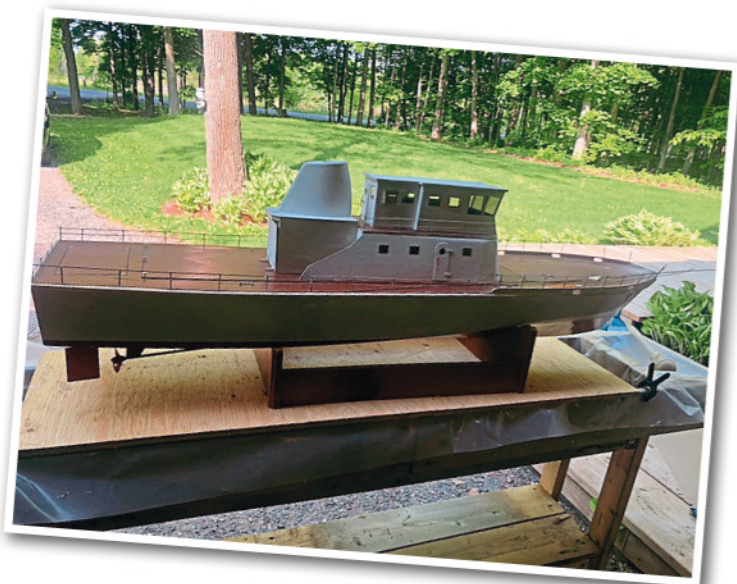
Name that ship!

I was given this model by a friend, who inherited it from the estate of its original owner. I think it is a Dumas model, as it has dual motors and a Dumas controller, but I have no idea of the ship's name. The model measures 52.5-inches long by 12-inches at the stern and while it appears quite old is very well built. Obviously, I've checked the Dumas site but can't see a kit available for this same ship.

I am, therefore, hoping you can help me identify it so I can obtain the proper items

Can anyone assist Mark in identifying this Dumas(?) model?

to restore it back to sailing condition. I've already obtained the Dumas gears and drive system to make both props and rudders operational, but some of the superstructure items are missing. A ship's name would help me determine what's missing from the detached parts I have in a bag.

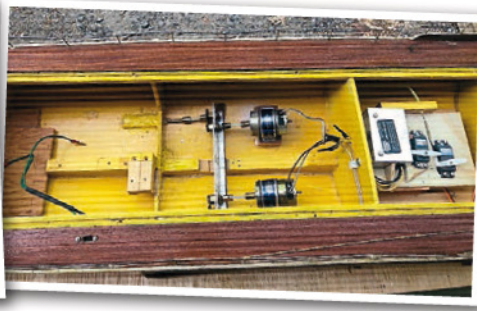


On a separate note, at the same time, I obtained a Lindberg PT109 that is missing superstructure parts. Do you know of any companies still selling these parts from a mould or parts kit?

While writing, can I just say I love the magazine and am a faithful subscriber and keen builder of the free plans!

MARK KUNTZ
ONTARIO, CANADA

Thanks for your lovely comments on the mag, Mark. I am throwing these queries over to your fellow readers, as knowing the wealth of knowledge and experience out there I'm pretty sure someone will be able to advise. Over to you, chaps! Ed.



At long last Victory!

The account of my building a model of HMS Victory in 1:48 scale appeared in the July 2022 edition of Model Boats, having spread the work over more than 40 years, and having – in my 80th year – virtually completed the model except for the stern decoration items. At that time, I was still attempting to find someone who could 3D-print these decorations, i.e., the scrolls, the two human figures and the trophy panel that appears above the stern windows. This, however, was to prove difficult. Also, I wasn't happy with stern windows, because they were each of four panes instead of nine, but the friend who endeavoured to laser cut them found that they kept breaking, hence my having to 'put up with' what I had. Likewise, still in situ were the human figures and fittings I had printed as examples only and stuck in place with paper glue pending getting my hands on the actual items – a purely stop-gap measure. I had been trawling the internet for people who could possibly do what I needed, and indeed I found some; however, when they saw the photos sent they quickly pulled out. Excuses/reasons? Too expensive to do, too much work involved, and so on.

I eventually managed to get the assistance I needed from Neil Woods at woodysmodelworks. Not only was he able

to produce the required items, he set up an illustration of them for me before taking final payment.

Once received, I proceeded to paint them in Victory's ochre and black, and also set about demolishing the existing stern section. Neil had laser cut the wooden sections in two pieces: the 'outer' section and the 'inner' section, which consisted of all the stern windows. He'd done the same for the port and starboard galleries.

Before starting to re-assemble the parts I set all of them up on a table to see how they looked. I'd purchased a sheet of clear plastic window glass from a doll's house parts company, from which I cut out three long curved pieces to glue behind the window section, so that when put in place the 'glass' was on the inside. With the 'old window section' now removed I proceeded to install the two wooden sections, using clothes pegs to keep them in position while gluing and screwing, using tiny brass countersunk screws.

Once in place and with the glue hardened, I removed the pegs then started to install the balusters under the stern and side gallery windows, followed by the scrolls, the two human figures, the double port and starboard scrolls below the stern wardroom windows



The now beautifully finished stern work on Michael Byard's model of Victory.

and, finally, the trophy panel, placed above the top windows. I am aware that the side galleries should be curved, but to have achieved this would have involved a lot more demolition, which I really couldn't face, so decided this would be my one compromise.

Finally, in my 83rd year, apart from the three stern lanterns – which I've yet to source – I can put my hand on my heart and say that the model now really does look like Victory and at last is finished.

MICHAEL BYARD
EMAIL

Top marks for perseverance, Michael! Ed.

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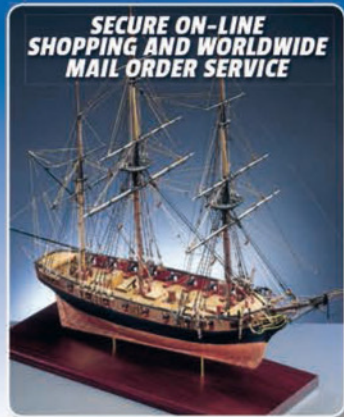
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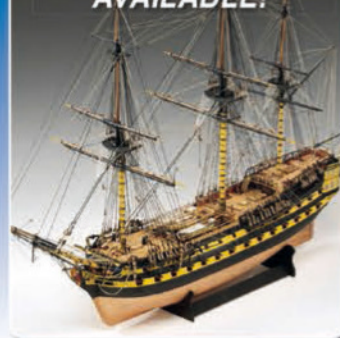
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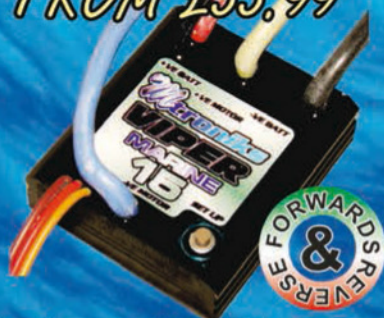
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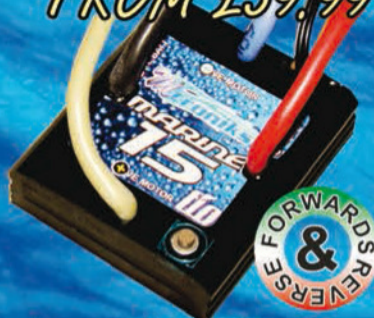
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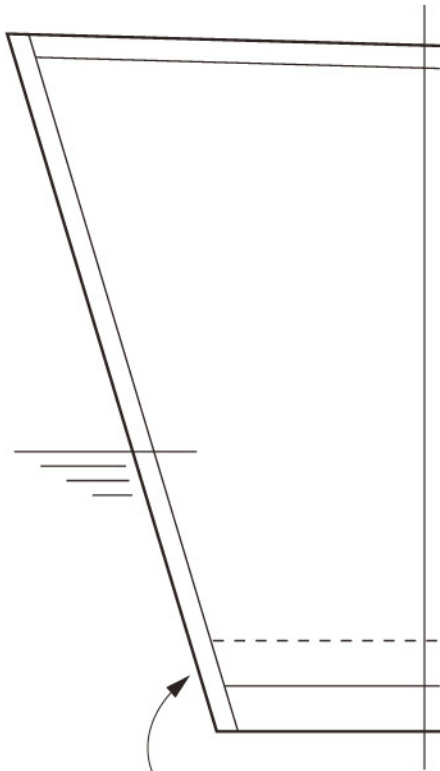
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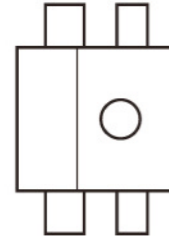
10 20 30 40 50

SCALE MM

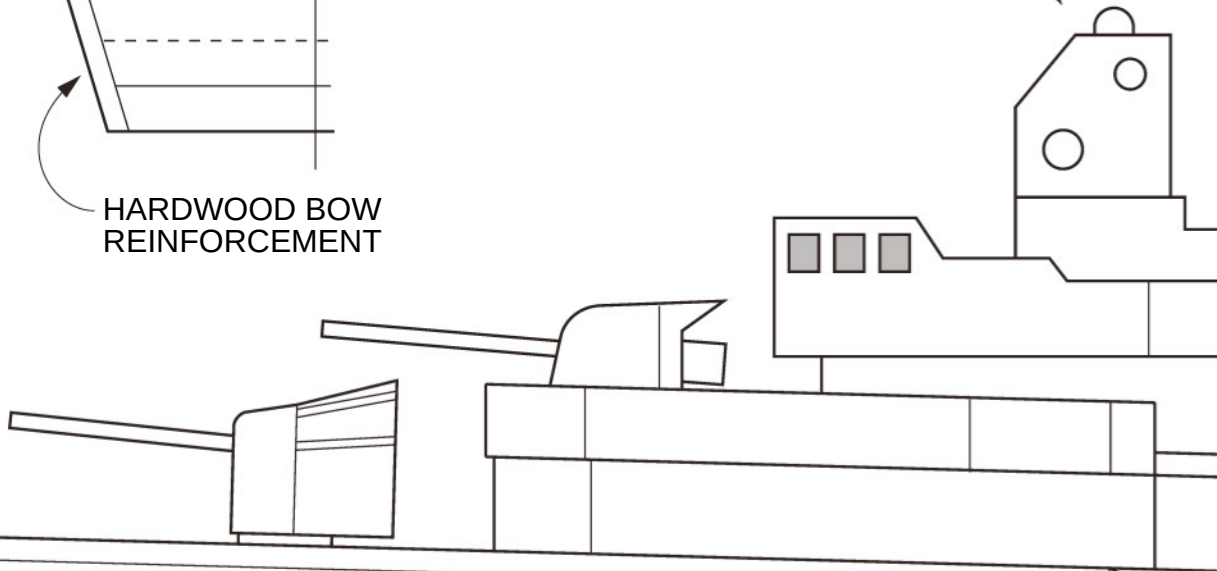
50
40
30
20
10



HARDWOOD BOW
REINFORCEMENT

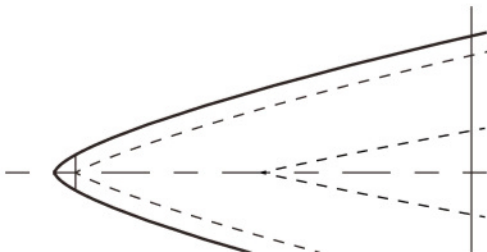


DIRECTOR

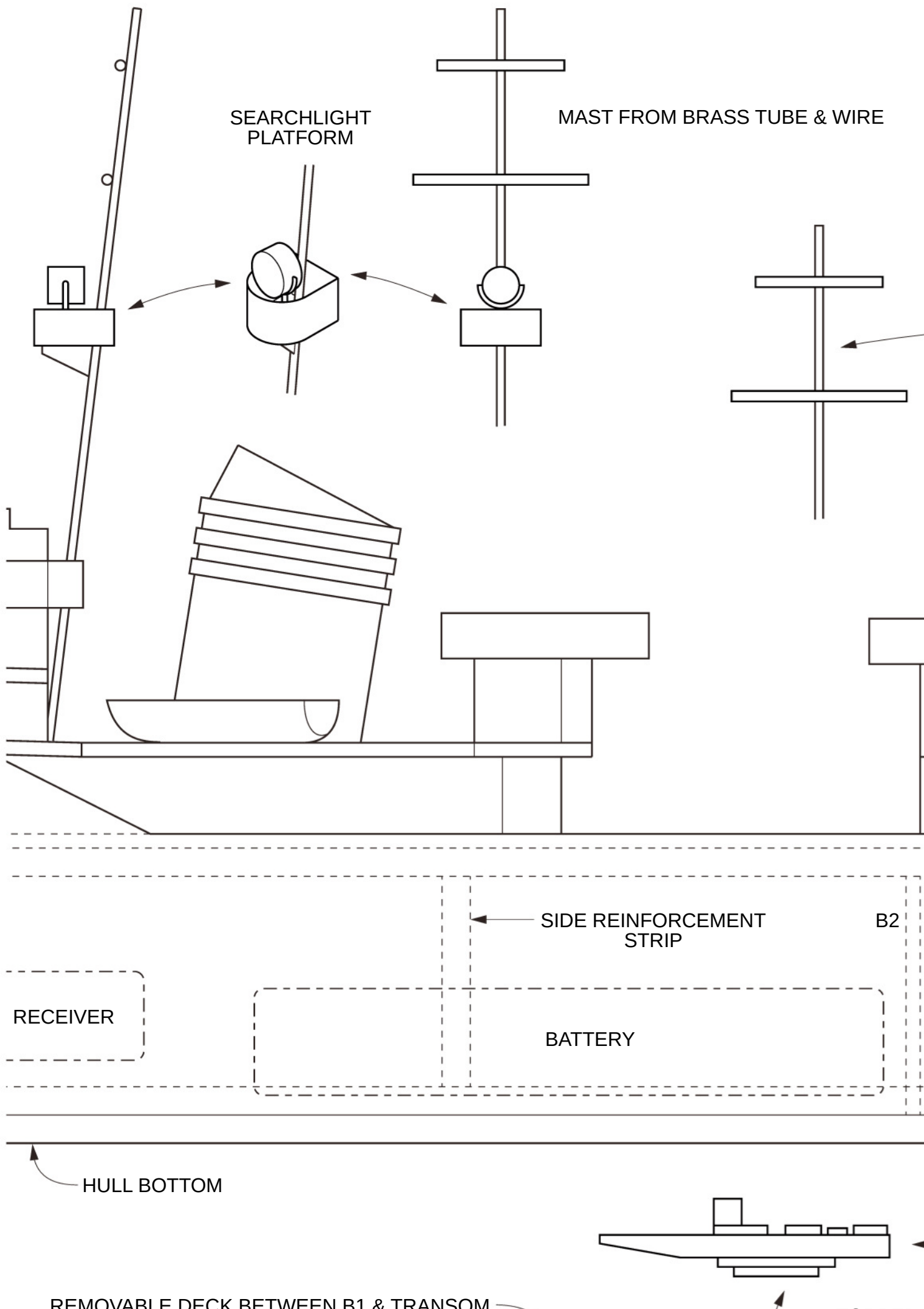


B1

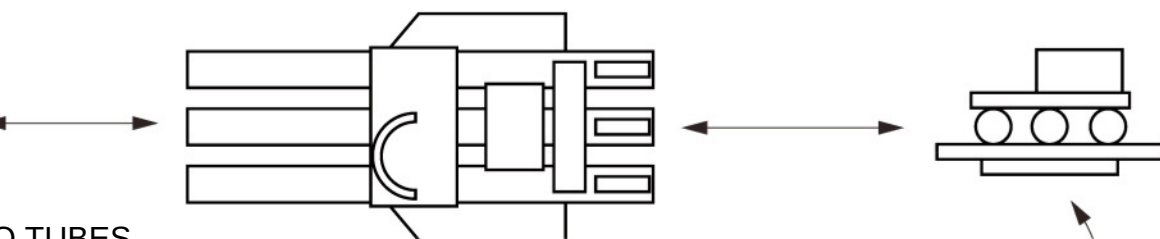
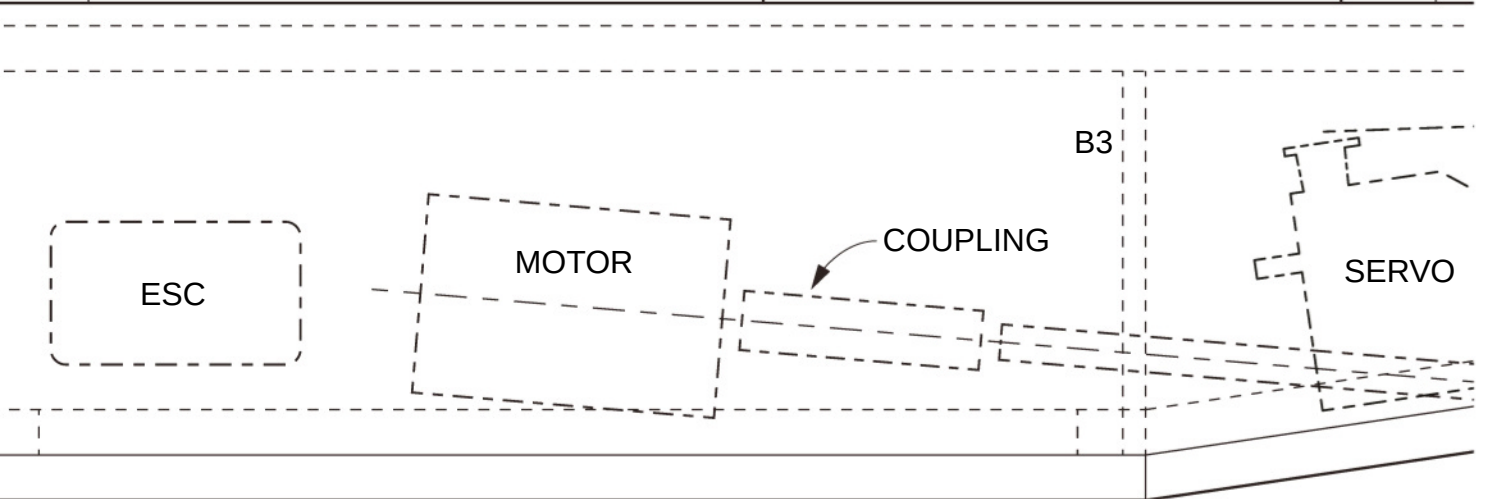
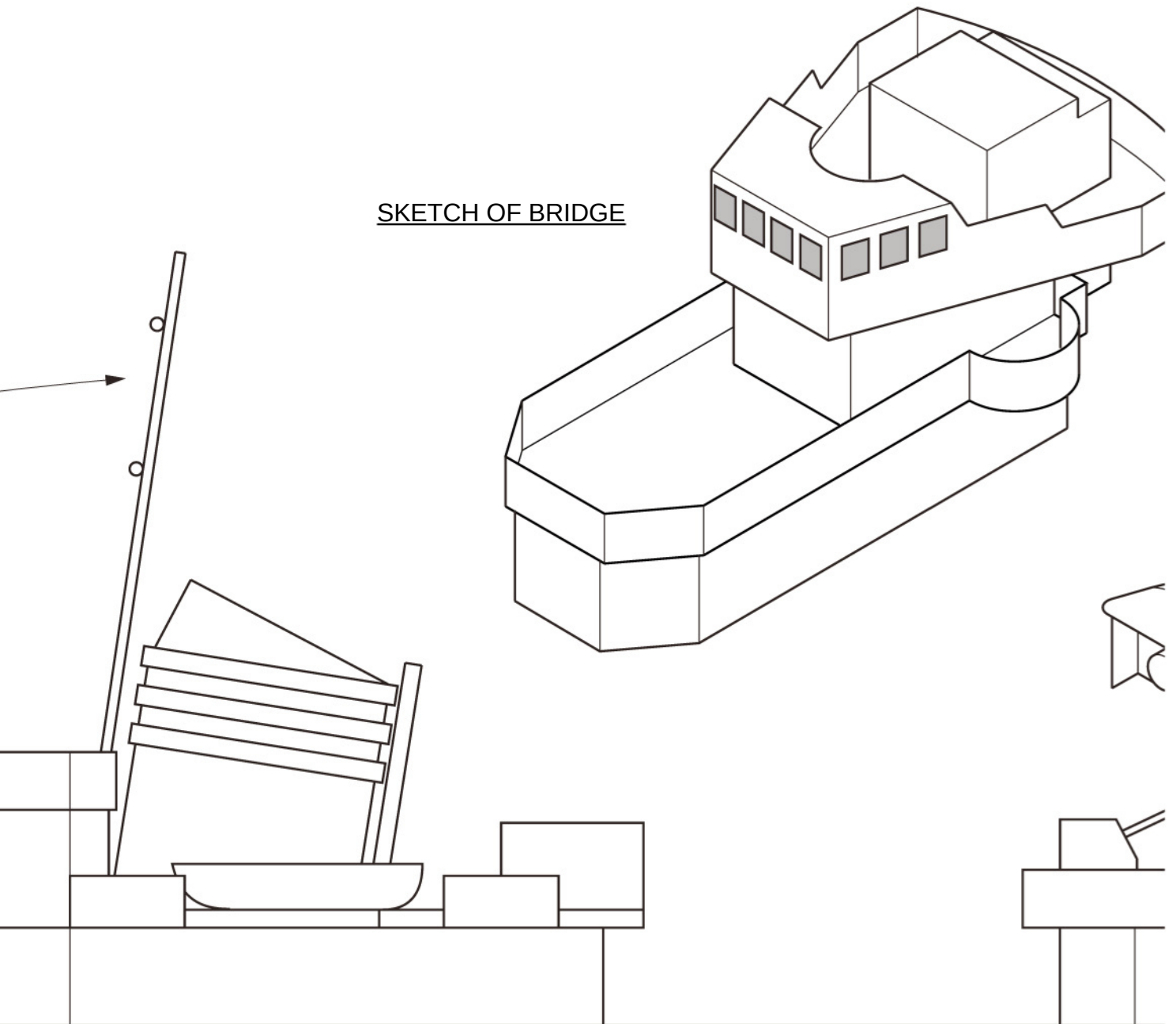
R1



FIXED DECK
1/8" (3mm) BALSA SHEET



SKETCH OF BRIDGE



Model Boats

SPOOKOINY

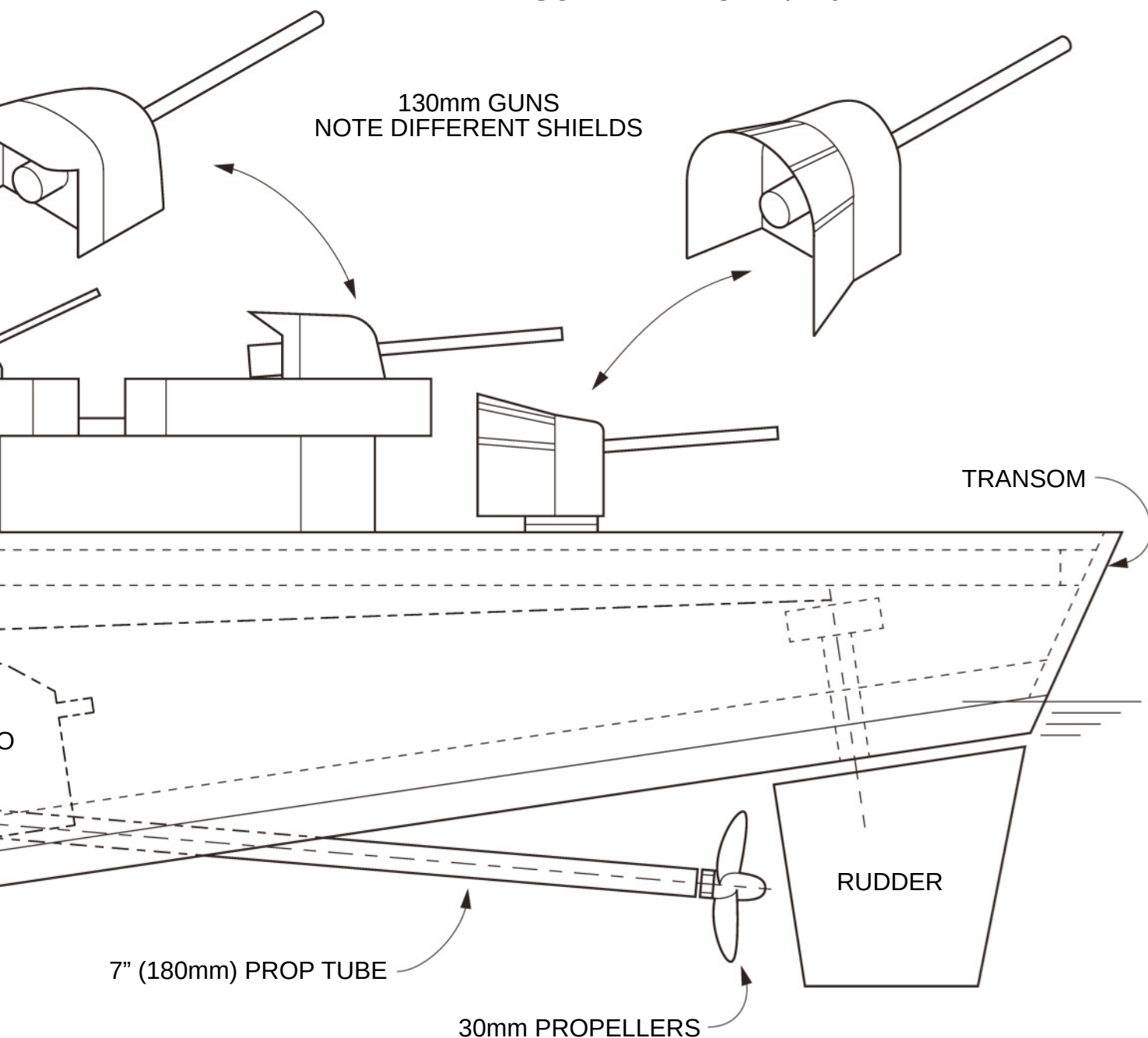
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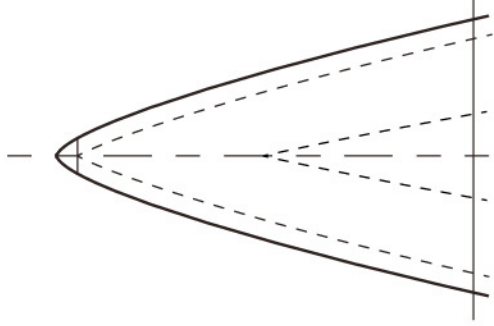
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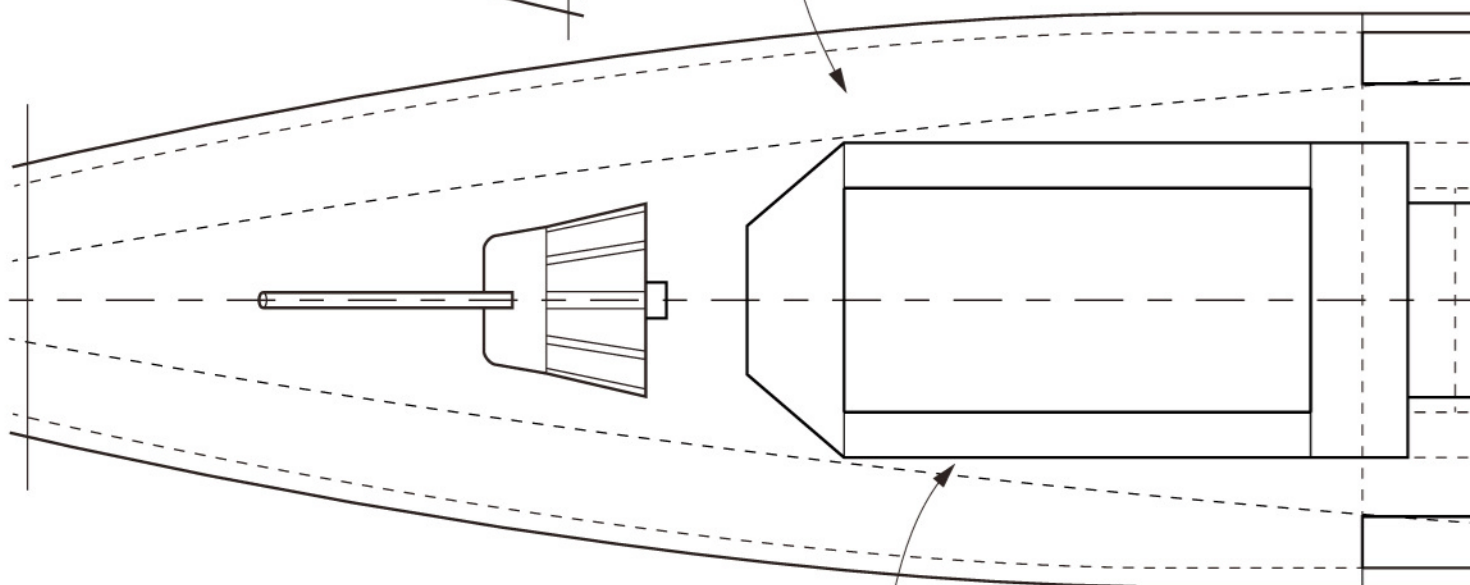
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A 'STAND OFF SCALE' MODEL BASED ON
RUSSIAN TYPE 7U DESTROYERS
SCALE APPROX. 1/140

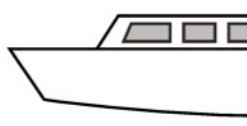
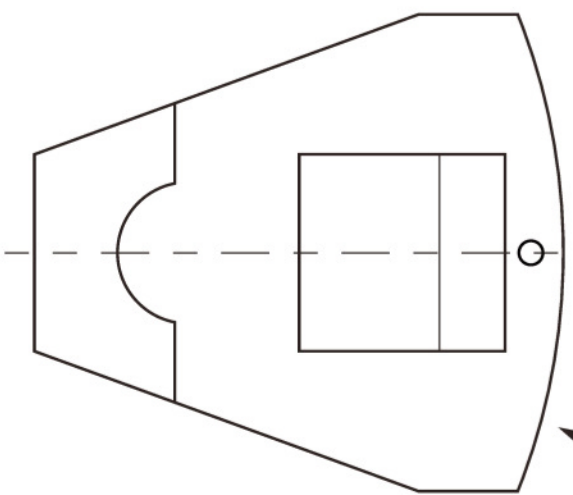




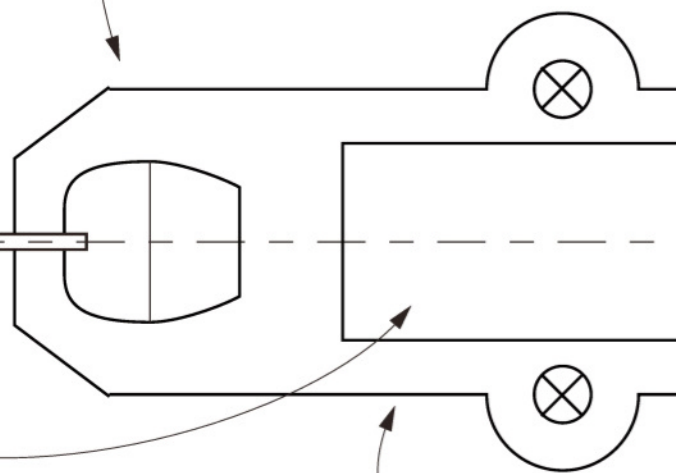
FIXED DECK
1/8" (3mm) BALSA SHEET



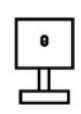
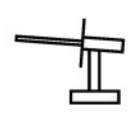
BRIDGE
1/8" (3mm) BALSA SHEET



MOTOR L



1/8" (3mm) BALSA

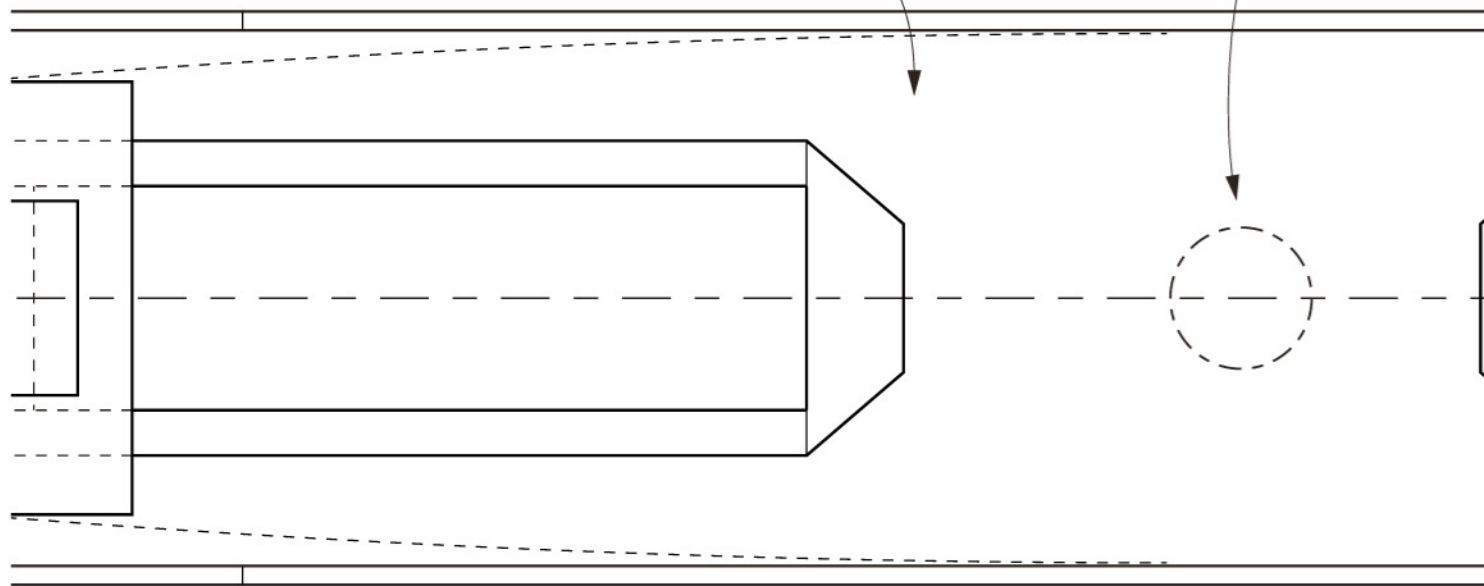


MG
4 REQ'D AT POS'N ⊗

HULL BOTTOM

REMOVABLE DECK BETWEEN B1 & TRANSOM
1/8" (3mm) BALSA SHEET

TORPEDO



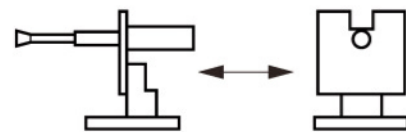
OR LAUNCH

GUN PLATFORM

BALSA BASE

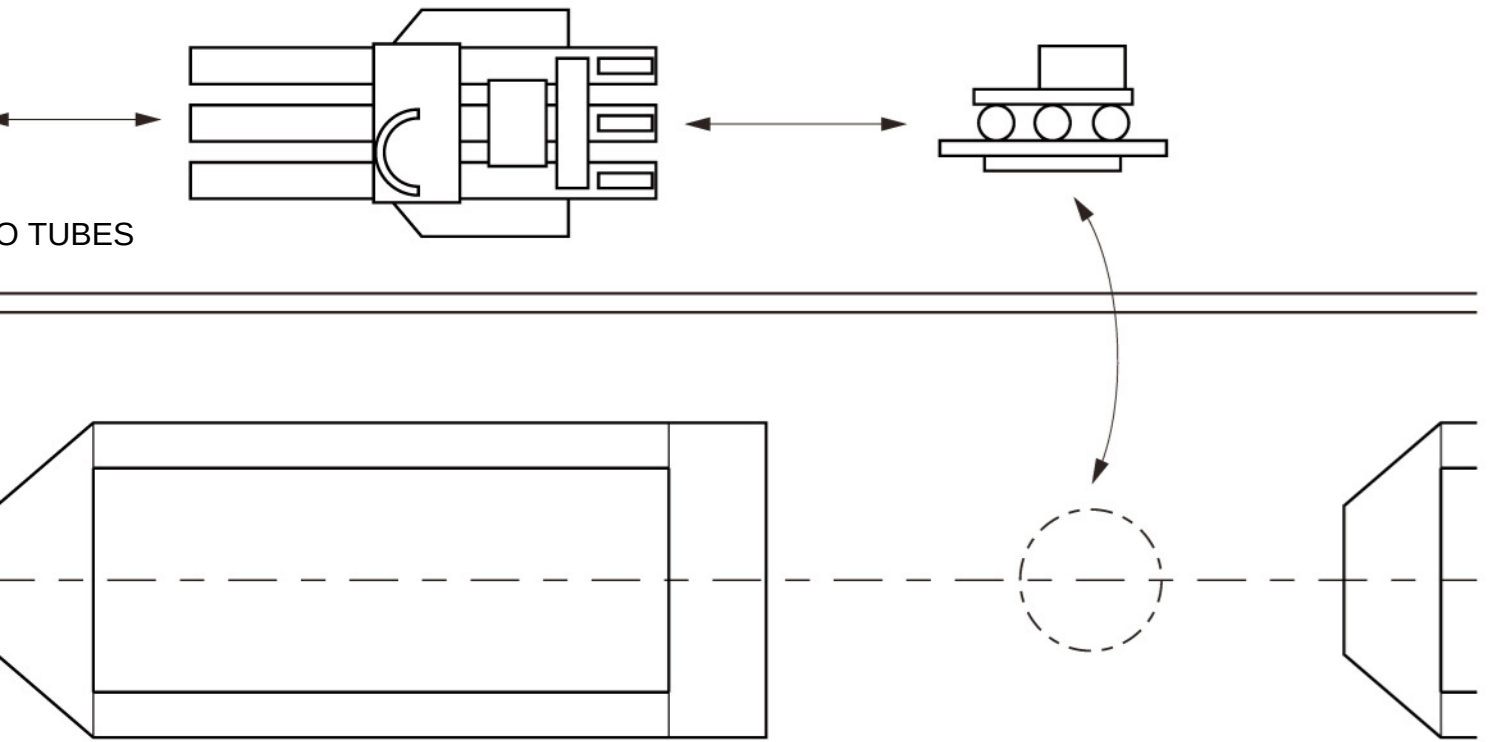
LSA SHEET

BOAT



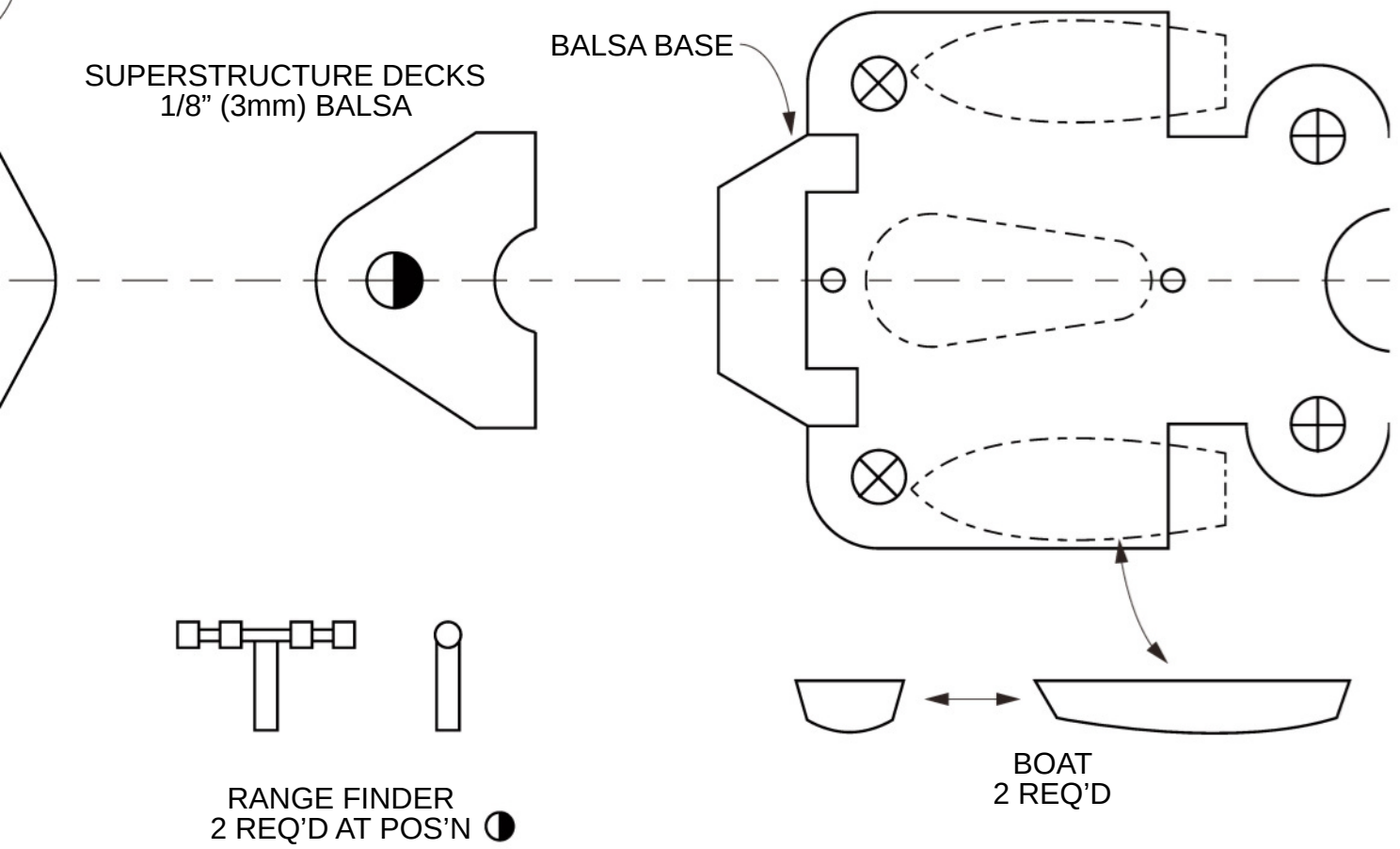
37mm GUNS
5 REQ'D AT POS'N ⊕

O TUBES



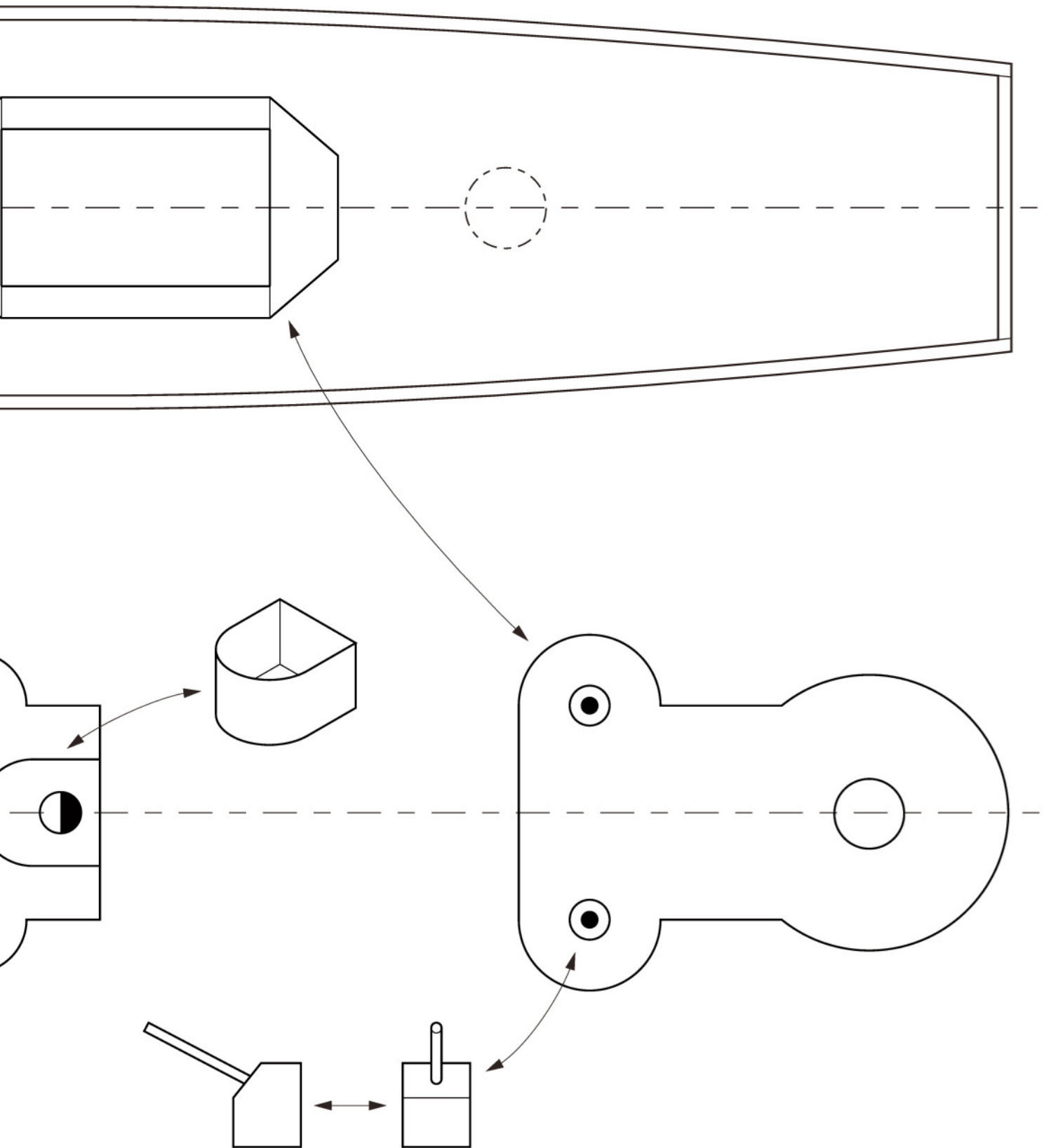
SUPERSTRUCTURE DECKS
1/8" (3mm) BALSA

BALSA BASE



7" (180mm) PROP TUBE

30mm PROPELLERS



76mm GUNS
2 REQ'D AT POS'N ●

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10 20 30 40 50
SCALE MM

② GLUE BULKHEADS TO BASE

① BUILD HULL BASE

⑧ GLUE EDGING STRIPS AROUND HULL
OPENING FROM B1 TO TRANSOM

⑩ GLUE HARDWOOD
STRIP TO BOW

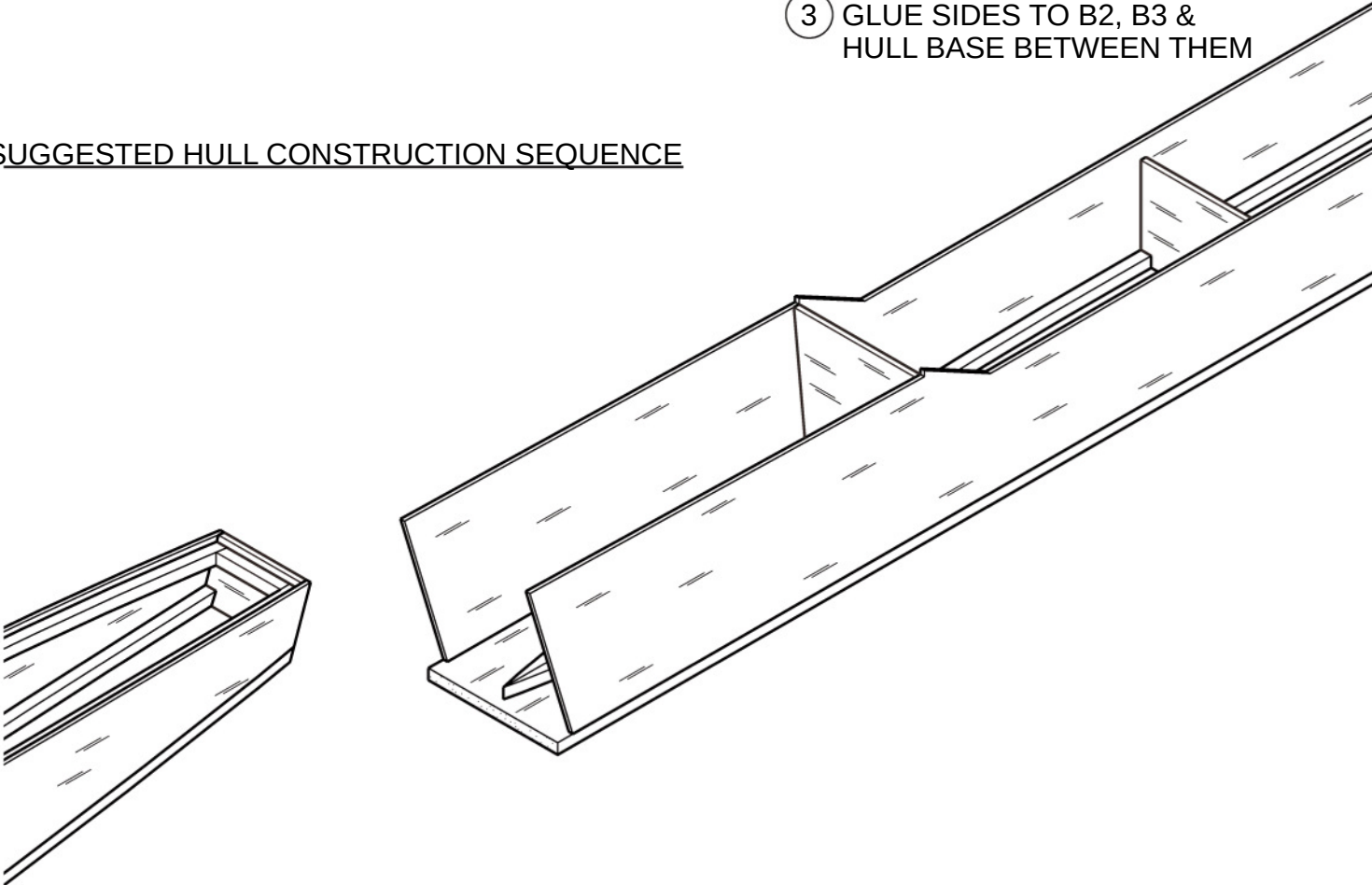
⑪ CARVE/SAND HULL BOTTOM/SIDES
TO MATCH HULL SECTIONS

⑨ TRIM OFF SURPLUS
MATERIAL FROM HULL BASE

SUC

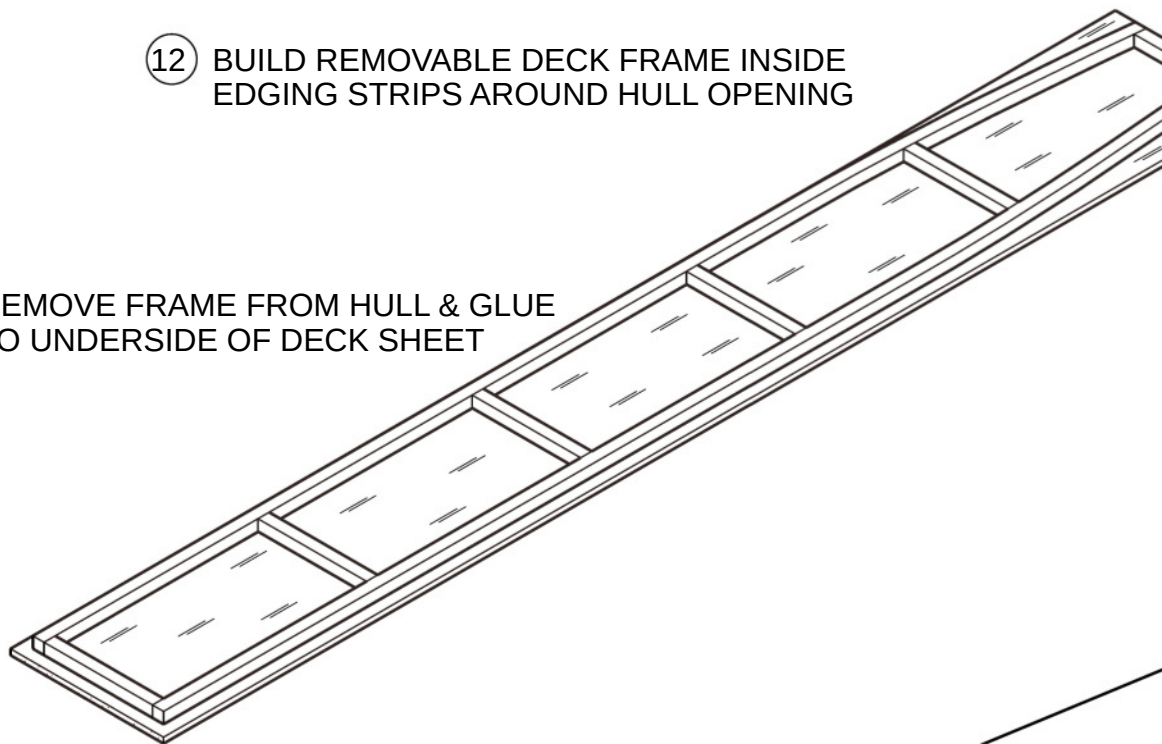
-
- ③ GLUE SIDES TO B2, B3 &
HULL BASE BETWEEN THEM

SUGGESTED HULL CONSTRUCTION SEQUENCE



- ⑫ BUILD REMOVABLE DECK FRAME INSIDE
EDGING STRIPS AROUND HULL OPENING

- ⑬ REMOVE FRAME FROM HULL & GLUE
TO UNDERSIDE OF DECK SHEET



6 PULL SIDES INW
GLUE TRANSOM

4 APPLY GLUE TO B1, BOW EDGES
& BASE FROM BOW TO B2

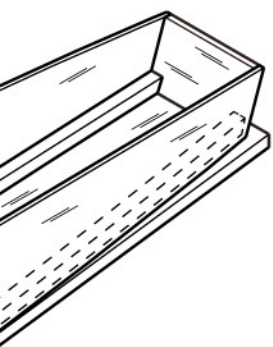
7 G
A
TO

5 PULL SIDES TOGETHER AT BOW
ENSURING GOOD GLUED JOINT
BETWEEN B1, HULL BASE & SIDES

1
BAL

14 TRIM EDGES OF DECK SHEET SO IT
FITS FLUSH INTO HULL

INWARDS &
SOM IN PLACE



Model Boats

SPOOKOINY

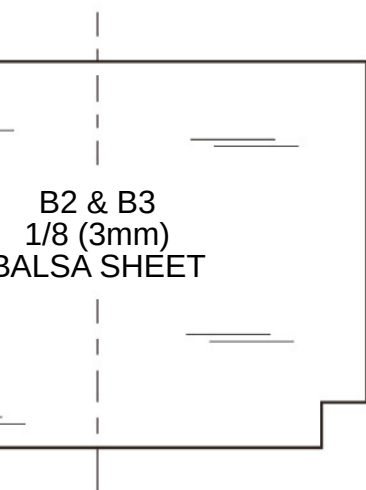
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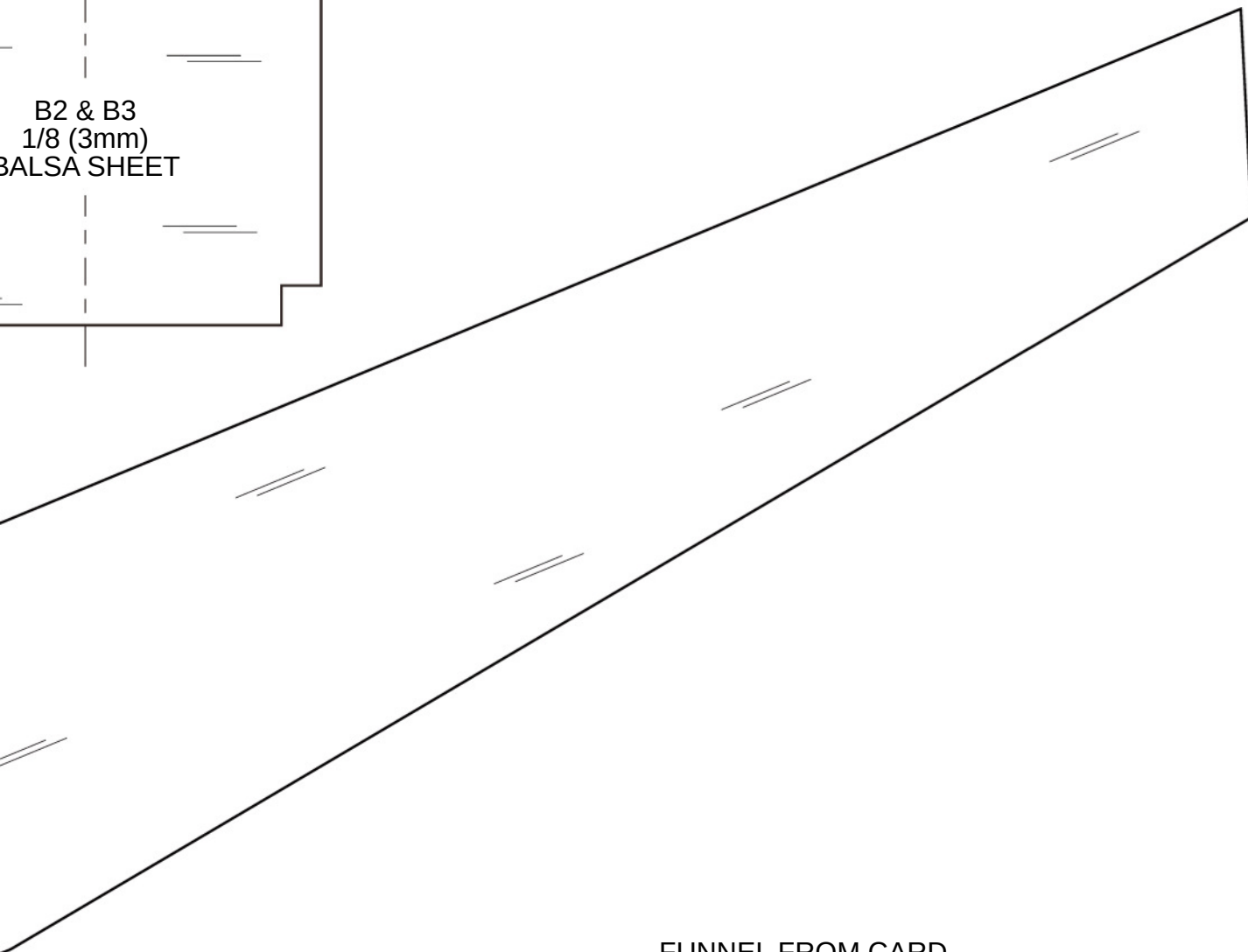
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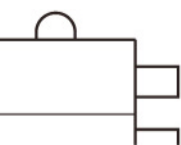
GLUE REAR BOTTOM PIECE &
ADD INTERNAL REINFORCING STRIPS
TO SIDE/BOTTOM JUNCTION



B2 & B3
1/8 (3mm)
BALSA SHEET

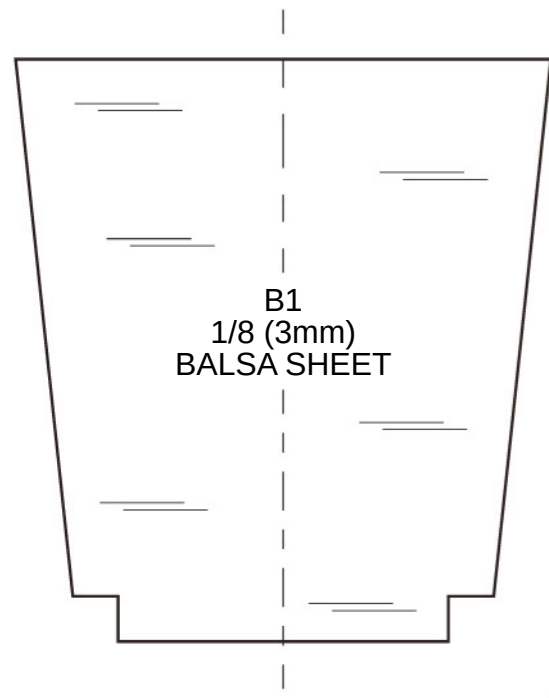


FUNNEL FROM CARD
AROUND BALSA FORMERS

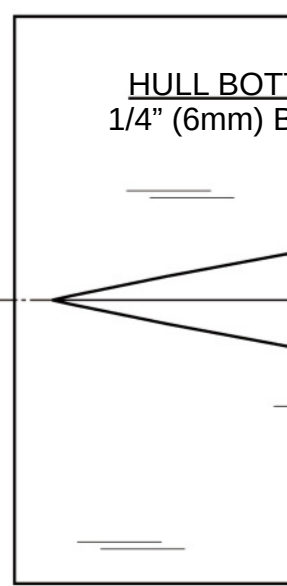
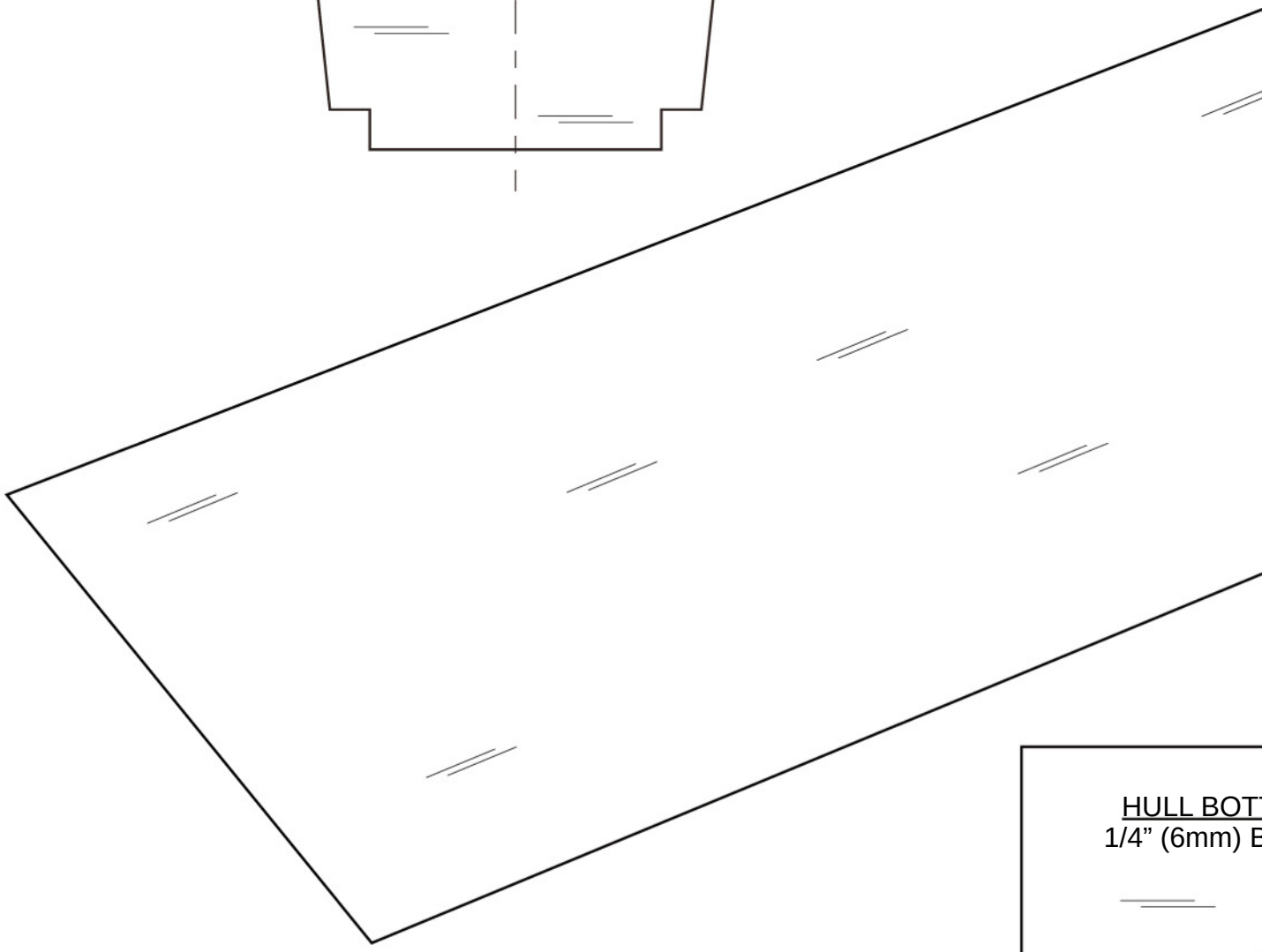


SUPERSTRUCTURE

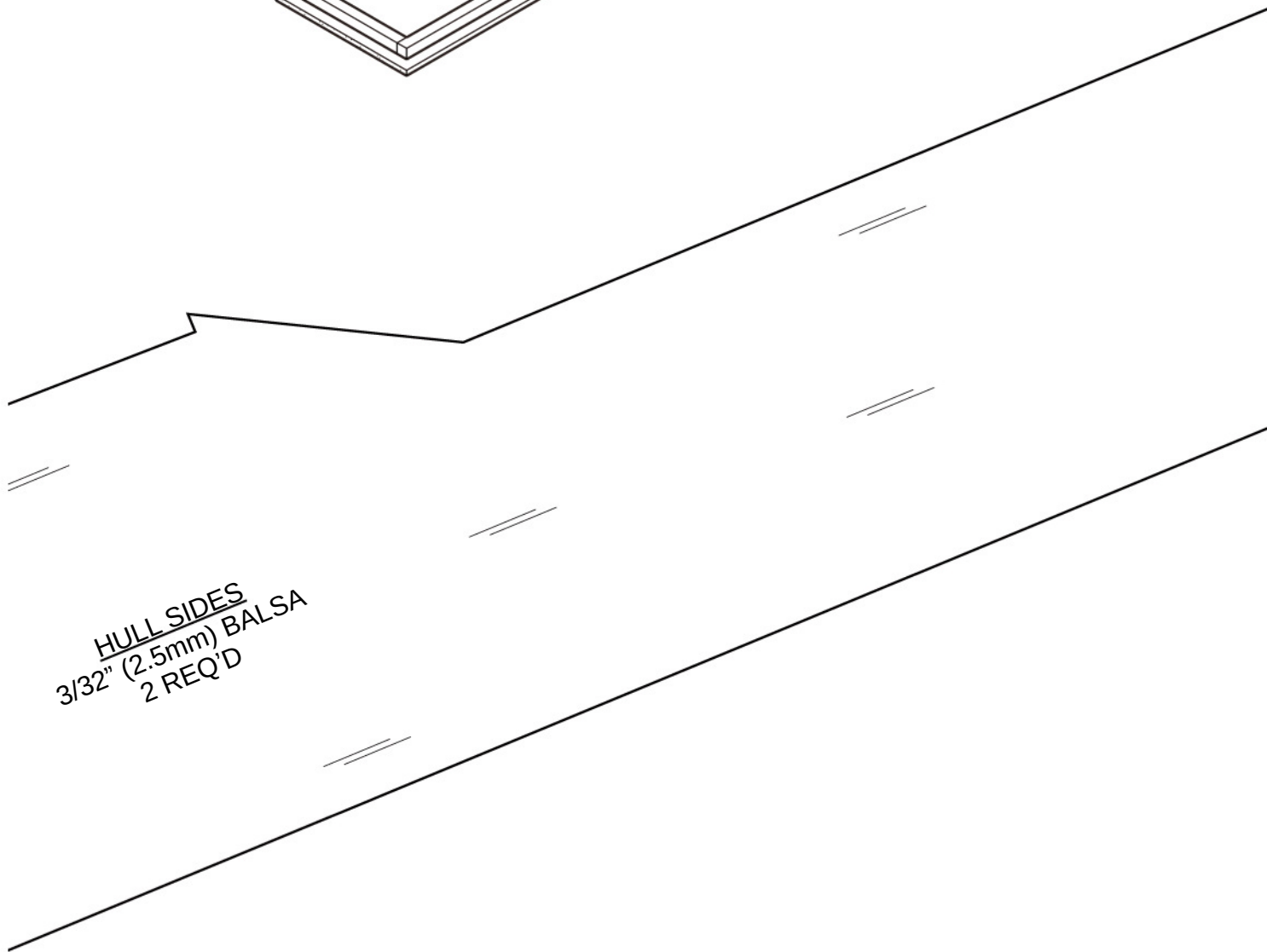
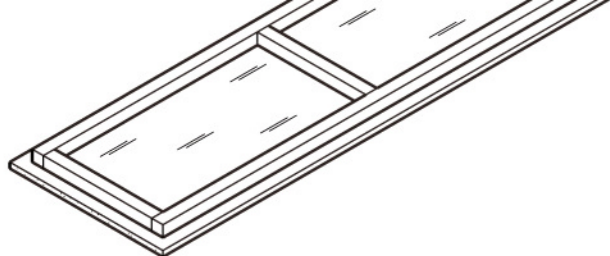
9 TRIM OFF SURPLUS
MATERIAL FROM HULL BASE



B1
1/8 (3mm)
BALSA SHEET



HULL BOT
1/4" (6mm) E



HULL SIDES
3/32" (2.5mm) BALSA
2 REQ'D

OTTOM
m) BALSA

