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November 2024
Vol. 74 No. 888

model Boats

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WELCOME TO THE NOVEMBER 2024 ISSUE OF MODEL BOATS

As many of you will know, I lean towards trying to keep both the writing style of features and the tone of the magazine in general as relaxed, informal and inclusive as possible. Of course, the content needs to specialist focused and informative, but hobbies are meant to be fun so, in my eyes, it stands to reason that the magazines dedicated to them should be too. I hope, therefore, that while reading this month's issue you will find yourself smiling, laughing out loud and/or perhaps even singing along with some of the assigned theme tunes!

Take *Plawt*, for example – the build guide that accompanies November's free pull-out plan… Naturally, you get all the instructions needed to complete this easy, economic build, but the story behind Harry Hitchenes' design (*which you can, of course, chose to finish and detail in a less 'out there' and more 'down to earth' style if you so wish) is peppered with good old fashioned Geordie humour, too. (If, by the way, you've ever considered submitting a plan of your own for publication, then on pages 46-47 you'll find some really useful and encouraging advice from Glynn Guest).

*The opportunity to personalise is also key in the latest instalment of Ashley Needham's semi-regular 'all for one, and one for all' series, which focuses on the creation of interchangeable tops for a General-Purpose hull (build details for which featured in our July 2024 issue). This time around, Ashley explains (in his own inimitable way) how to make light work of constructing a couple of very basic canal boat superstructures, which can then be customised to your heart's content.

Billing Boats' newly improved and updated police patrol boat kit – an example of which is up for grabs in this month's exclusive prize draw – is another project that presents options. Inside the box, everything needed to build a convincing 1:20 scale static replica of a WSP 10 is supplied. As evidenced by the manufacturer's shots of a prototype build being put through its paces out on the water however, facilitating the installation of radio-control was something very much factored into the design and development process of this revamped kit. So, whether you want to display or play, you can be sure Billing Boats' WSP 10 will fit the bill.

For the scratch builders amongst you looking for your next big challenge though, Nev Wade's *Dolly*, John Mileson's Norfolk wherry and the vintage steam yacht suggestion from John Parker all serve up (I was going to say 'serious', but in terms of John Mileson's feature that would be somewhat of a contradiction in terms) food for thought.

The cherry on the top is the Your Models/ Your Letters section, and it is perhaps time I pointed out why these must-read pages are always positioned right at the back of the mag. Quite simply, as it's your support that keeps Model Boats afloat, I think *you* deserve the final say.

Enjoy your read,

Lindsey

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Tamar Class Lifeboat

The Tamar class lifeboat was introduced into the RNLI fleet in 2005. It was the result of several years of research and development to produce a virtually unsinkable slipway launched lifeboat; if it capsizes in will right itself within a few seconds.

The kit is to the usual high standards and includes building manual, GRP hull, other materials; CNC cut styrene decks and superstructure, full size plan, resin, and white metal fittings.

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

IN MEMORY OF Brian Perkins, 1936-2024

We are sad to announce that Brian Perkins, a long standing and highly regarded member of the model boat community, has recently passed away.

Brian's passion for modelling began in the early 1970s with I.C. powered model boats. In those early years, he also ventured into 1:8 scale glow-engined cars and became a founding member of the track building group in Wombwell, which to this day is still going strong. His interests then expanded to embrace 1:12 R/C cars at the Britdale Glass tracks in Wath-Upon-Dearne, where he keenly participated in race events from the late 1970s through to the early '80s. After this came model flying with gliders and glow-engined aircraft, which brought him immense joy. By the mid-1980s Brian had started his own company, so with all his time and effort being devoted to the business, his hobbies were, naturally, set aside – but only briefly. A model boat kit gifted to him by his son Stephen (who runs the Manvers Waterfront Boat Club) one Christmas saw Brian's passion instantly reignited. From that point onward, his interest in all areas of model sailing, including yachts, submarines, workboats and live steamboats, flourished.

Brian became an active and very popular member of both the Kirklees Model Boat Club and the Manvers Waterfront Boat Club, and will be sadly missed by all who knew him.

The late Brian Perkins, formerly a member both the Kirklees Model Boat Club and the Manvers Waterfront Boat Club.

OUT AND ABOUT

Making Waves – RNLI Cymru 200

Running through until March 2025, this exhibition at the National Waterfront Museum in Oystermouth Road, Marime Quarter, Swansea SA1 3RD, pays tribute to the life-saving work of the Royal National Lifeboat Institute's around the Welsh coastline. Visitors can learn all about how the types of rescues and thus the equipment needed to carry them out have changed over the years, the heroic crews who've served, and the innovative lifeboat designed and built at Wales's Atlantic College.

The museum is open from 10am to 5pm daily, and admission is free of charge.

Snap up a charity supporting Waterways calendar

Those interested in working on one Ashley Needham's latest top ideas (see page 14-18) may find further inspiration in River Canal Rescue's 2025 Waterways calendar. Priced at £9.99, including postage and packing, this can be ordered via RCR's website www.rivercanalrescue.co.uk or by calling 01785 785680, and every sale made will increase the donation RCR will be making to Cancer Research UK.

Images for the calendar have been selected from over 375 entries submitted to a photographic competition – the judges (RCR MD Stephanie Horton, *Canal Boat* Editor Charlie Waters, and Canal & River Trust Communications Manager Damian Kemp) having had the difficult task of whittling these down to just 13 winning shots (one for each month and then a further shot for the cover). All entries, however, will feature in a video to be released on YouTube and RCR's Facebook page.

Rewind TV

Stills captured from the nostalgic documentary Britannia, featuring the royal yacht in action (left), Earl Mountbatten attending the officer training passing out parade for cadets at the Britannia Royal Navy College in Dartmouth (centre), and a young Prince of Wales (now King Charles III), who also underwent six weeks of training at the BRNC (right).

Following its successful launch on Sky earlier this year, Rewind TV, Britain's newest independent channel, is now available to watch on Freeview (Channel 95). With broadcasting schedules presented in retro style for a truly immersive experience, this channel offers the opportunity to revisit, or perhaps discover for the first time, a wide range of documentaries, films, dramas, comedies, shows, *etc*, from the 'Golden Age' of British television. Just three of the nostalgic gems worth tuning in for this Autumn are:

Britannia – the early 1970s' documentary

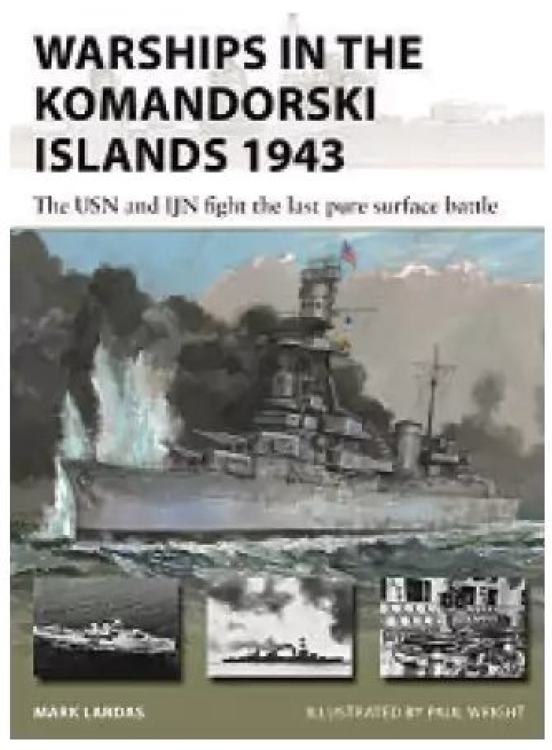
The Loss of the SS Schiller - the award-winning World War II drama-style documentary

Raise the Titanic – the classic feature film in which a U.S. Admiral (Jason Robarbs) and his team compete with Russians in an attempt to salvage the luxury liner.

Another of the gems worth watching out for this autumn on Rewind TV is Ian Stirling's award-winning drama-documentary The Loss of the SS Schiller.

BUY THE BOOK

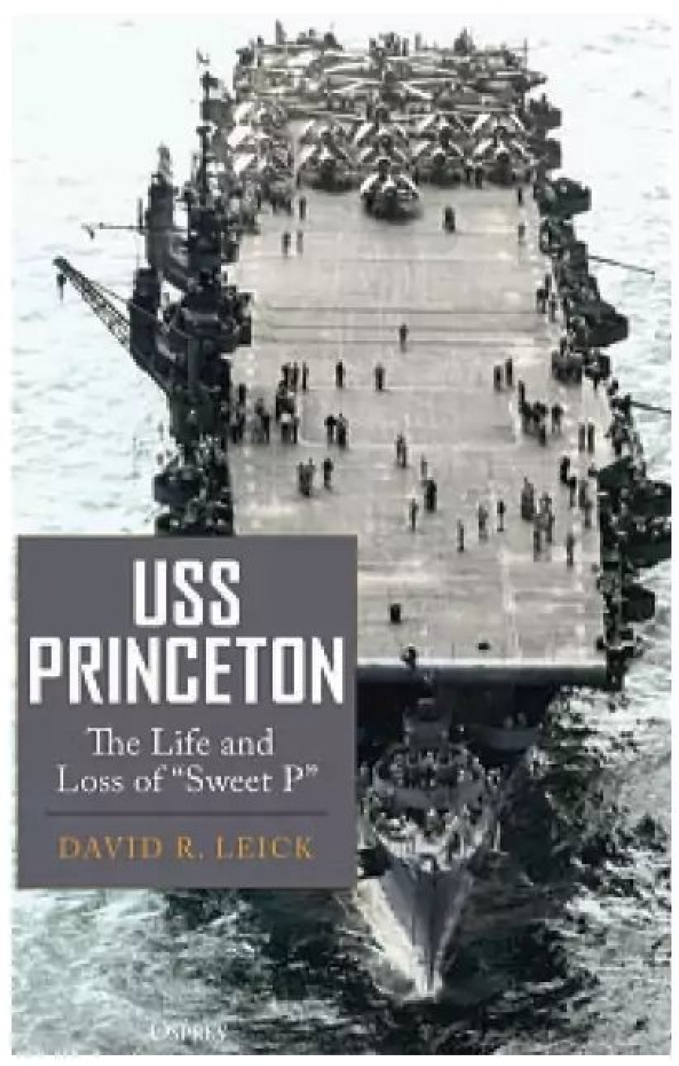
Warships in the Komandorski Islands, 1943



In this forthcoming new title naval expert Mark Lardas provides a detailed account of the Battle of the Komandorski Islands in the North Pacific during World War II. The book, illustrated throughout with archive photographs and ship profiles of all the major US and IJN warships involved, explains how, despite being seriously outgunned, the US Navy managed to emerge triumphant from this hard fought solely surface engagement in which aircraft played no part.

Due for launch on October 24, 2024, in paperback format, the title, allocated ISBN 9781472861405, will carry an RRP (Recommended Retail Price) of £12.99. Copies, however, can currently be pre-ordered via www.ospreypublishing.com at the discounted price of £11.69. For the e-readers amongst you, digital downloads are also available.

USS Princeton, The Life and Loss of "Sweet P"



Also due for release on October 24, 2024, is this study of the aircraft carrier USS *Princeton* and the vital role she played in the US Navy's victory over the IJN during the war in the Pacific. Referring back to first-hand accounts from archives such as the Naval History and Heritage Command, author David R. Leick examines the campaigns, tactics, command decisions, and life aboard ship, spanning from early 1943 until *Princeton*'s tragic demise in October 1944.

The title, presented in hardback format under ISBN 9781472868589, will carry an RRP of £25, but can currently be pre-ordered at the discounted price of £22.50 via www.ospreypublishing.com. Once again, digital download options are also available.

WIN!

WIN A PRE-PRODUCTION *WSP 10 KIT*

Fancy nabbing a pre-production factory sample of Billing Boats' newly improved, updated and recently re-released 1:20 scale WSP 10 Passau Patrol Boat kit? Then here's your chance!

Excitingly, although this new version of the WSP 10 is being sold as static model kit, the option to add radio-control has clearly been kept very much in mind throughout the design and development process. As a result, while the build itself can be achieved by the 'Advanced Beginner' (with the help of the comprehensive photo manual supplied in the box), there's also enormous scope for the more experienced amongst you to install your own running gear and get the finished model out on patrol. But don't take our word for it, check out Billing Boats' prototype being put through its paces on the lake!

All-points bulletin

The kit builds a 1:20 scale replica of a WSP 10 (WSP being an acronym for *Wasserschutzpolizei*, which literally translates as Water Protection Police) patrol boat built at the Bodan Shipyard in Kressborn, Germany, and delivered new on June 30, 1989, to the Harbour Police in Bayern. Currently stationed at Passau on the River Danube, this vessel patrols an area stretching roughly 80km upstream from the Austrian border. It measures 15m in length, with a beam of 3.9m, and is fitted with 300hp MAN diesel engines, giving it a very nippy approximate speed of 40kph. It is usually manned by a crew of two and undertakes a wide variety of police duties, including surveillance, especially in connection with dangerous or potentially risky to the environment cargoes.

HOW TO ENTER

To be included in the draw, all you need to do is complete the entry form included on this page, cut it out (photocopies of the form will be accepted from those of you not wishing to deface your magazine) and mail it back to us at:

BB WSP 10 Kit Prize Draw
Model Boats
Mortons Media Group,
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Horncastle, Lincs LN9 6JR

Please note, the **closing date for entry submissions** will be **Friday, December 20, 2024**.

Good luck, everyone!

BB WSP 10 KIT PRIZE DRAW

Name:

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TERMS & CONDITIONS

N.B. For this particular prize draw we can only accept entries from those residing in mainland UK, the European Union and North America. The competition closes on December 20, 2024. 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

Canal Boat GP hull topper

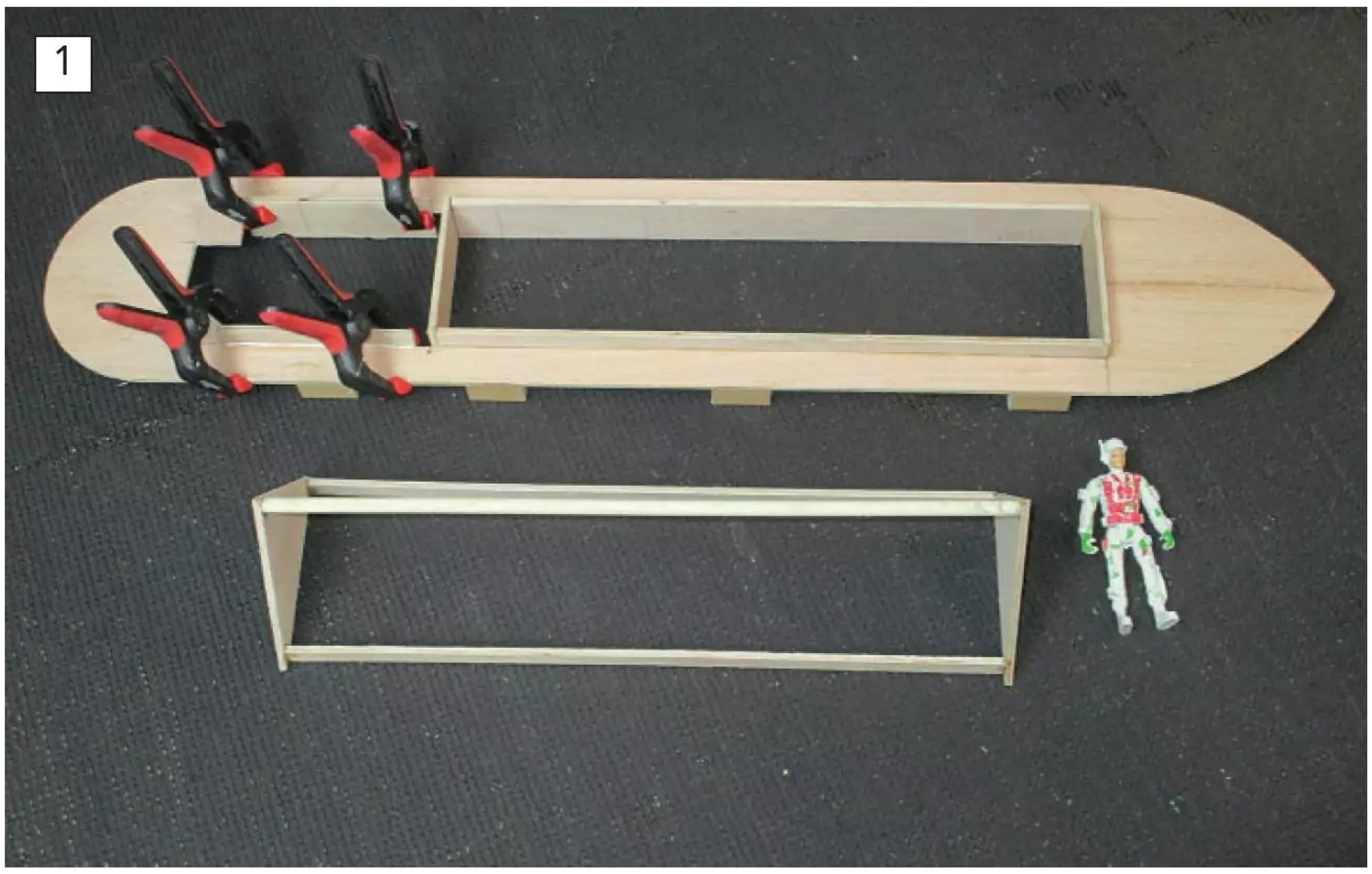
Ashley Needham provides yet another top idea for his super versatile General-Purpose hull

So far, this series on my super versatile General-Purpose hull has featured a disco boat and Crimea gunboat/paddle warship tops, but since then a couple of other possibilities I'd been toying with the idea of have come to fruition. This month, though, to narrow things down I'll be focusing on a single theme, but one with multiple options!

The concept of a canal boat as a top came about when I was mulling over several alternatives with my mate Trevor. With a smile, he produced, from his `come in handy` box, a 4-inch-tall figure (it might have been Dr Who), which he stood on the stern of the plain deck blank sitting in my GP hull. Once we'd then put a long box in the centre of the deck, and it was plain to see what these two simple items made the boat look like, yes, a canal boat!

This is only a short article as, to be honest, making a basic canal boat superstructure is very easy – so the paucity of photos illustrating the construction process is somewhat deliberate, as things are pretty self-evident. It would be a longer article in the normal course of events, but as the hull has been made already, that's 2/3 of an article dispensed with in one foul swoop!

I have not gone for super-realism, but with something like this you could go to all out, as the base for the model is very simple and lends itself to being heavily accessorised. Indeed, ignoring that this top was made to fit an existing hull, a very simple 'date box' style hull could be knocked up in an afternoon to provide a means of getting any number of canal boat tops on the water. I apologise for the fact that there is only one 'build photo'! The deck was about the only thing worth photographing, as the cabins are so simple they really don't necessitate a photo `in the plain wood`, as it were.


1

To work…

I have decided, as the builder, that there are two main styles of canal boat: the live-in or passenger variety, and the workboat. Just as the actual hull was sized and outfitted to accept a variety of top types, so the canal boat deck can easily be configured to accommodate different styles of cabin, and this is achieved by the use of a central well or cargo trough which can be filled with things various or alternatively covered by a longboat cabin.

First things first, a deck had to be made and a piece of 4mm ply was put on the work bench, the hull lowered on top upside down and the outline drawn round with a pencil. Obviously, this was too big to sit inside the hull bulwarks, so a line was drawn approximately 4mm inside this outline and then cut out on a bandsaw.

I decided to leave a very shallow bulwark, so 15mm strips of wood were used as spacers underneath, meaning the deck could be sat on the shelves already in place (see **Photo 1**). Remember, the GP hull (if you are new to the magazine, see the July 2024 issue of Model Boats) had strips inside on which to sit a deck upon. These were set low for the gunboat, so any other decks needed a spacer to raise them to the required height. Following a bit of 'light trimming' to achieve a reasonable fit, the central load-well was marked out (approx. 300 x 75mm, set 100mm from the bow, giving approximately an 18mm 'walkway' either side), followed by a second smaller well 90mm long, that would be covered by a small cabin (see **Photos 2 and 2a**). As you step down into a narrow boat cabin, I needed this second well to simulate the depth of the cabin floor. Neither of the wells had to be deep, as the apparent depth of the main one would be covered with a load of some sort, and the passenger end painted black, disguising the shallowness of it.

"I have not gone for super-realism, but with something like this you could go to all out, as the base for the model is very simple and lends itself to being heavily accessorised"

30mm deep ply strips were glued around the inside of the cutaway to give a 10mm high combing and a well depth of about 20mm (as measured from the deck surface). After the glue had set, a ply floor was added, glued on from underneath. I did the same for the rear well, although the depth and combing height wasn't as critical as this would be covered by either the small cabin or the end of the passenger cabin. In addition, and as an afterthought, I made another cut-out for the step going down into the cabin – one step only being necessary, as the rear well would be painted black, detracting from its shallow depth. Finally, the front load area was treated to a spot of red oxide paint (again see **Photo 2**).

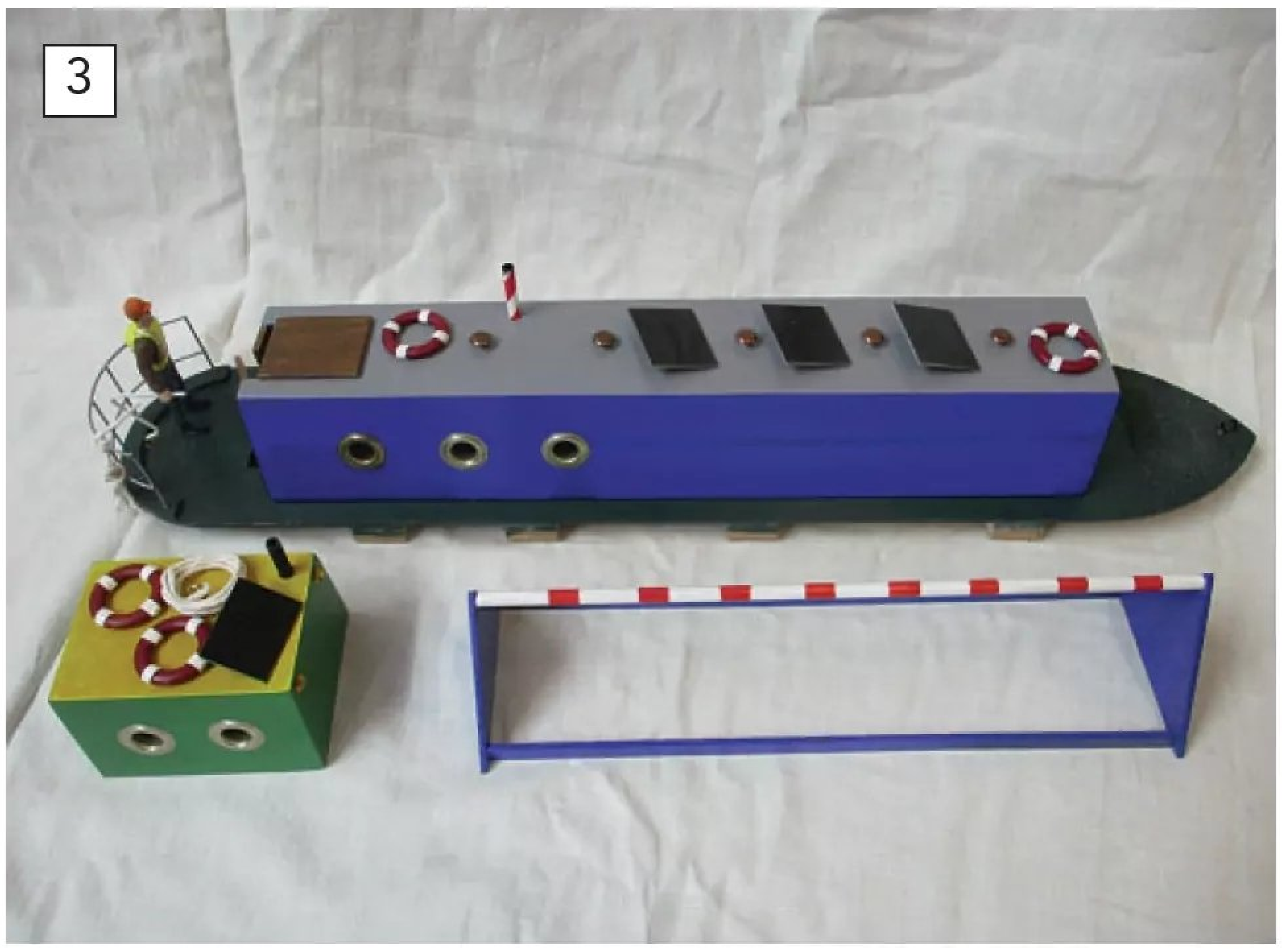
At the stern, a horse-shoe of ply was cut and glued into place as a seat for the stern rails, and for this I used 25mm square hole steel galvanised wire garden mesh – very useful as instant railings (see **Photo 3**, overleaf), while at the bow a portion of the front was painted with PVA glue and sprinkled with sand to mimic a non-slip area, before painting the whole deck in a dark green acrylic paint (again, see **Photo 2a**).

Deck trappings

A 10mm high ply box was made to fit over the central well lip, incorporating triangular front and rear plates 75mm high to support a 6mm diameter dowel bar over


2


2a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4

the top (this can be used to drape a cover over as a feature if you wish to do so). For the rear, a simple ply box 100mm long by 60 wide was fashioned in 4mm ply, with slightly sloping sides (85 wide, tapering to 65mm at the top) and a door cut out. Holes, 12mm in my case, were drilled in the sides and tarpaulin eyelets (approx. 23mm outside diameter) were glued in place after the cabin had been sealed, sanded and painted in a green craft acrylic paint, to act as portholes or windows, and they do the job very nicely! I finished the cabin with a stovepipe, life rings, a mooring ring and rope, and finally a solar panel! (a square of black acrylic with silver painted edges).

For the passenger top, a simple 420mm long box by 65mm high, similar to the rear cabin, with slightly sloping sides (85mm tapering to 65mm), was made, again from ply. This is a close fit over the well combing, which holds the top snugly in place and extends, of course, to cover the second small cabin-well (see **Photo 3**). As with the cargo cabin, once a few stiffeners had been added inside, the doorways were cut using the bandsaw after the main construction had taken place (I found this easier than trying to hold everything together), and I then added two end pieces to form the doors. Again, tarp eyelets were used as portholes, thin ply 'windows' created for the front portion, and, after painting, the top was accessorised with life rings, three 'solar panels', a stove-pipe (paper straw) and a row of vents – the latter being represented by antique-style upholstery nails, in a nice bronze colour, fitted in pre-drilled holes with superglue and spaced to ensure an even height using plastic craft beads.

Access to the cabin at the rear for the driver was taken care of by a cut-out similar to that of small cabin. This time, however, I made some ply doors and a top sliding hatch cover (its fixed in place!) – an escutcheon nail providing the nice little brass doorknob (see **Photo 4**).


5

The captain

Once again, I plundered my stock of cheap 85mm high army men and modified one lucky chap by carving off his military equipment and padding out his chest in with filler; a necessary evil, as due to him being a thin hollow figure, I couldn't completely trim off all the straps, grenades and so on. After some sanding, he was then given a makeover in acrylic paint. He now sports a yellow safety vest with reflective silver stripes, and his cap has been painted orange which may be taken to be a hard hat (see **Photo 5**). These figures were very cheap and just happened to be in my spares box, but ones of a similar size are plentiful if you look online or go to car boot sales. Kitted out in H&S equipment, my man now really looks the part for the work boat, but at the same time doesn't look out of place when using the passenger top. Looking around for differently styled figures will allow you to customise your top a bit more, but you will have to insert wire 'pegs' in their feet that will engage with holes in the deck in order to swap your characters around. A hippy style of driver would, for instance, work really well if you decided to give your canal boat a fabulous 1970s' psychedelic paint job.

"The world is your oyster here!"

Anyway, my man is steering the boat via a traditionally shaped tube tiller bar, created from solid wire, painted white, and made to fit into his hand. It doesn't turn with the rudder, as although a simple thing to arrange, actually providing the figure with sufficient arm movement or flexibility in the body would be difficult at this size. Once moving, though, the tiller wouldn't be twiddled much in any case, just a few degrees either way.

If I were to have used a smaller 75mm figure and adjusted the proportions of the cabin to suit, the canal boat would suddenly appear to be much larger, while conversely a larger figure and larger cabin would make for a slightly smaller looking craft.

Accessories

The world is your oyster here! I have used 'Toxic Waste' sweet barrels, just as they come (once emptied of sweets!), for a bit of fun in the cargo top – these just being sat on the ply floor (see **Photos 6 and 6a**) As an alternative, a coal load has been made, by gluing 10mm pea shingle


6


6a

on to a ply insert and spraying it gloss black (see **Photo 7**). You would think 10mm lumps of 'coal' would be too big, but I found that smaller sized lumps simply ended up looking like black sand! You could, of course, also go down the carved foam/PVA/sand/paint route to simulate a load of sand, gravel or what-have-you.

Expanding yet more on the working canal boat theme, a cheap seaside sand-toy digger I came across made a good dredger insert once I'd cut the undersize cab off, discarded the wheeled section (it now sits on a block of wood sized to tuck into the cargo well) and then painted (see **Photo 8**).

I have kept the passenger/living-in top fairly basic (see the intro shot for this feature), but clear windows perhaps with lighting inside would be easy, and there are loads of dolls-house items to be had for additional empennage on top or along the sides. Hanging fenders, rope, balloon types or tyres, would certainly help add interest to the plain hull sides.

On the water

With most of the Disco Boat weights in place under the battery and of course having the very small 385 can motor, 25mm brass prop and 7.2V Nimh stick, performance is very canal boat-like. This boat is, however, super stable and she turns on a sixpence (very manoeuvrable). She's not fast, but she does have sufficient oomph to counter headwinds and the like. Indeed, one could say she's actually overpowered for a canal boat. As per the real thing, it doesn't really matter how you choose to ballast the boat; deep, shallow, bow up... you see all sorts on the canal – although a higher freeboard when it's windy is handy to improve splash resistance.

Either top combination looks great, and they are both interesting boats for the audience at the park; this is an important brief at our pond, as the boats have quite a large following from both fellow model boaters and the public alike.

This is far and away the cheapest of the tops I have built so far, but we don't need to stop there, because...

To be continued!

Canal Boat dimensions

The deck sits inside the GP hull so is slightly less than the 600 by 120mm of that item, while the tops are about 80-ish mm tall as measured from the hull bulwark.

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With the wind from astern, Dolly's leeboards are about half and half here.

Hello, *Dolly*!

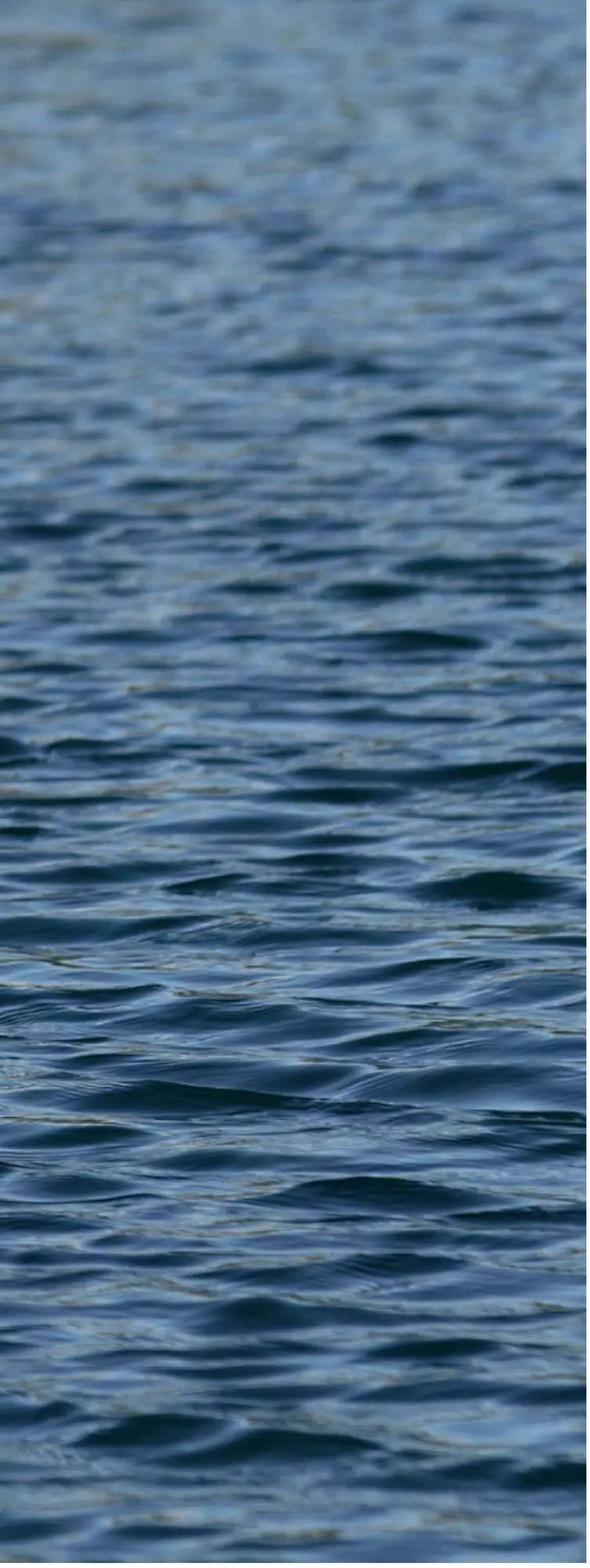
Nev Wade introduces us to another of his beautiful models…

While sailing one of my model boats in Sheffield back in 2006, I got chatting to a fellow enthusiast who had what he explained was a Dutch vessel out on the water. The model, which he'd named *Dolly Rocker*, appeared to be a cross between a traditional barge and a cabin cruiser (extensive research since has yet to turn up a real-life match). Finding myself quite taken with her, I asked this gentleman if I could borrow his boat, along with the frame drawings he happened to mention he had, so that I could make a few sketches from which to build my own version. He very kindly agreed but, for some inexplicable reason, the resulting copies were then simply filed away – for the next 17 years! Recently, however, I finally laid my hands on them again, so, gentlemen, with no further ado, may I finally present *Dolly*!

Getting my paperwork in order

I'll admit the project didn't get off to the best of starts. I thought I'd been very careful when while making copies of the drawings I'd borrowed all those years ago, but closer inspection revealed otherwise. My side elevation sketch looked fine, but when it came to my cross sections there appeared to be a number of discrepancies, and these took several sessions at the drawing board to adapt/alter/modify.

Eventually confident everything was as it should be on paper, however, I began by cutting out all the half cross sections, laying these against the side elevation in the appropriate places (just to double check the resulting



The inspiration for Nev's model, Dolly Rocker seen sailing with his yawl Bonny Lad in Sheffield back in 2006.

Nev's drawings, copied from the plans drawn up for Dolly Rockers back in 2006, along with his newly produced (2023) paper frames.

hull shape would be right) and then creating full-width paper cross sections from them. After that, they were transferred to wood.

The hull

I opted to use simple plywood from my local DIY shop for the frames and the kelson (the longitudinal piece which joins all the frames together). The cross sections were made up from single thickness ply, while double thickness ply was used for the kelson so this would mirror the thick stem and stern posts of the finished boat. With battens positioned in the appropriate places on a building board, I then began erecting the boat's frame. There were only nine cross sections, so it didn't take long to have the shape of the boat, upside down on the board, ready for planking.

Planking was approached with some trepidation, as the bluff ends of this boat meant there would be considerable curvature to contend with at both bow and stern.

"The bluff ends of this boat meant there would be considerable curvature to contend with at both bow and stern'

I had decided to use 8 x 2 mm lime wood strip for the bottom part of the model's hull, so I knew bending this, where necessary, in my usual manner (i.e. first heating it over a lighted candle), was going to prove difficult. Nevertheless, I got stuck in, accepting the odd splintered or broken strip along the way as par for the course.

Moving on to the top part of the hull, next to be addressed was the tumblehome. For those of you unfamiliar with the term, this refers to the inward slope of a hull's upper sides, and on Dolly this is extreme. I therefore removed her hull from the building board and turned it the right way round again, rather than trying to work on this section with it still inverted. The thin ply I'd purchased from a specialist model boat shop for this task was only 2 mm thick and way more pliable than the lime wood strip I'd used for the bottom of the hull,

Looking like a giant insect, the frames on the building board.

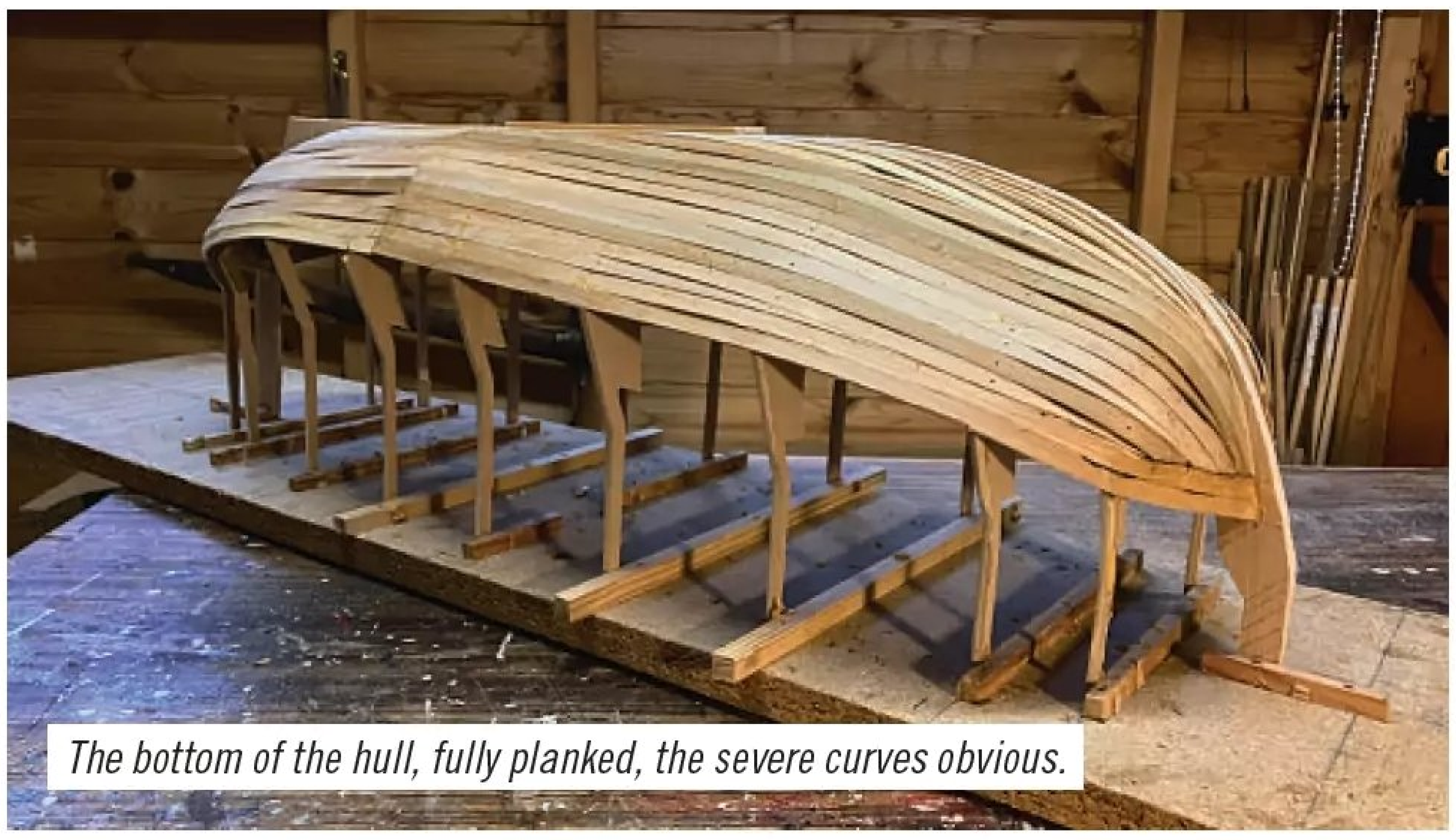
meaning, where curves, twists and turns dictated, small pieces could be easily shaped once slightly warmed over a flame. All the individual pieces needed to be firmly clamped to the frames while the glue dried, of course, but I got there in the end.

My next challenge was the rudder. This boat has two deck levels: the main deck – which lies behind small bulwarks at the fore end and along each side of the cabin), and a smaller deck (or cockpit) – which is located aft of the cabin at a lower level, from where the boat is steered and from which access is gained via the cabin door. As this cockpit sits behind much higher bulwarks, in a position low enough to preclude the installation of a conventional rudder beneath it, I was going to need a tiller to operate the rudder, which would be hung from the stern post of the boat.

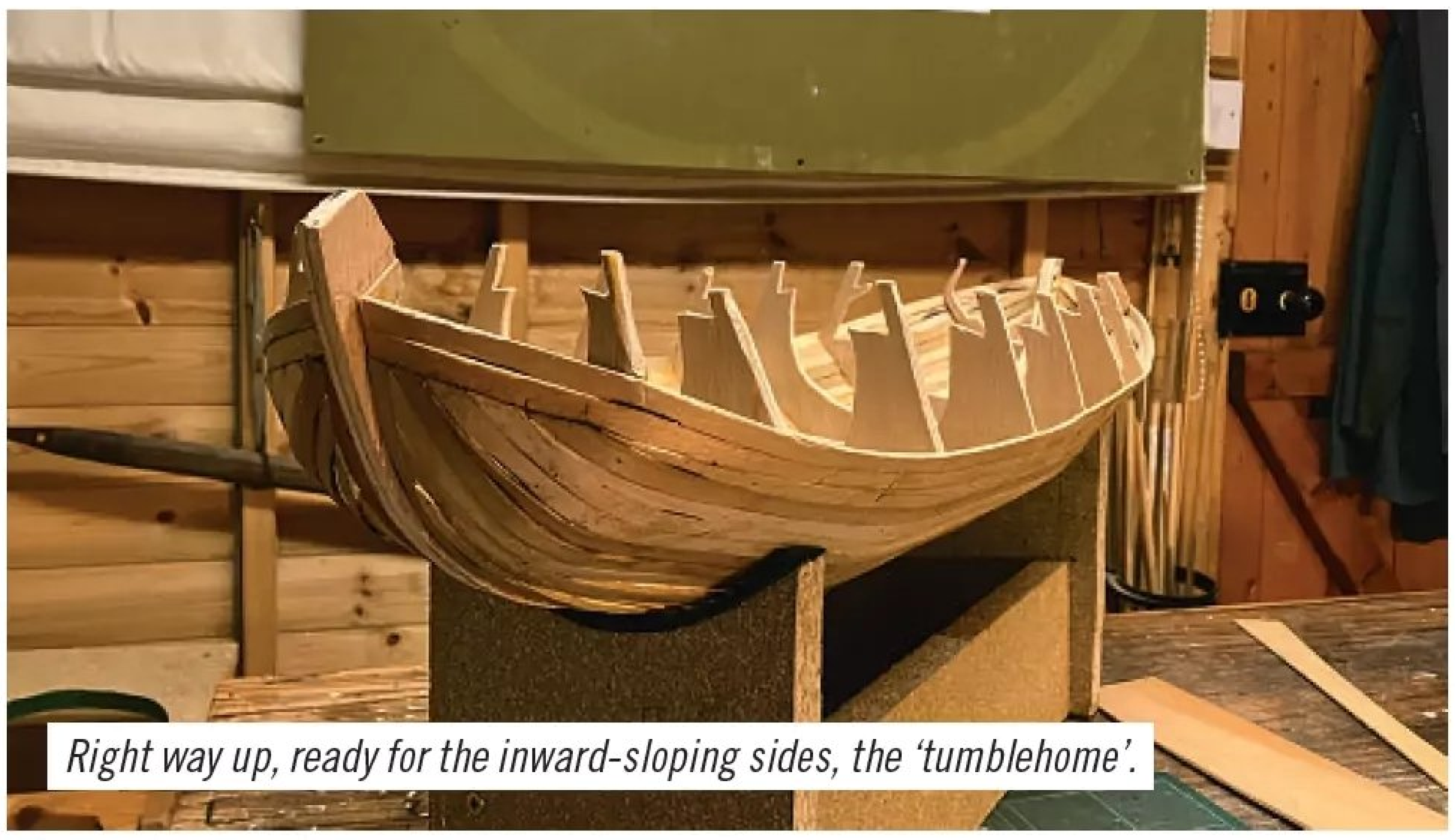
The rudder I made by sandwiching brass stiffening wire between pieces of ply, which was then cut to achieve the correct shape. Two recesses were cut into the fore part of this rudder so that each could house a brass pin set vertically, thus serving as hinges. Two horizontal holes were drilled into the stern post of the boat and, likewise, a brass pin glued into each of them. Flats were hammered into the outboard ends of these pins, with holes drilled then through them to accept the pins on the front of the rudder. By doing this, I was able to hang the rudder on the pins in the stern post of my boat. The tiller arm I carved was fixed to the top of the rudder using wooden pins; this tiller arm goes forward from the top of the rudder, over the stern and is accessible from the cockpit.

Next, I had to create the shape of an almost unique feature of Dutch sailing boats, the leeboard. A leeboard is a shaped, substantial, sheet of wood, pivoted at its forward end to each side of a hull. Its purpose is to act as a sailing keel on the leeward side of a shallow draft boat to help it 'grip' the water when trying to sail to windward. It is used in situations, common in shallow Dutch waters, where a deep, central, fixed sailing keel would be an embarrassment. The lee side leeboard is lowered into the water, while the one on the weather side is raised up out of the water. *Dolly Rocker* had two leeboards fashioned from aluminium, which I copied and then attached by pivots made from brass bolts to each side of the hull. The idea was that they would be mainly decorative on my boat, being held either in the 'up' position on hooks or in the lowered position by chains.

I then lined the hull with fibreglass tissue and painted it with resin



The bottom of the hull, fully planked, the severe curves obvious.



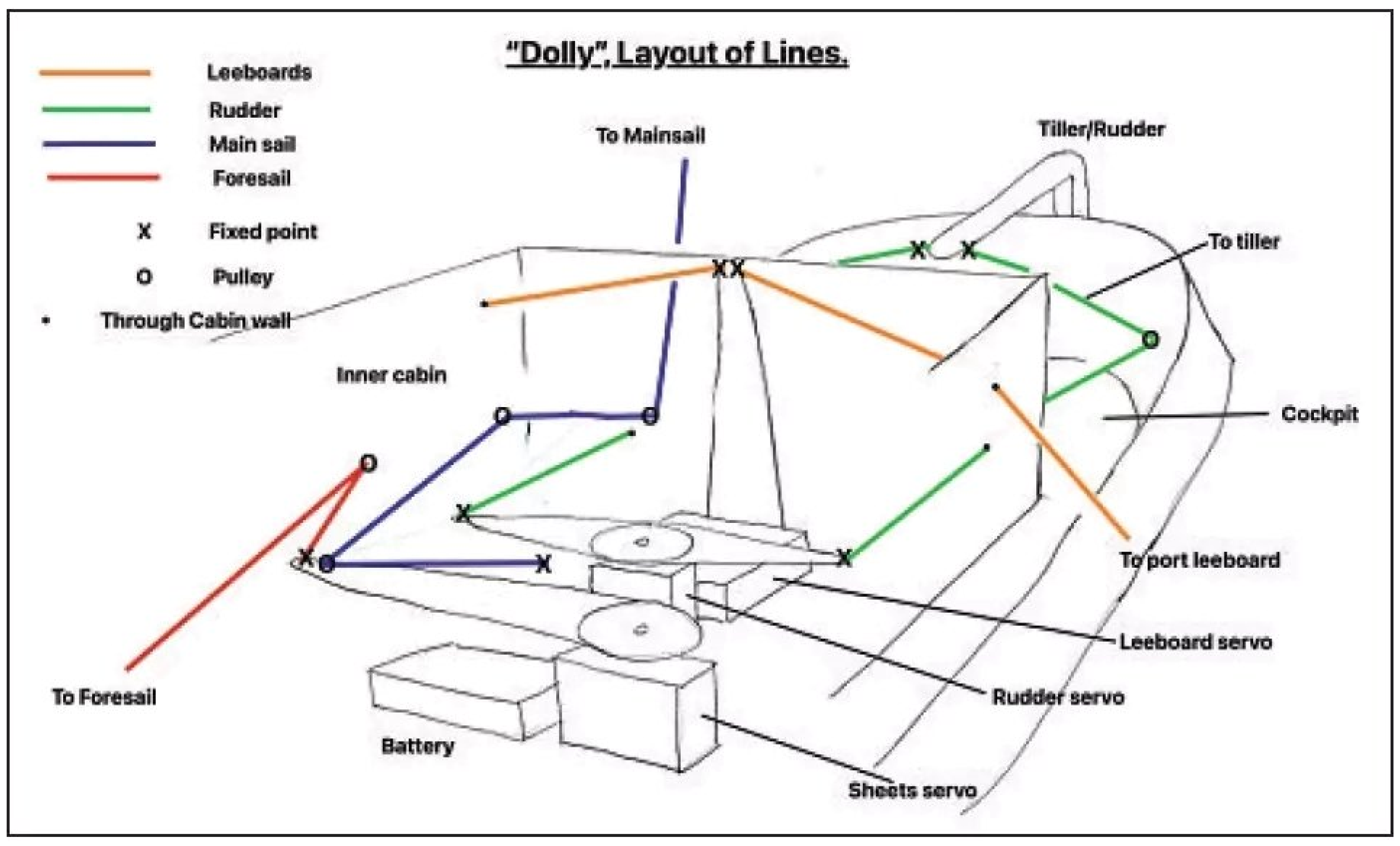
Right way up, ready for the inward-sloping sides, the 'tumblehome'.

Forcing the sides to glue to the frames.

The hull finished, and sheer line cut, with the rudder fitted.


The hull painted.


The hull lined with glass fibre tissue and resin applied. All the electrics have been loosely placed inside, along with the lee boards and lead, to assess how much lead will be required to make the boat float at the correct waterline.



Nev's sketch for the arrangement of the electrics and the run of the control lines.


Fitting the 'false decks', which will later be planked. The grey block by the mizzen mast is a piece of lead, glued in the bottom of the hull, to fine tune the trim.


The electrics installed in the hull. In the centre of the boat, from left to right, are the horizontally mounted sail arm servo for the lee boards, the vertically mounted normal servo for the tiller, and the vertically mounted sail arm servo for control of the sheets. The battery is fitted across the boat, next to the sheet sail arm, and the starboard side leeboard is hanging from its pivot.


The weight of lead, determined by the first float test, made into a sailing keel, to be attached to the underside of the hull by bolts.

for strength and for greater waterproofing. I also fitted the bottom of the hull with two 6 mm diameter bolts, to which I would later secure a sailing keel.

After filling and painting the outside of the hull it was ready for a waterline and waterproofing test, during which I loosely put in all the electrics, battery, *etc*, as well as enough lead to float it to the correct waterline. That same amount of lead was then made into the sailing keel mentioned above.

Systems mods

While pondering installation of the battery, servos and receiver, I casually mentioned the build to a fellow enthusiast at Tynemouth. He happens to be an experienced sailor of full-sized boats, with a knowledge

With most of the 'false decks' now in place, a start on the 'inner cabin' is made. The charging points can be seen sticking through the foredeck to port of the mainmast, and the receiver and on/off switch are hanging by their wires out of the cabin. The stern is to the right, the rudder not being shipped in this picture.

The shell of the 'outer cabin', awaiting its roof.

The 'false decks' and 'inner cabin' complete. Note the on/off switch to the cabin top. Around the decks decorator's caulk, the first stage in sealing the decks, is evident.

of Dutch vessels, and immediately wanted to discuss leeboards, asking if mine would go up and down. This well and truly put the cat among the pigeons, as I realised I'd be missing a trick if I didn't take the idea onboard. I ended up, therefore, having to design and fit a system that would operate rudder, sail sheets and leeboards.

Ahead of this, though, I first fitted both masts, which were made from simple dowel and set into blocks in the bottom of the boat. I also located the foremast by passing it through a 'thwart', which supports the foredeck and contains the foresail sheet's fairlead. With this done, I could see what I needed to avoid in terms of servo arm movement. Plus, the masts could also be used if any extra support was needed.

My boat has a foresail forward of the main mast, a main sail aft of it, and a small mizzen sail on the mast aft of the cabin. Due to the cockpit and the tiller arm, I wasn't sure I'd be able to arrange a sheet for the mizzen sail that would allow me to control letting it in and out. Instead, therefore, I decided to attach that sail to a fixed sheet, thus allowing it to react to the wind on its own, which left only the foresail and the main sail to control via a sail arm servo.

"This well and truly put the cat among the pigeons, as I realised I'd be missing a trick if I didn't take the idea onboard"

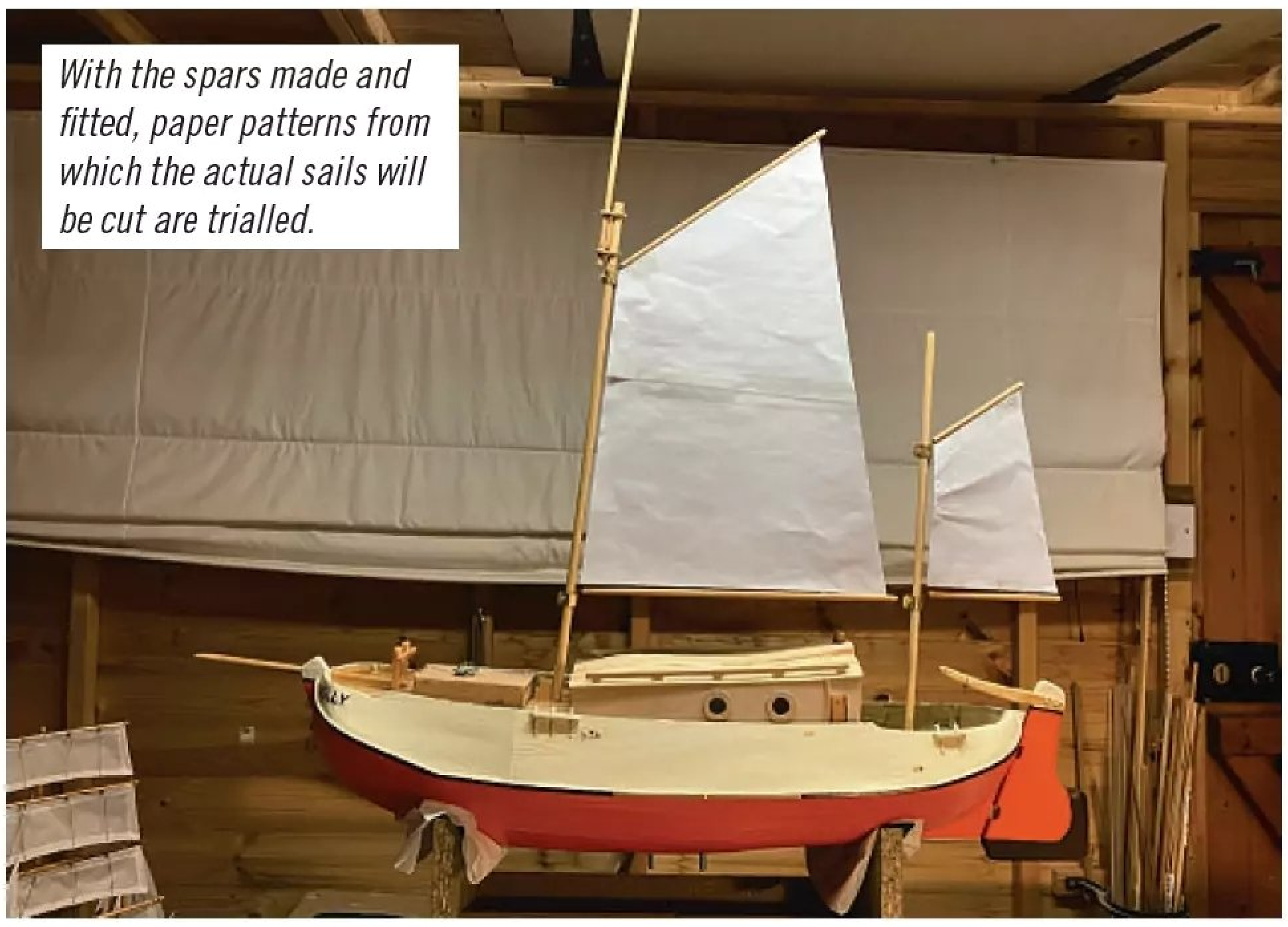
For rudder control I'd be using the tiller arm, so would have to devise a system of lines, operated by a normal servo, that would pull the tiller from side to side. I also needed to engineer a system that would lift the leeboard on one side of the boat while at the same time lowering the one on the opposite side.

The first priority was the leeboards. These would need to be lifted/lowered from above over the gunwales of the boat on each side. This meant having the pull from the sail arm come from a point higher than the top of the hull sides, and in turn having the arc of the sail arm high up within the boat's cabin. So, I mounted the sail arm servo body horizontally, ensuring its long arm up above had the capability of moving in an arc (port to starboard and back). I attached two lines made from fishermen's 'braid' (*i.e.*, thin nylon line, which is very strong, runs well and doesn't stretch), one on each side, to run over the gunwales and lift one side, while the other counter-balanced it. These lines would be run through the sides of the cabin, once it had been built.

Tackling the operation of the rudder came next. The lines for this would have to run out of the after end of the cabin to the pulleys (made from ring screws) positioned either side of the stern of the cockpit, and then go round them en route to either side of the tiller arm. I therefore fitted their normal servo with a centrally mounted extended arm and installed it immediately forward of the sail arm for the leeboards. This servo was set at a level that would allow the lines unrestricted access to the after end of the cabin and be level with the pulleys in the cockpit.

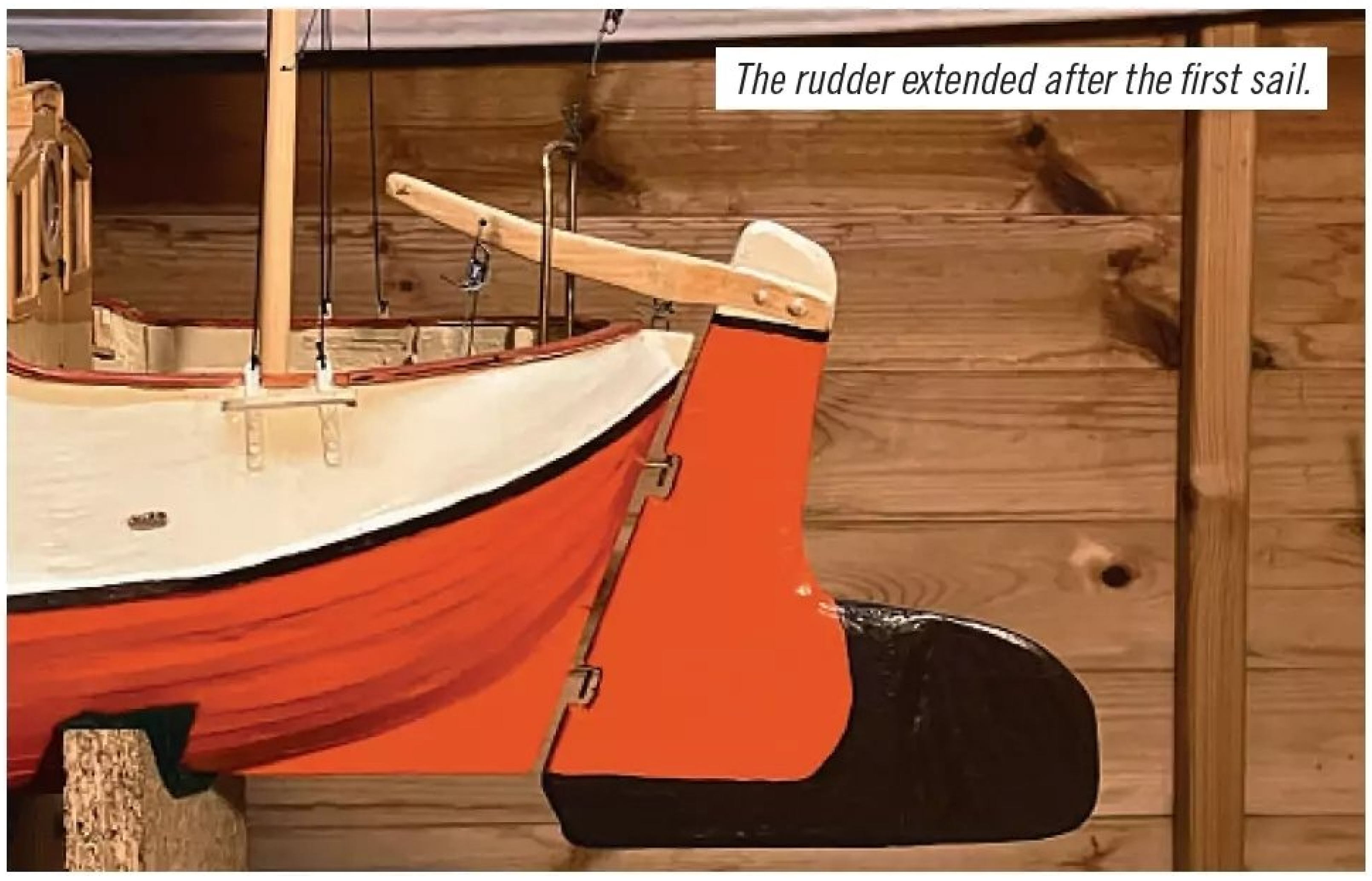
That left the sail arm servo for the sheets. I fitted this vertically on the port side of the hull, with its long arm going across the boat so that it could be attached to the sheets for fore and main sails at the starboard side. Clockwise rotation would let out the sheets and anticlockwise rotation would pull them in. I wanted the larger main sail to be let out more, with the same servo movement, than the smaller foresail, so the arrangement was as follows… Both sheets operate from near the end of the servo arm.

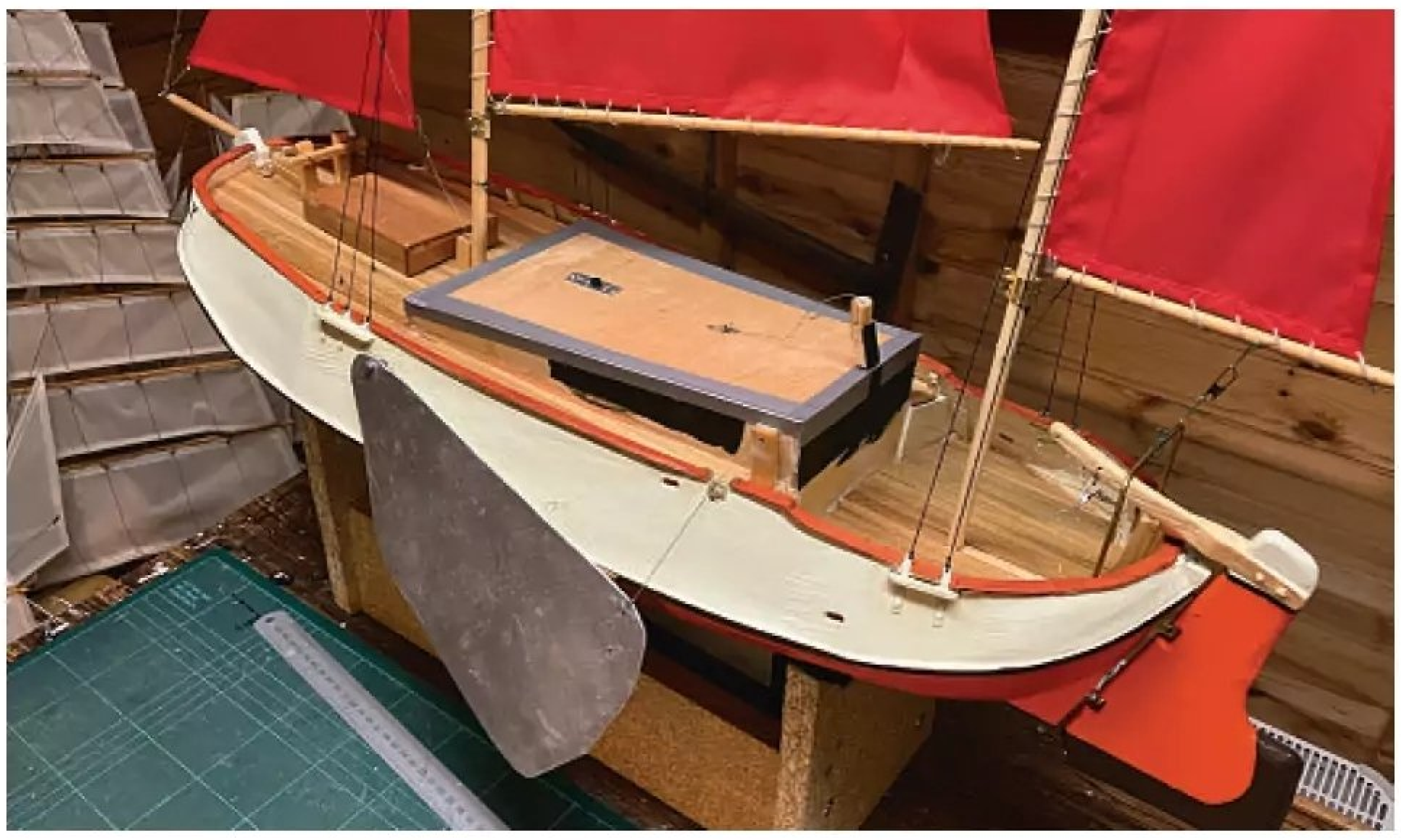

The 'outer cabin' trial fitted.


With the spars made and fitted, paper patterns from which the actual sails will be cut are trialled.


The sails bent to the masts and spars, and the lee boards fitted to their pivots. The lee boards, the tiller and the sheets are now all connected to their servos and the lines have been adjusted so that everything operates in the correct manner.

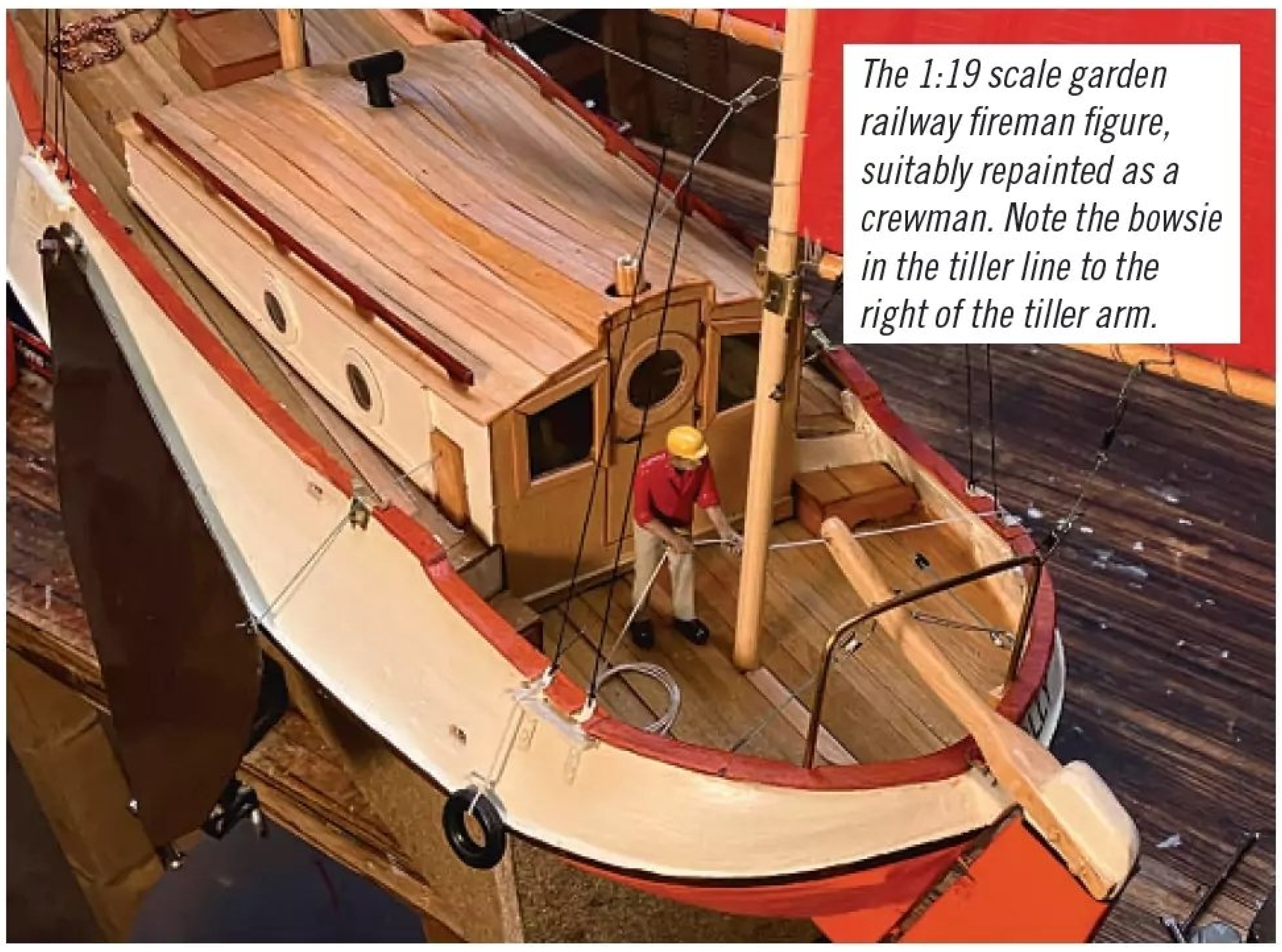

The sailing keel attached.

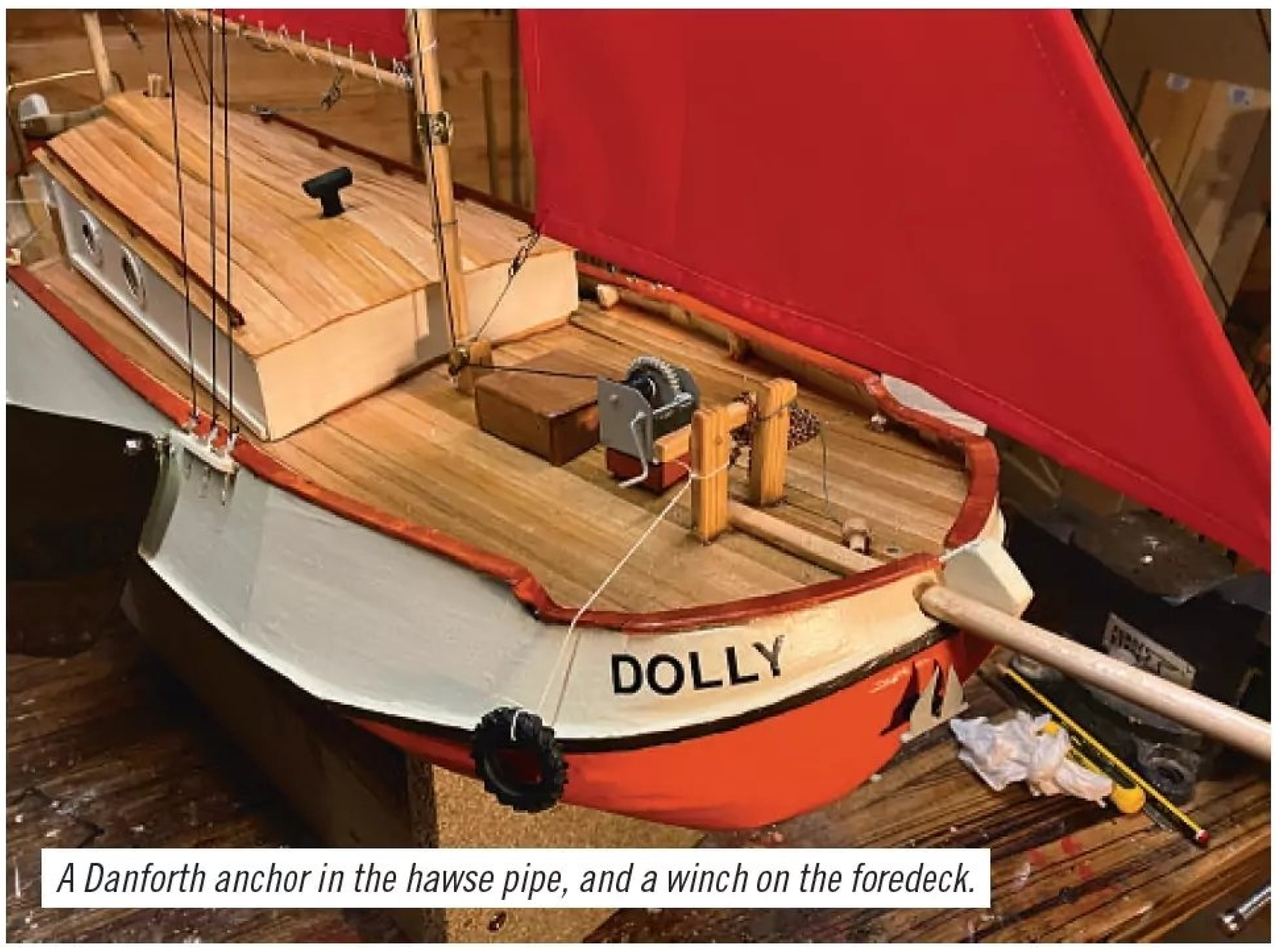

The rudder extended after the first sail.


The standing rigging fitted to support the masts, and the 'inner cabin' taped up to keep out the water. The long 'fairlead', through which the main sheet runs, can be seen sticking out of the after end of the top of the 'inner cabin'. This will eventually be fed through the top of the 'outer cabin'.

The foresheet is attached to this and runs aft to a pulley, made from a screw eye, screwed into a hull frame. From there, it runs forward to a fairlead, which takes it through the deck just forward of the mainmast, and thus to the foresail. The main sheet has a multiplying pulley system, in that it's attached to a hull frame aft of the servo. From its attachment point it runs forward to the end of the sail arm, where it goes through a pulley made from a fishermen's 'swivel', or snap link. It then runs aft through a series of pulleys (again, made from screw eyes) screwed into hull frames, leading it around the starboard side of the hull and up the after wall of the cabin (which, at the time of coming up with this arrangement was still yet built), just aft of the leeboard sail arm. Lastly, it goes up through a fairlead in the cabin roof and out to the main sail boom.

> ***"Basically, a 'multiplying pulley system' is operated like this…"***


The 1:19 scale garden railway fireman figure, suitably repainted as a crewman. Note the bowsie in the tiller line to the right of the tiller arm.



A Danforth anchor in the hawse pipe, and a winch on the foredeck.


The finished boat, ready for her maiden sail.


Sailing at Tynemouth, starboard tack, with port leeboard down. Dolly can make progress to windward, 'hands off', like this.

Basically, a 'multiplying pulley system' is operated like this… If a line is attached to the end of a lever, like a servo arm, it is pulled back and forth by the same distance as that moved by the attachment point. If you attach the line to a point on the same side of the lever as it will eventually go to operate its function and send the line through a pulley on the lever, then as the lever moves back and forth the line will move the same distance as the lever does, plus some of the distance that the pulley on the lever travels.

With these crucial items installed, I fitted battery, receiver, on/off switch and charging points to suit. I don't like to 'go below' on my models unless absolutely necessary, so later I fitted charging points though the foredeck, with the switch set into the roof of the 'inner cabin' (more on this later).

The decks and inner cabin

Two considerably different deck levels and a large, prominent cabin spanning the two saw me sketching various layout ideas on bits of paper. I wanted to have an 'inner' cabin that (along with all the decks) was watertight, and over which a more decorative 'outer' cabin could be snugly fitted.

Still without a definite plan at this point, I made a start, beginning with the most obvious bit, the foredeck. Working with thin ply (approx. 0.5 mm) I built 'false decks' (which would later be planked) around the sides of a large 'hatch' that would afford good access to the electrics below, and which would later serve as the cabin. These decks extended aft to the forward end of the cockpit. I then strengthened the sides and the fore part of the hatch opening using 7mm square dowel in such a way that I could then glue hatch coamings, made from 2mm ply, to it on three sides.

How to 'step down' from foredeck to cockpit when creating the fourth side of the 'hatch' was the next consideration, but with three sides now already done, this looked to be a simpler proposition. I cut a piece of 2mm ply in such a way that it made an aft coaming that went right down below the level of the cockpit deck and glued it to a hull frame. In effect, this was the aft wall of the cabin. The top of this aft coaming was high enough to accommodate the height of the leeboard sail arm, and the side coamings mated up with this and then tapered down to the forward end, where they were about 20 mm above deck level. The last bit of this phase was to cut out, by trial and error, a false deck for the awkwardly shaped cockpit, and then fit it. All this left an opening at each side of the aft coaming, which I duly filled in with 2mm thick ply.

This seemed the ideal moment to start waterproofing the decks. I applied decorators' caulk to all the horizontal to vertical joints, between bulwarks and deck, coamings and deck, *etc*, until all openings to the underside of the deck, except the hatch opening, were sealed.

I also wired two brass pins to the charging side of my on/off switch. These were inserted to a small block of dowel, which I glued to the underside of the foredeck in such way that the pins stuck up through it to the port side of the main mast. These would be my charging points.

I then used 8 x 2 mm lime wood strip to plank the decks, painting resin around all the edges before finally varnishing them to ensure a good watertight seal everywhere.

Following this, the bowsprit was fitted. To the inside of the hatch coamings I glued some 4 x 2 mm lime wood strip to act as sills, into which I set a removable hatch cover, thereby affording access below as and when required. The on/off switch was fitted into this.

As mentioned earlier, the leeboard lines needed to come out of the 'cabin' at such a height that they will raise and lower the leeboards. To this end, I fitted brass tubes into small blocks of wood and glued them to the coamings at each side, just above where the lines would be attached to the leeboards. The leeboard lines thus come through the cabin walls here, en route to the leeboards. Also, the lines for the tiller needed to go through the aft wall of the cabin affording them a clear run to the pulleys they need to travel around on the way to the tiller arm. So, I drilled two holes through the panels at each side of the aft wall of the cabin to run these lines through. Mindful of the fact that there *will* be water ingress during sailing, these holes were kept as small as possible to minimise leakage.

Sun on the sails.

The fireman takes in his new life!

The outer cabin

Elegantly shaped cabins seem to be a feature of Dutch vessels, so I felt it important to do my best with the outer cabin (the inner one won't be visible). The crux of the problem here was that this outer cabin would need to be a very close fit around the inner one. So, to that end, I very carefully measured the dimensions of the inner cabin and then cut a piece of plywood to those sizes. I then cut some 2mm ply to the correct sizes for a front, two sides and a rear cabin wall. The sides were tapered, front to rear, and the rear wall was cut to be the aft wall of the cabin, with apertures for windows cut into it. All four pieces were then glued together, around the piece of plywood that I had first cut. After drying, I tried this fragile four-sided construction over the inner cabin and was relieved to find that it fitted well. Next came the roof.

The roof appears arched when viewed from the front, and has a pronounced dip to it, fore and aft, when viewed from the side. It also has a raised section at the after end where it covers the top of the door. Including the aft wall and the fore wall, I glued six frames across the top of the cabin. All six were different in shape to give direction to the 8 x 2 mm lime wood strip that I used to make the roof. This went on reasonably easily, giving a nice line to the roof. To complete the job, I made window and port hole frames and cut clear plastic for the windowpanes, as well as marking out a cabin door, complete with hinges and a handle. At the sides, where the blocks housing the fairleads for the leeboards are located on the inner cabin, I made cut-outs to pass around the blocks and allow the outer cabin to slot easily over the inner one.

I made two holes in the roof, one at the after end to allow the fairlead for the main sheet to pass through, and one above the on/off switch so that this switch can be operated with a penknife without having to remove the outer cabin. This forward hole is filled with a dummy stove chimney stack when not in use.

Once I'd painted and varnished where appropriate, I at last had myself a complete and, I felt, suitably 'Dutch-looking' hull and decorative cabin.

Aloft

Before fitting the 'engines', *i.e.,* the sails, I first fitted an upper mast to my mainmast. On real Dutch boats, the whole mast is often capable of being lowered, presumably to pass under bridges. However, wanting to keep this model practical to sail, with no

A nice breeze. The port leeboard is up here.

complications, I merely added the topmast using the method I would for a sailing ship, via mast doublings.

With all the masts complete, I cut the four spars, two booms and two gaffs. Again, I simplified here, making both masts gaff rigged for ruggedness and ease of use. The spars have brass rod glued into one end, with a right-angle bend for the booms and at a lesser angle for the gaffs (you will see the difference in angles in my photos). I made four mast bands from brass sheet which I clamped on with brass nuts and bolts, with brass tube glued between the masts and the bands on the after sides. I then pinned each band to its mast by drilling and fitting a brass wire through it.

The brass rods in the ends of the spars were then fitted into the tubes at each mast band, giving a sturdy pivot for each of the spars. As mentioned earlier, the mizzen sail has no sail control. Its sheet is attached to a 'horse' – a hoop of brass rod above the tiller arm. The sheet can move along the 'horse' as the wind pushes the sail, and it thus operates itself.

With all this top hamper in place, I cut pieces of paper to the required shape for the foresail, the mainsail and the mizzen sail, which are the main drivers for the boat. Additional to these are the flying jib (an extra, fine weather sail set between the bowsprit and the mainmast) and the main gaff upper topsail (a triangular sail set above the mainsail). The first three are fixed sails, while the other two are removable.

The actual sails were made from Ripstop Nylon, a kite and tent material – the paper ones simply having been used as patterns. The mainsail and mizzen sail are laced to their mast and spars, while the foresail is set on a 'stay' (a line that runs from bowsprit to mainmast). The flying jib is set in a similar manner to the foresail but is removable. The main gaff upper topsail is fastened to its spars using hooks on the sail; the 'goalposts' on the mast and spar into which they are inserted making sail removal a piece of cake.

"This equipment has a novel means of adjustment…"

Making it all work

At various times during the build I'd had lines attached to all the servos, and indeed some were still attached at this point. I like to have my lines easily detachable at both ends, with some means of length adjustment permanently available along them. I usually use 'swivels' for attachment, as these are snap links that can be quickly unhooked when required. I also fit bowsies in lines to permit length adjustment. So, on this model I fitted swivels at the ends of the sheets and lines for the tiller arm. For the leeboards, where space and interference were issues, I just tied the lines on. I put a bowsie along the mainsail boom to facilitate adjustment. I chose not to fit a bowsie to the foresail but did manage to squeeze one in on both the port and starboard tiller lines within the cockpit area.

Fishermen's braid' is great for lines. It doesn't stretch, so you can tie it off without fear of tension easing and feel safe in the knowledge that the movements it controls will remain predictably accurate. In time, however, it can shrink somewhat; this, therefore, makes bowsies especially essential for a rudder, as you don't want your servo to be put under any undue strain should this happen. Tying off must be done as accurately as possible and I wish I could introduce you to some infallible method of tying of knots in all the right places, but I can't. I just use superglue, at the right moment.

With the radio control sticks and the servos set in the appropriate places (rudder and leeboard control central, sheets slightly 'out' from fully 'in') connecting up could start. The sheets were run from the sail arm servo swivels through their pulleys and fairleads to be fastened to the corner of the foresail and the mainsail boom, also by the use of swivels. The steering lines were run into the cabin from the cockpit and fastened to the steering servo swivels. The other ends were run, via the pulleys, to the tiller arm, where they were run though their swivels and back to the bowsies within the cockpit. Lastly, the lines for the leeboards were tied to the end of their sail arm, run through their fairleads in the sides of the cabin and tied directly to the tops of the leeboards over the sides of the boat. Superglue was used wherever it was necessary.

At this point, everything worked, but there was way too much movement possible at every servo. Going from fully port to fully starboard on the leeboard control, for example, had the leeboard sail arm banging on the cabin sides, with the servo straining against the obstruction. What was needed was


Great fun!

EPA (End Point Adjustment), and fortunately this was a feature that available on the radio combo I'd chosen to use. This equipment, made by Radiolink, has a novel means of adjustment: by downloading an app to your smart 'phone you can link your phone to the transmitter and then, using the screens provided, adjust EPA on any channel. I know it sounds like overkill and it probably is, but it does work (well so far, anyway). With this done, the sticks control can be used for the movements required with no straining of the servos.

Control

The three channels that I use are: L/R on the RH stick for the rudder, with spring-loaded centralisation; L/R on the LH stick for the leeboards, with the spring-loading removed; and up/down on the LH stick for out/in sail control via a ratchet on the stick. The rudder is obvious. The leeboards are set with the port one down with the stick to the left, and vice versa. The stick remains where it's put and can be forgotten about while sailing until you change tack. On the starboard tack, you sail with the port leeboard down; when you change to port tack, over goes the stick and the starboard leeboard goes down. For the sheets it is the familiar up for 'out', and down, to pull 'in' the sails. It's as simple as that.

Preparing to set sail

With all the above done, it was time to fit my sailing keel. I had used the amount of lead determined by my first flotation test to build this from a piece of aluminium sheet with the lead I'd cut into strips fastened to it. This device I now attached to the bottom of the boat, in a position determined by an earlier water test, using the 6mm diameter bolts mentioned earlier. The idea of this keel is to float the boat to the correct waterline, to stabilise it against the wind, and to help it 'grip' the water to enable progress to windward. The last job before sailing was to stick gaffer tape around the top of the inner cabin and the cabin top to fully seal them against water ingress, and then to put the outer cabin on as a tight fit. The main sheet has to be detached from the boom, pushed through the hole in the roof of the outer cabin, and then re-attached at the boom to facilitate this.

So, how does *Dolly* perform?

Due to her hull shape, my biggest concern was that *Dolly* wouldn't make progress to windward, meaning all I'd achieve on the pond would be a quick journey to the leeward end of the water available. I was also anxious about her ability to tack.

"Dolly's central sailing keel and broad beam make her able to withstand more wind and waves than my other small yachts, so she's more versatile in terms of the conditions in which she can be sailed"

In practice, she behaves somewhat as expected. She will not sail very close to the wind but *will* make progress to windward, although admittedly I do have to concentrate and keep on top of this. Tacking is successful about 60% of the time. I oversized my original rudder by about 40% to facilitate good positive turns, but found I needed to increase the size of her rudder yet further. As doing so improved things a little, this convinced me to go ahead and fit a Danforth anchor, a winch and a crewman, all of which have added a touch more realism. The crewman can be forgiven for looking a little apprehensive, as being a 1:19 scale garden railwayman he's way out of his comfort zone!

On a positive note, *Dolly*'s central sailing keel and broad beam make her able to withstand more wind and waves than my other small yachts, so she's more versatile in terms of the conditions in which she can be sailed.

She does have some interesting little peculiarities, too. After you have her up close to the wind she can sometimes, on her own initiative, suddenly accelerate, as if there was a motor involved, and point a little higher up to the wind, enabling really good progress to windward. She draws very little water, only about 50mm of the hull being submerged, and that only in the centre, so that she can 'skid' across the surface to some extent. The fear of 'skidding' to leeward was my reason for fitting a sailing keel, and its presence does lets her 'hold' the water, but, aided by this, she can also sometimes 'skid' forward, and maybe that's the reason she unexpectedly accelerates when close to the wind. I've also discovered that she will tack a bit more readily if I let out the sails a little at the crucial moment. Presumably, letting out the foresail (jib) allows the bow to move toward the wind more easily.

To me, all *Dolly*'s little foibles simply add to her credentials as a 'character'. True, she will never win any yacht races, and you can only sail her if you pay full attention and watch for your opportunities, but her red sails and cheerful hull always seem to make people smile. ●

Tech spec

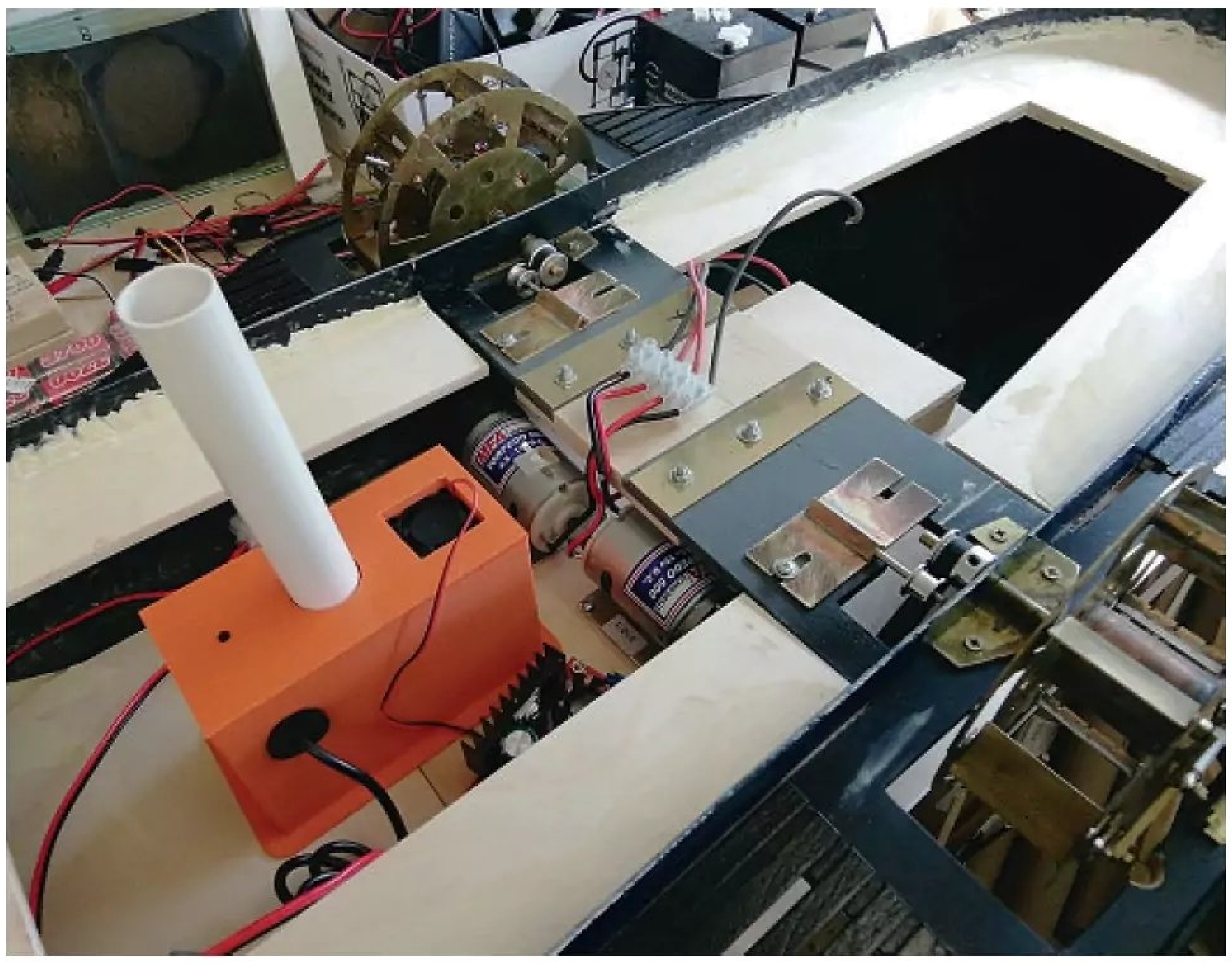
Battery:	7.2V, 2000mAH (6 x AA cells).
Servos, rudder:	Futaba S3003
Sails & leeboards:	HiTec HS765HB
Radio:	Radiolink, Tx, T8FB, 8-channel, 2.4GHz, Rx, R8EF.
Dimensions:	
Length (bowsprit end to rudder top):	820mm
Beam (excl. leeboards):	260mm
Height (deck to main truck):	710mm

It don't mean a thing, if you ain't got that swing!

John Mileson puts the "doo-ah, doo-ah, doo-ah…" into building a Norfolk wherry…

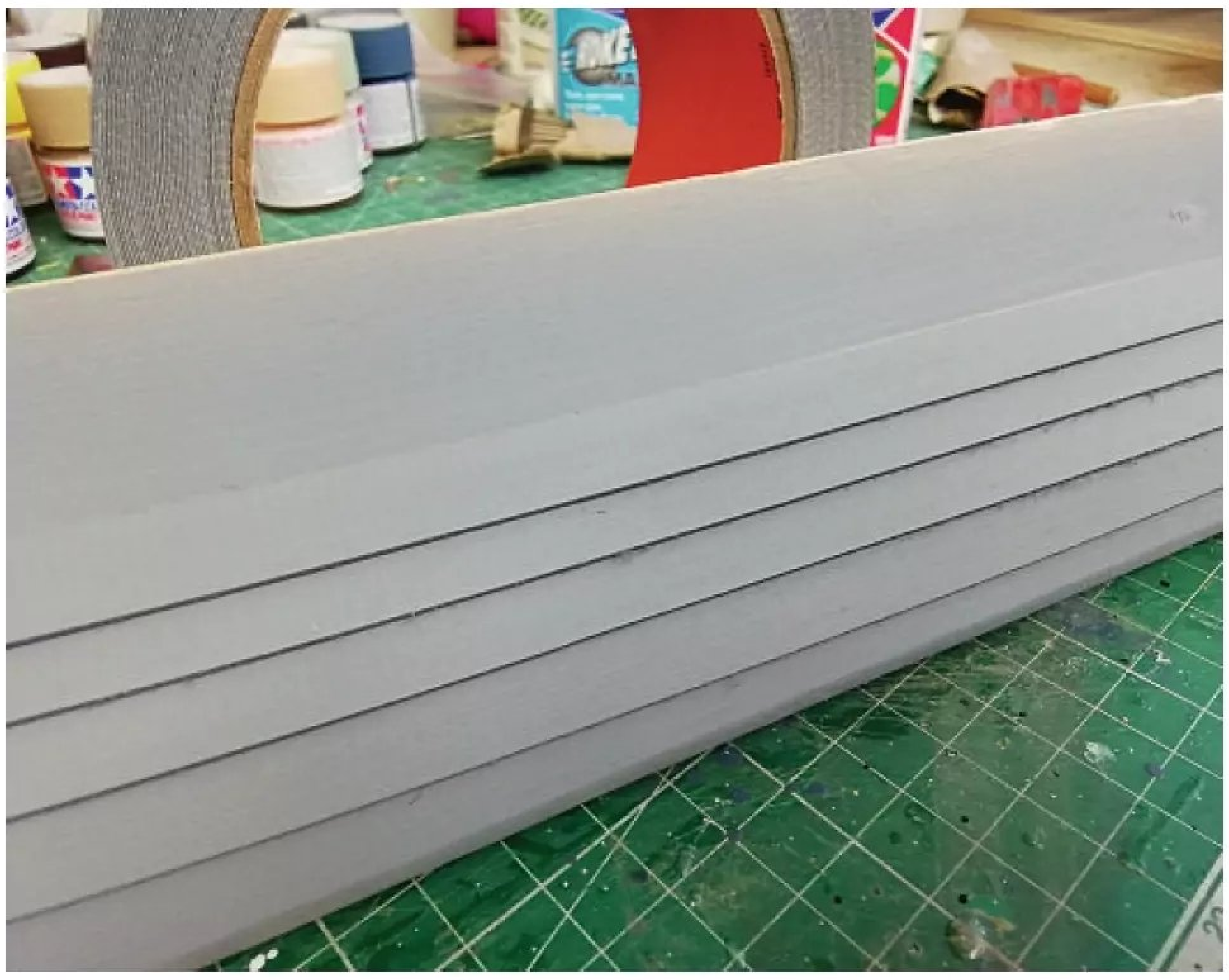
Disaster recently struck. For three weeks I had dedicated my every spare moment to building a model of the *Reliant* paddle tugboat. Progress had been fairly rapid, as can be seen from my photographs. The paddle wheels had been made from sheet brass, bits of domestic plumbing, odds and ends, and even model railway handrail knobs. On the test rig, they'd performed beautifully, with the paddle boards feathering at just the right time. So, once I'd installed them in the hull, the electronics controlling the independent paddle wheels were sorted out and I was ready to put the boat in the bath to test their efficiency. Up until this point I'd been feeling very confident, but while the boat sat well in the water and the paddle wheels turned, the boat itself didn't move. Aha, I thought, easily remedied. So, it was back to the shed, where some larger paddle boards were knocked up and stuck to the original brass wheels. Further bathtub trials with these, however, saw absolutely no improvement. I then spent a considerable amount of time reviewing things but just couldn't come up with a solution. So, I chose the only option available to me, and that was to scrap the whole project.

Reluctantly, then, I began to dismantle the model. There were bits that came off easily, but no sooner had I taken a hammer and chisel to the sponsons and applied a bit of brute force and some rather colourful language, my wife appeared at the shed door. If I didn't know better (and I do because, actually, I've checked) I'd swear she has surveillance cameras fitted in my little sanctuary. Even with some very fancy footwork, I knew I was going to be hard pushed to justify why I was smashing up such a 'lovely boat' (not that I believe she thinks any of my boats are that lovely, but, in her eyes, they all represent money, and money that could've better spent elsewhere). Giving it my best shot, though, I explained that I was merely attempting to recycle a severely damaged hull


The paddle steamer nears completion. Only testing in the bath remains to be carried out.


Following the disastrous test in the bath, the whole idea of building a paddle tug was scrapped. The result? A pile of debris!


All that remained of the original project: the fibreglass hull having been sanded down to remove traces of the original riveting.


At Les' suggestion, John began experimenting with tape to represent a clinker-built hull effect. This was his sample piece made to test the theory.

and that, if she so wished, I could turn it into a lovely garden planter for her. Apparently, no, she did not 'so wish'!

Out of the frying pan, into the fire…

As luck would have it, the following day my chum Les, who normally gets me into trouble, this time got me out of it, by coming up with the idea that the damaged hull could be transformed into a Norfolk wherry. All this would take would be a bit of hacking about, a bucket of filler and the job would be a good'un, he assured me over the phone.

I wasn't entirely convinced, but I was desperate, so I stayed stum and let him continue. He went on to point out that he'd always been interested in building a wherry himself, so would be happy to join me and build one in tandem. "*I just happen to have a set of plans, so I'll pop over in about an hour*", he enthused. That was that, then, whether I liked it or not!

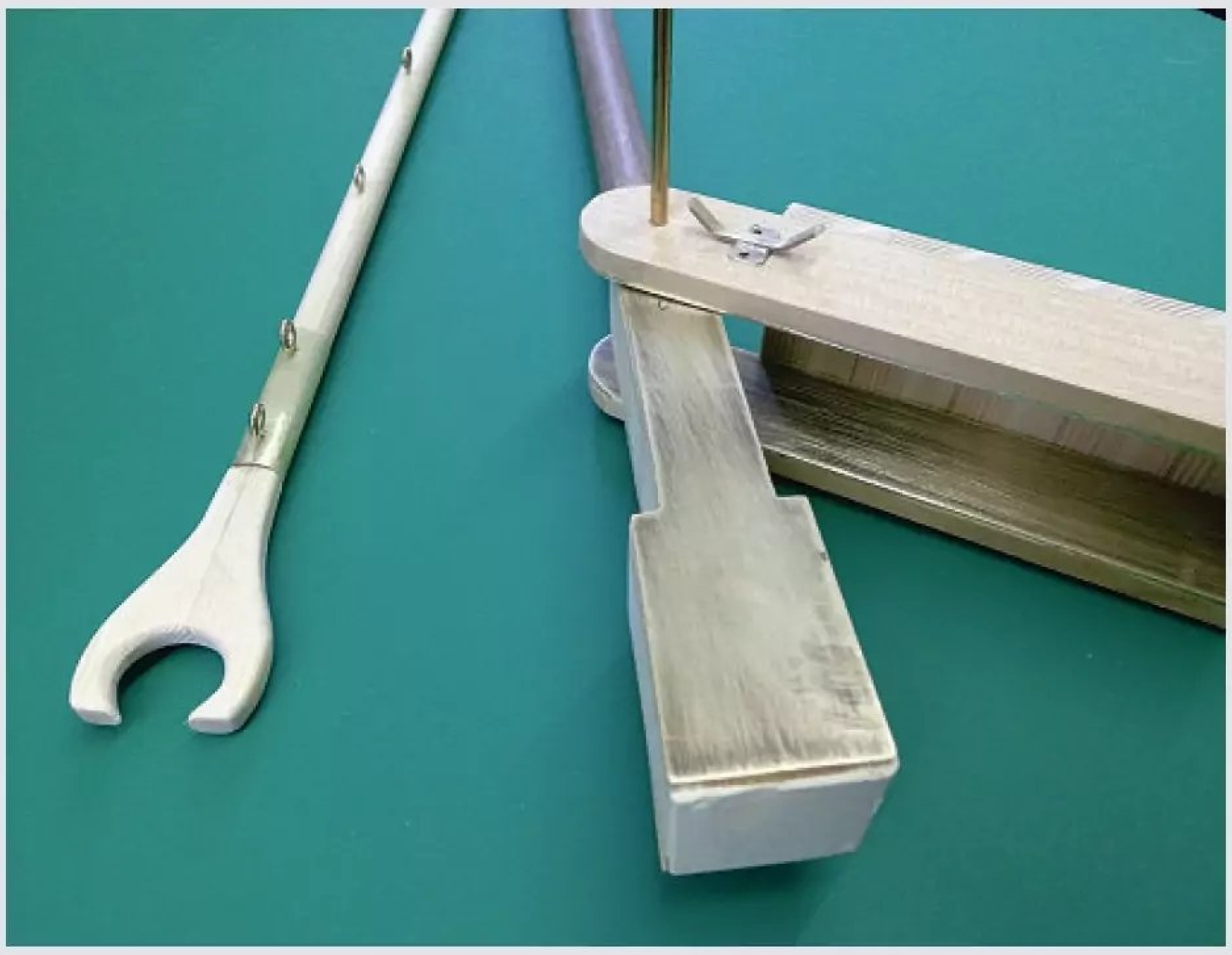
Capturing that clinker-built hull effect

It wasn't long before Les had purchased a fibreglass hull that resembled (well, remotely resembled) that of a wherry, while I continued with the challenge of turning my wreck into something more credible. Since most wherries were clinker built, it took a load of filler and an awful lot of sanding down to remove all evidence of the rivets from the hull. This in turn, however, raised the question of how I should go about trying to replicate an original clinker-built hull in miniature.

It was then Les suggested using gaffer tape to represent the timber boarding. While not an original idea, it was certainly new to me. So, I think it's worth detailing the process here, just in case you haven't tried it.


The hull with its replacement plywood deck in situ. Below it can be seen the original deck from the ill-fated paddle tug.

> *"I think it's worth detailing the process here, just in case you haven't tried it…"*



One of the most important features of a Norfolk wherry was the 'fold down' mast. In order to make this operation easier for the crew, the mast was fitted with a large counterbalance weight. Here we see the trunnion and gaff pole John made to represent this unusual feature on his model.

The 'well' the balance weight on the bottom of the mast passes through when the mast is lowered.

Layers (I used three, but two would be enough) of reasonable quality gaffer tape need to be stuck down onto a sheet of glass. The upper surface needs to be roughed up a bit with sandpaper to give additional keying for the future paint. Next, using a straight edge and sharp craft knife, the tape must cut through to give strips of the appropriate width for your model planking. Then, peeling all layers of the tape from the glass, your first strip can be laid onto the hull in the appropriate position, starting with the lowest plank. Each subsequent strip of tape must overlap the one applied before it.

My clinker hull was built up in this manner, and, once primed and top coated with paint, I have to say it looked very effective.

Losing Les to the sewing circle

Our telephone conversations then turned to the making of the sails. Les claimed he was a dab hand with a sewing machine. This worried me a little, as I reckoned I could just as easily end up trying to rock a new frock (and I do try, even if very unsuccessfully, to wear the trousers in my house)! But I buttoned it, and Les proceeded to order a simple sewing machine from the internet, soon proving himself surprisingly proficient.

Perhaps then otherwise engaged in his new role as a seamstress, after this started to fall behind with his own wherry project. I was, therefore, left to alone venture ahead alone.

"This worried me a little, as I reckoned I could just as easily end up trying to rock a new frock (and I do try, even if very unsuccessfully, to wear the trousers in my house)! But I buttoned it"

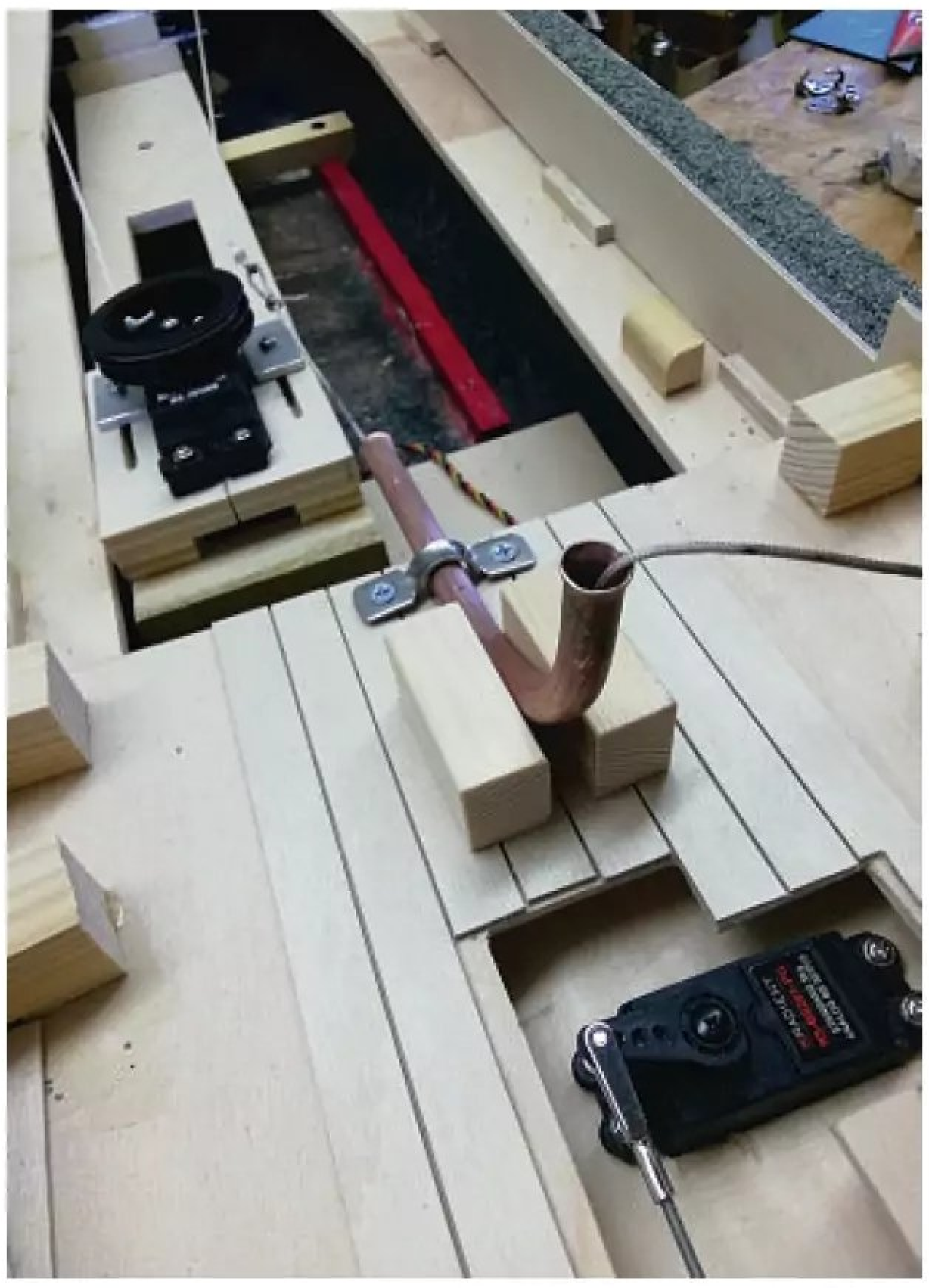
Onwards!

So, I cut my plywood deck to shape, but, before it could be fitted, came

The main hold of the wherry is covered by a series of portable hatches. The arched base onto which the hatches were to be glued was applied in strips to try and avoid any distortion.

The finished hatch covers in place. On the full-sized vessels, it must have been a daunting task to remove all these covers when loading /unloading the cargo.

While in the past John has found the simplest and easiest method for sail control was to install a servo with a 4-inch-long arm, here he tried out another idea. So, once he'd made mock-up servo and winch drum assembly, he spent a considerable amount of time 'messing about' (his words) trying to get this to work. Eventually, it did, although he's not sure whether this was more by luck than by judgement!



The winch sail control was installed to one side in the boat. This allowed the line pulling the sail in and out to be on centre line. The line was fed through a short length of old copper tube, bent so the outlet was vertical and would protrude through the aft cabin roof.

The aluminium 'U' section channel had been fitted earlier on in the project, allowing a thick black plastic keel to be slotted into this and held in place with some split pins, which being removable means the keel remains easily detachable for transportation purposes.

To the bottom of the keel John bolted pieces of roofing lead, before wrapping further small pieces around it, which could easily be added to or removed during on water ballasting tests.

to the realisation that the mast, which sits way forward on the foredeck, would need to be made first – the reason being that this folds down via a trunnion on the foredeck and lays along the length of the craft.

I don›t have a lathe, so turning up a mast can be a problem for me. I usually resort to the electric drill. Holding a length of dowel in the chuck, the mast form is gradually generated using sandpaper held in my free hand. A word or two of warning, here… The sandpaper can get very hot, so gloves need to be worn. Also, never wrap the sandpaper around the dowel as it has a tendency to snatch. And be aware that a piece of dowel that's probably over 2ft in length has, even at low revs per minute, the knack of flailing about. Having put you off that method, time to move on…

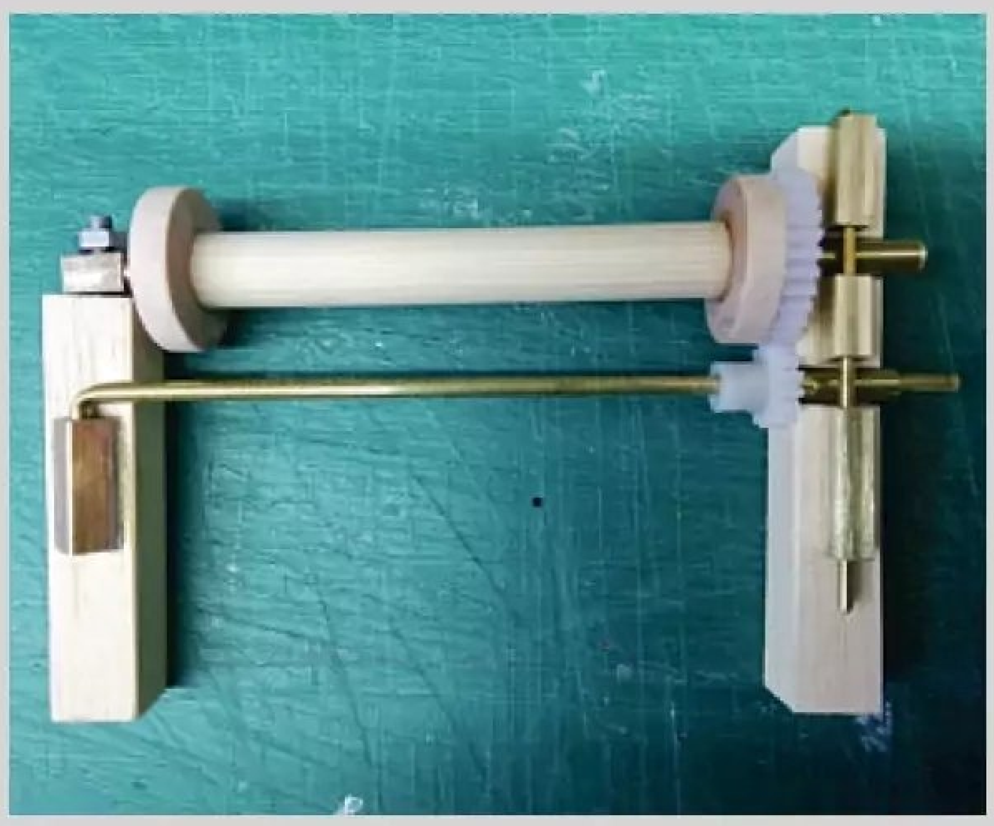
"Having put you off that method, time to move on…"

The trunnion and side cheeks were made from wood and brass sheet; the brass components adding stability to the assembly. This assembly would, after all, be taking a lot of the stress when under sail.

The deck was then cut out to suit the swinging mast assembly.

This was bonded into the hull, with much care put into getting the mast upright. The base of the tabernacle was extended down into the hull and bonded to the fibreglass.

Around the top of the fibreglass hull, in the place of conventional bulwarks, a strip of plywood was cut to shape and bonded to the hull and deck planking. According to one book on the subject this appears to be called a ‹planksheer›.



The masts on the prototype were lowered to allow them these vessels to pass through bridges, which was relatively easy due to them being counterbalanced. To allow this to take place, the winch located on the bow of the wherry had to be swung clear of the mast weight. To facilitate this on the model, a rather ingenious winch was designed. The main drum and winding mechanism were hinged to allow them to swing out of the way. Here you can see the hinges on the left post, and the winding mechanism secured by a bolt on the right post.

The finished winch located on the bow in the closed position. This winch is used for hauling the mainsail up.

With the hatch cover removed, the winch operating drum and gearing are swung out of the way, and the counterbalanced mast is allowed to swing down.

The view from the stern. The outlet for the rope from the servo drum to the mainsail can be seen in the centre of the cabin/hold roof.

The next task was making up the hold cover. With all the hatch covers removed, the wherry would be an open boat, with narrow side decks. The cambered hatch covers rest on a series of removable vertical planks apparently, according to the same book, called standing 'rightups' and portable 'shifting rightups'. Don't ask. I haven't a clue!

As far as I was concerned, the whole of the hatch cover, including the tiny aft accommodation, was to be removable. This would allow access to the electronics and sail pulley system. The sail pulley system ended up consisting of a winch servo and two other pulleys with a length of cord that ran from the servo, around them, and then back to the original servo pulley. The photo shows this rather more clearly!

I was concerned that, being so large a cover, distortion would be a problem. To counteract this, the whole assembly was made in small sections on the boat. Each component was glued on and then weighed down while the adhesive dried. The result was a reasonably distortion free cover.

The "doo-ah, doo-ah, doo-ah" bit

With most of the major work done, I turned my attention to some of the more detailed components, the most important of which was the winch located on the bow. In order for a wherry's mast to be easily lowered when approaching bridges, a counter balancing weight had been engineered to spring up from the hold, and a rather novel design here allowed the winch, which would otherwise have obstructed

A looking toward stern view of John's he completed wherry. To make them more visible at night, the bows of the real wherries were traditionally painted with a white triangle. Lights were rarely carried. John has, therefore, followed suit. The figures, which are 16mm scale are from Motley Miniatures.

The wherry about to leave John's shed.

this, to first be swung out of the way. A better understanding of how this was achieved as a working feature on my model is probably best explained by the build photos illustrating this article and their captions.

Dirty remarks

My wherry was then ready to be brush painted, so I painstakingly set about this task using Phoenix enamel paints. On completion, I felt as proud as Punch with the pristine finish I'd managed to achieve, so eagerly fired off some photos of my handiwork to Les.

His response was swift – and brutal! I won't repeat his opening gambit in a family magazine; suffice to say it succinctly expressed his utter disgust. And then, before I'd even had a proper chance to register this initial shock, off he went on a half hour rant about how wherries had been working boats that

"Although I hate to admit it, it turns out he was right; it now looks heaps more credible"

would rarely, if ever, have been seen in 'as new' condition; the tirade finally culminating in a demand, that seemed more directed at the universe than at me, to know why on earth I hadn't bothered to weather the model.

Too deflated to put up any kind of a fight (verbal or otherwise), and conscious of the fact he was in the process of making the sails for me, all I could do was take it on the chin. Down but not out though, after an hour or so I got up, dusted myself off and went swiftly back to work (what a hero!), repainting and then roughening up the finish of the whole boat. And you know what? Although I hate to admit it, it turns out he was right; it now looks heaps more credible.

Rigged, crewed and ready

Clearly pleased I had bowed to his 'advice', shortly after I was rewarded with the promised black sail, and so this, along with the fairly basic rigging, was fitted to the mast and gaff pole.

Finally, with my three crew figures fixed strategically into place and a couple of other little touches attended to, my wherry was at last complete.

Testing time ahead…

This was an interesting and challenging project, in the main due to the unusual position of the mast and the fact that it had to be capable of being lowered. As to whether it sails well, I don't yet know. The opportunity to test it has not arisen at the time of writing. Something to look forward to! ●

Take Plawt!

Harry Hitchenes explains how to build a striking river patrol boat from the planet Vultan from this month's free pull-out plan

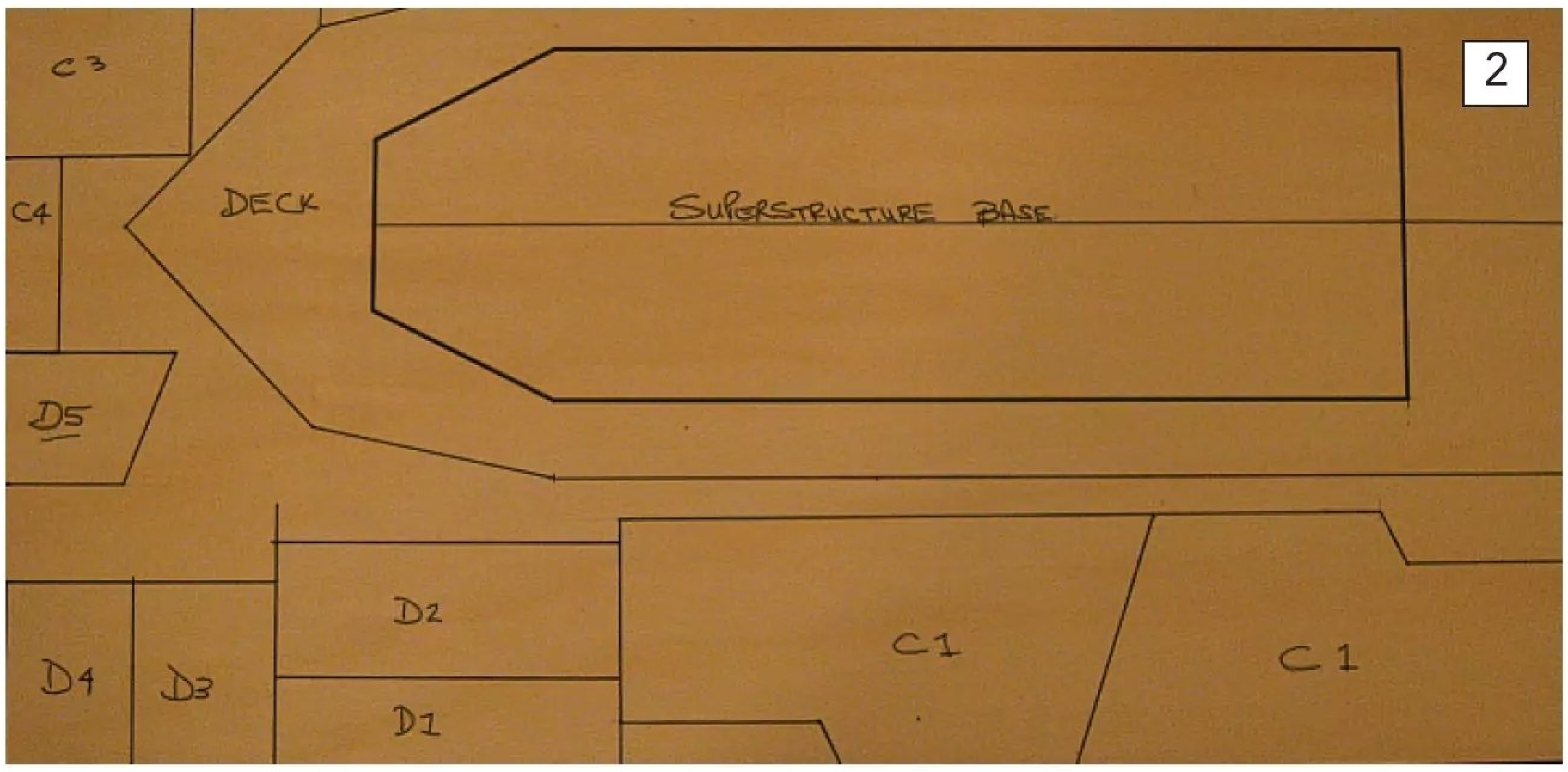
Some time ago I was in one of the Pound or Cheapo Cheapo stores when some 'Army Combat' toy/model figures caught my eye (see **Photo 1**). These appeared to be some kind of sci-fi soldiers, and for some reason I found myself musing on the possibility of building them a boat – something around the size of my Springer Tug. So, smiling at the thought that perhaps I really shouldn't be left unsupervised on a shopping trip, I picked them up and headed for the check out.

These figures then lay around for a few months, until the dreadful coronavirus hit us. Within a couple of weeks of being virtually housebound I had the project I'd begun working on pre-lockdown finished, and, going a little stir crazy, found myself wondering what on Earth could I do next. Scouring the available stock in my workshop for ideas, I happened to put my hand on the pack of sci-fi soldiers still sat in a drawer waiting to be deployed. Hmm… "*Didn't know what time it was the lights were low, I leaned back on my radio. Some cat was laying down some rock n'roll. 'Lotta soul' he said. Then the loud sound did seem to fade. Came back like a slow voice on a wave of phase. That weren't no DJ, that was hazy cosmic jive…*". OK! Time to get out the drawing board, while at the same time giving some thought to the planet these boys call home…

The planet Vultan

Vultan is a planet many light years away from Earth. Actually it now takes only three weeks to get there. If you get on the X25 Interplanetary Express

Shuttle it is no problem. The X25 uses the space gate just a bit further out than Neptune, and then only stops at two other planets. Vultan is about twice the size of Earth and is lit and heated by two red suns. Its inhabitants are very human in appearance, except for their skin; their complexions being various shades of blue. The effect of



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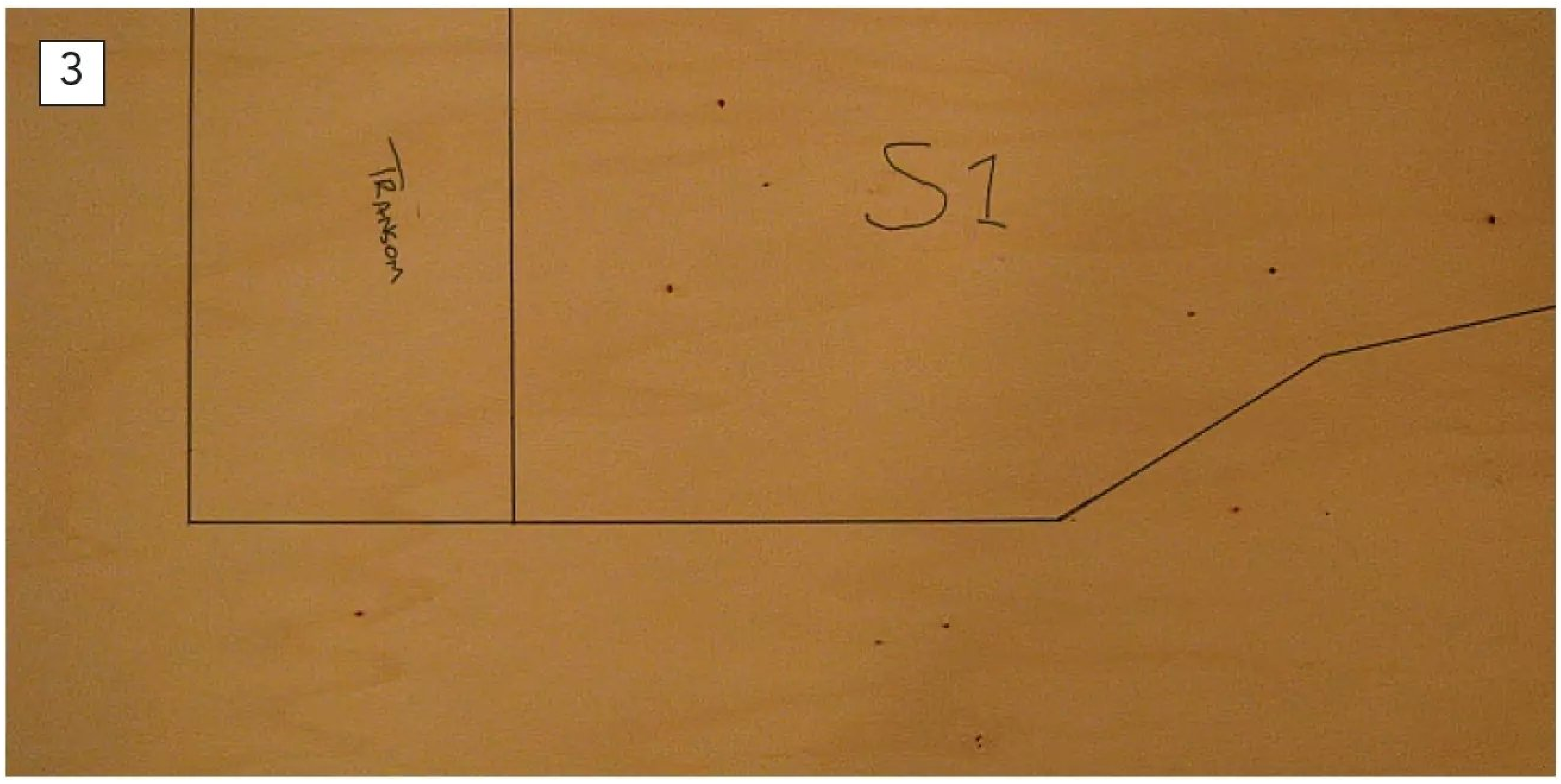

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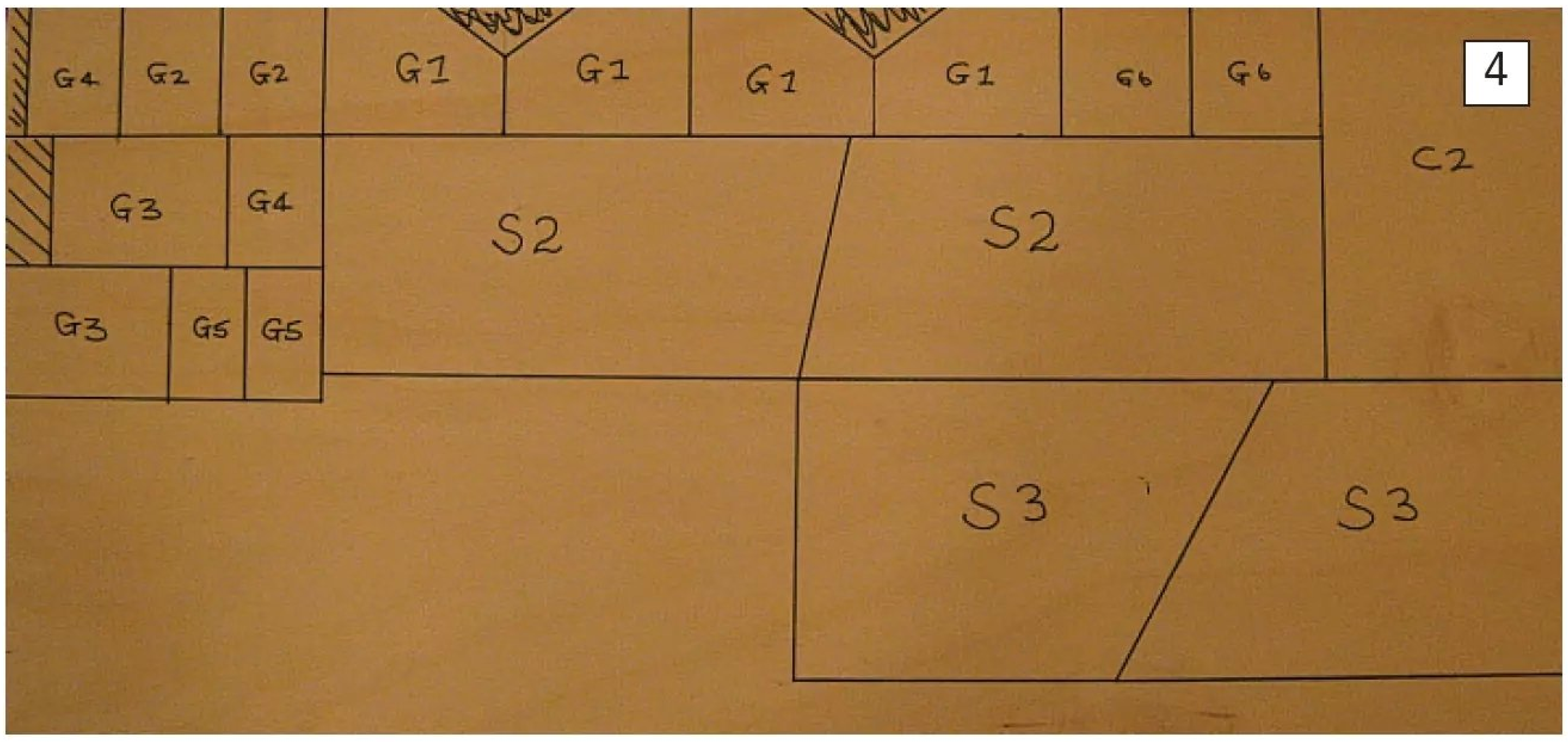

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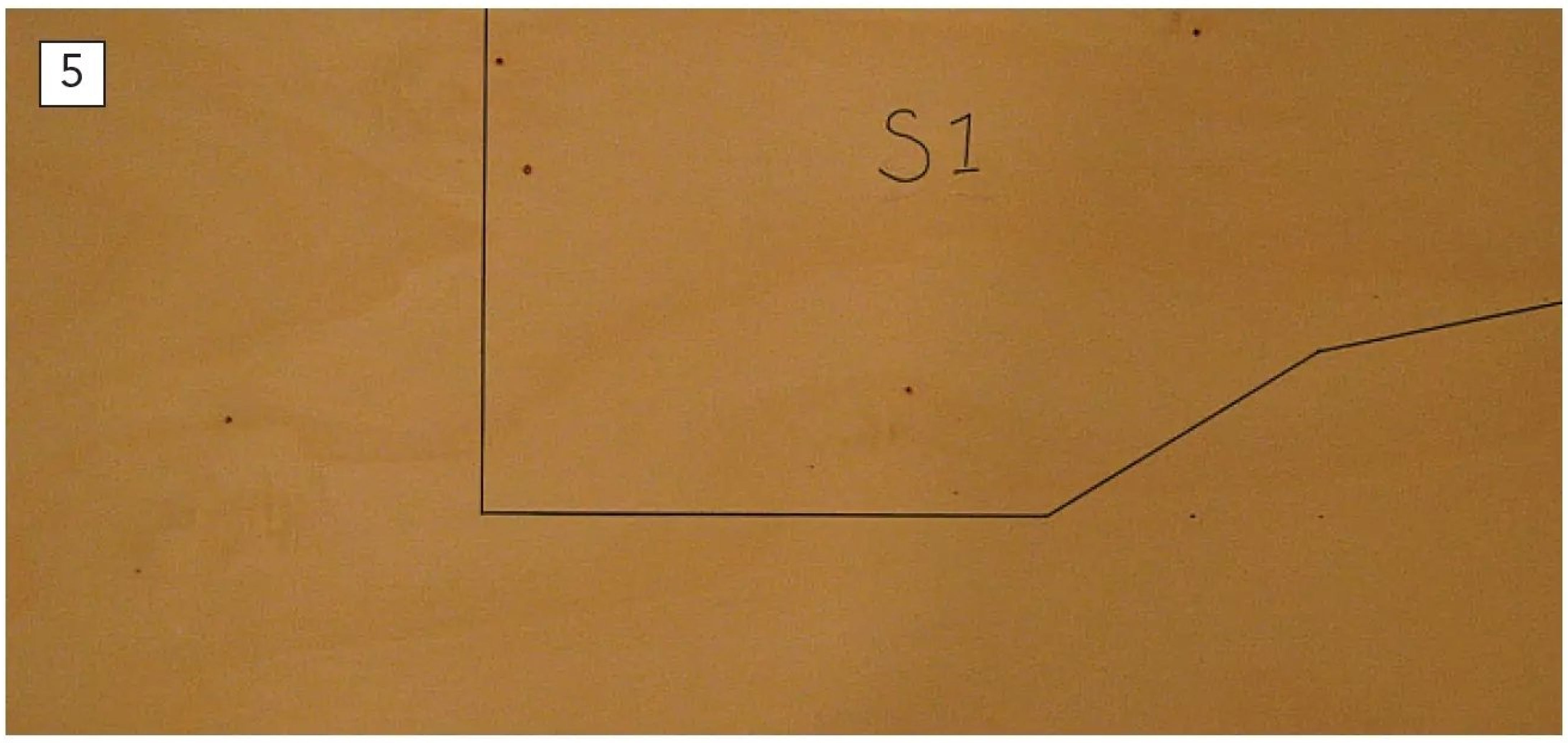

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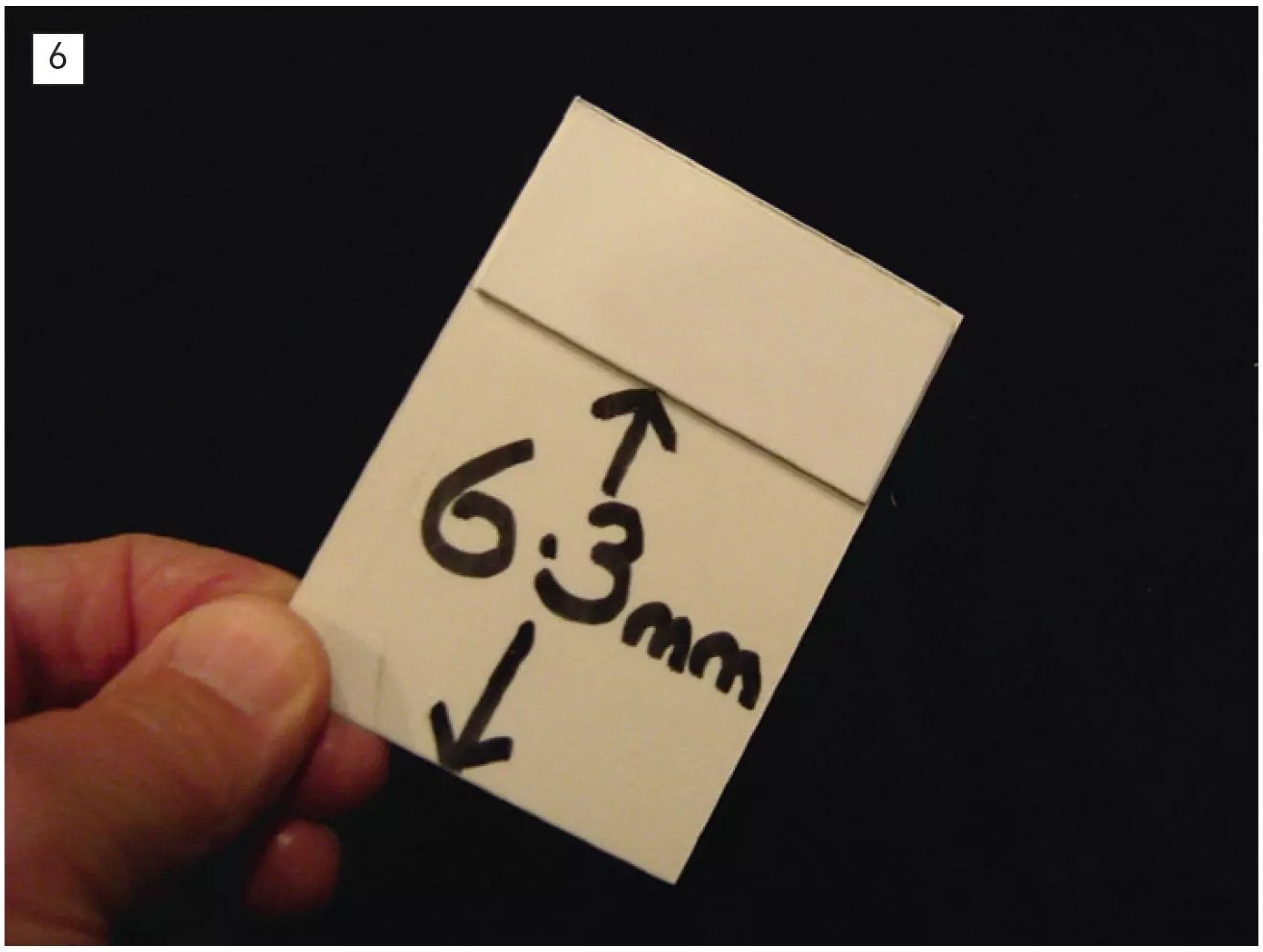
the red suns has a marvellous effect on the flora and fauna of the planet. There are very few dark colours, with almost no green, brown, grey or black to be seen in nature. Virtually all the plants are vivid bright colours, and almost always have a glossy finish. This makes camouflage interesting, as you will see later. There's a lot of water (curiously, in various shades of red) on the planet too, hence why, I felt, the boys needed a boat.

Putting plans for a model into action

I decided to stick to two very strict criteria for this model: she had to be both easy and economical to build. So, to make construction easy, she is, by design, all straight lines, and, to keep costs down, she can be built from five sheets of 3mm lite ply (610mm x 305mm) and some 6mm square balsa (which I acquired from Hobbies Ltd). You may need other bits and pieces, depending on how much detail you want to add. Remember that this is not a real boat, so you can get as imaginative as you like.

The hull

The various parts are shown on the wood layouts in **Photos 2 to 5.** These layouts don't include the pieces for



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"It's vital to get the first part of the construction right, as this is what will form the basis of a nice accurate hull"

the bottom of the boat; you should be able to cut these out from the unused areas of wood. I cut all the pieces for my hull bottom out of the spare bits from the first four sheets of lite ply, only needing to go into the fifth sheet for the sides of the superstructure. They are, therefore, not marked out. As we're not creating an exact scale model here though, sizes can be adjusted to suit.

While lite ply is easy to cut, I would recommend starting with a nice sharp blade. I cut all of my parts out first, so as to create a nice simple kit. I also fashioned a simple jig from couple of bits of 2mm plastic sheet, which I used to mark out where the 6mm square balsa should go to support the deck *(see* **Photo 6***).* I did this by simply laying the jig along the top of the bulwark, laying a pencil against the bottom of the jig and sliding it along each relevant piece. I then stuck 6mm balsa squares in the relevant places on each of the hull side pieces (see **Photo 7***).* When gluing your balsa squares to each part, make sure that you weight them down on nice flat surface to prevent any warps developing. Light ply can easily bend if left to its own devices.

It's vital to get the first part of the construction right, as this is what will form the basis of a nice accurate hull. So, first of all, you must join together the deck, transom and one flat side

"This results in a nice rigid shaft that will not vibrate"

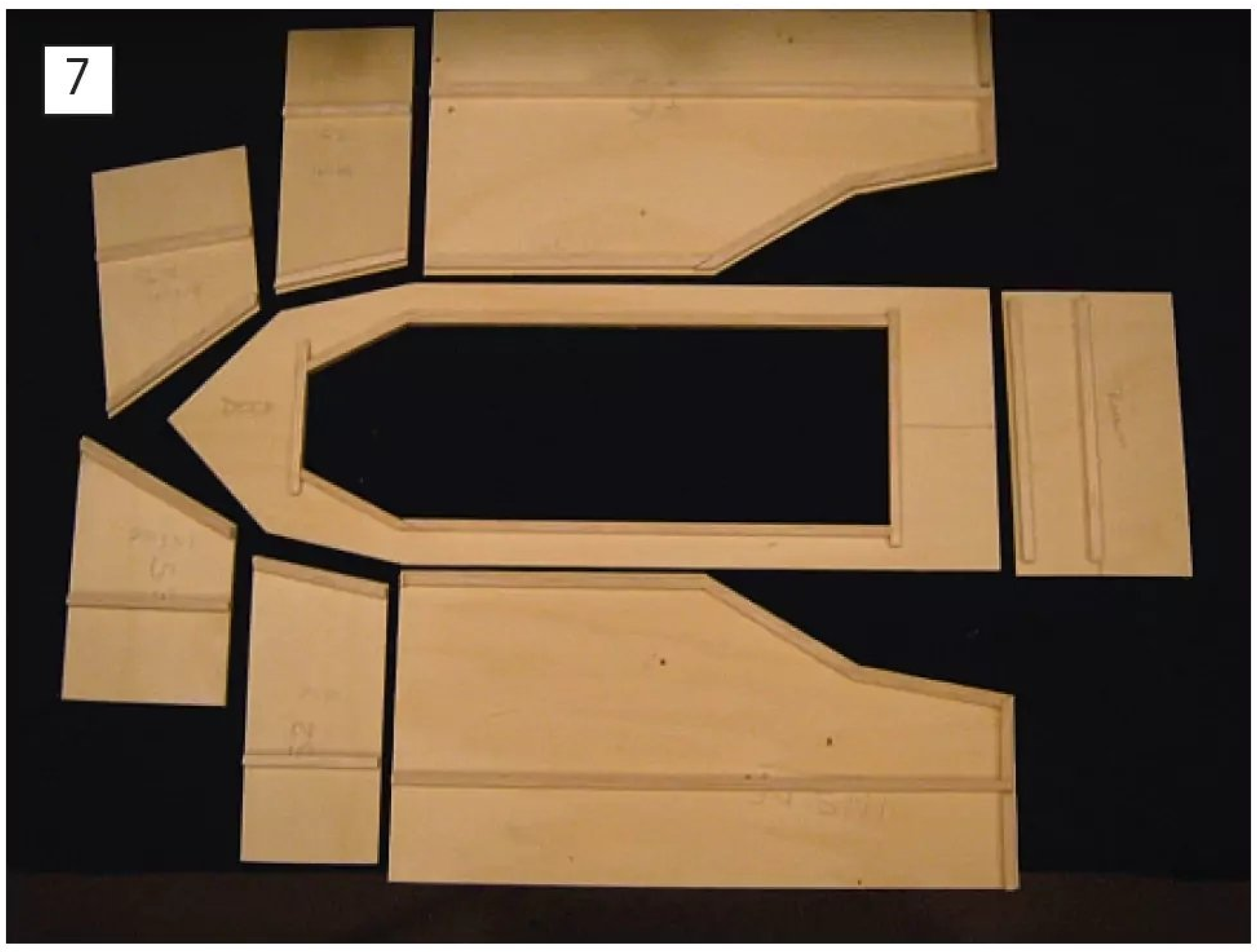
of the hull. Again, make sure you use plenty of weights here, so that the transom is held vertical, and nothing can move out of place (see **Photo 8**). Having done this, leave this little sub assembly alone overnight to let the glue dry completely. (Those of you who build with superglue can probably just carry on after a few minutes. I, however, avoid the stuff like the plague as it adversely affects both my sinuses and my eyes.)

Once this basic structure is solid you can then add the other side pieces. (see **Photo 9).** The bottom pieces of the hull can also now be cut and added. Start in the middle with the largest flat piece, so that you can use this to make sure that the sides are parallel. Then add the other four pieces, not forgetting to make a slot for the prop shaft to go through.

For the motor mount, use whatever thickness of ply is necessary to get the motor and shaft in alignment. I made sure that these pieces went right across the bottom of my hull to make it more rigid (see **Photo 10**).

You are now ready to install your propeller shaft. I put one triangle of balsa between the shaft and hull exterior, and another inside the hull. More balsa needs to be used between the shaft and the hull sides; this results in a nice rigid shaft that will not vibrate.

The balsa pieces across the hull will also be used later as a support for a platform holding the receiver, speed controller, etc. Cut some lite ply strips, 2cms wide, so that these can be used for both the hatch surround and the sides of the superstructure. The hatch surround will need to be glued in place with the bottom edge of these



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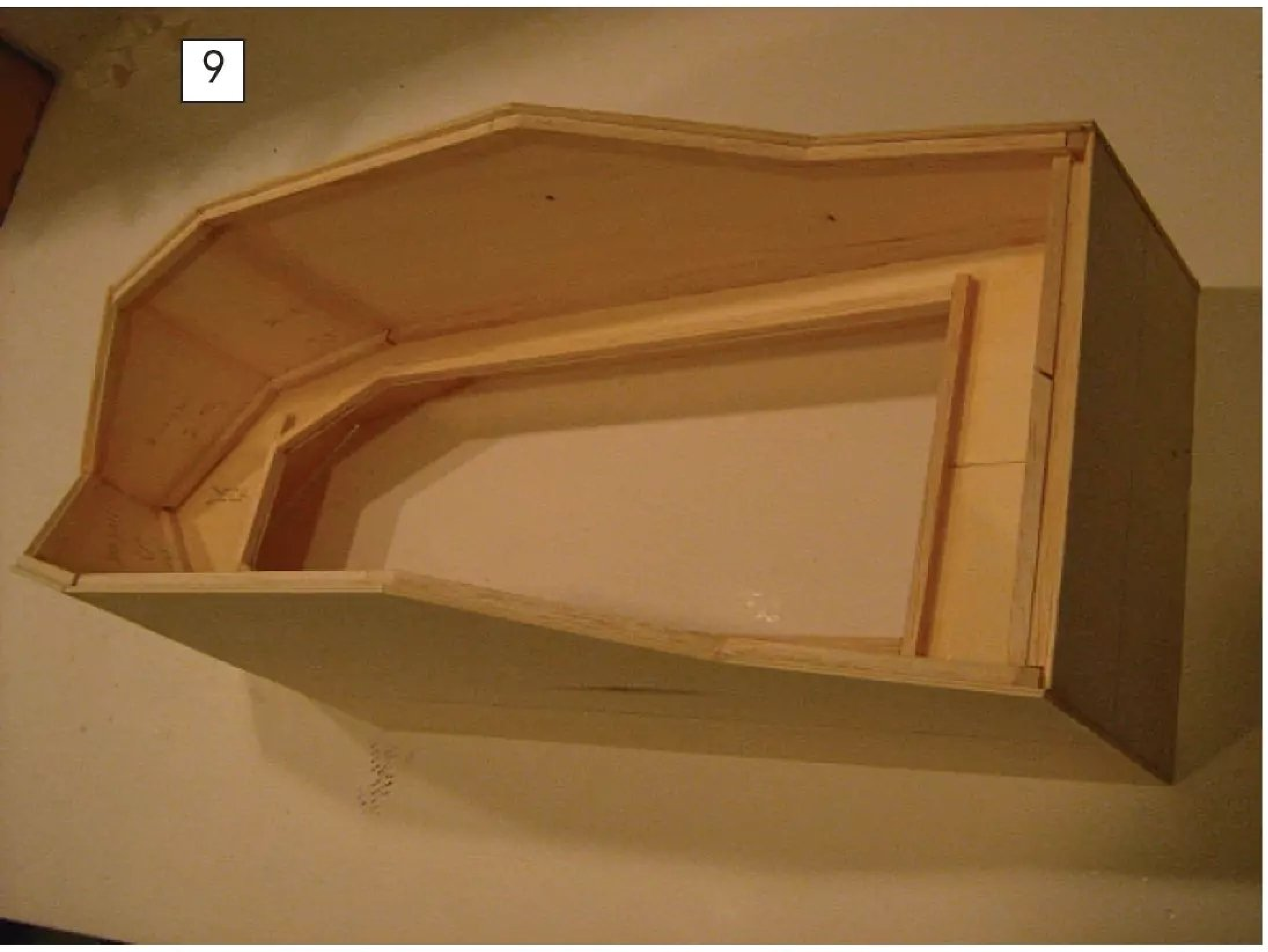
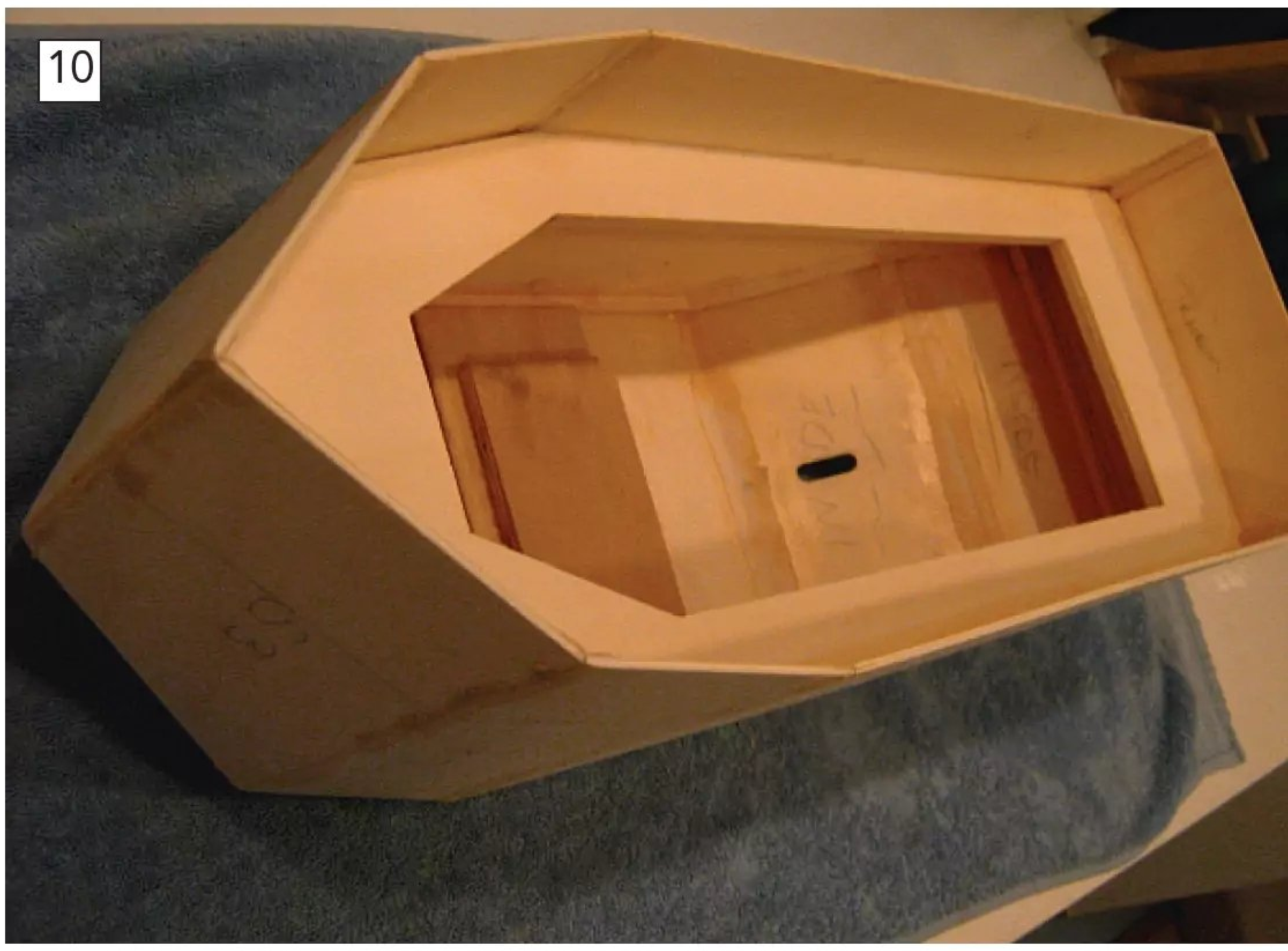
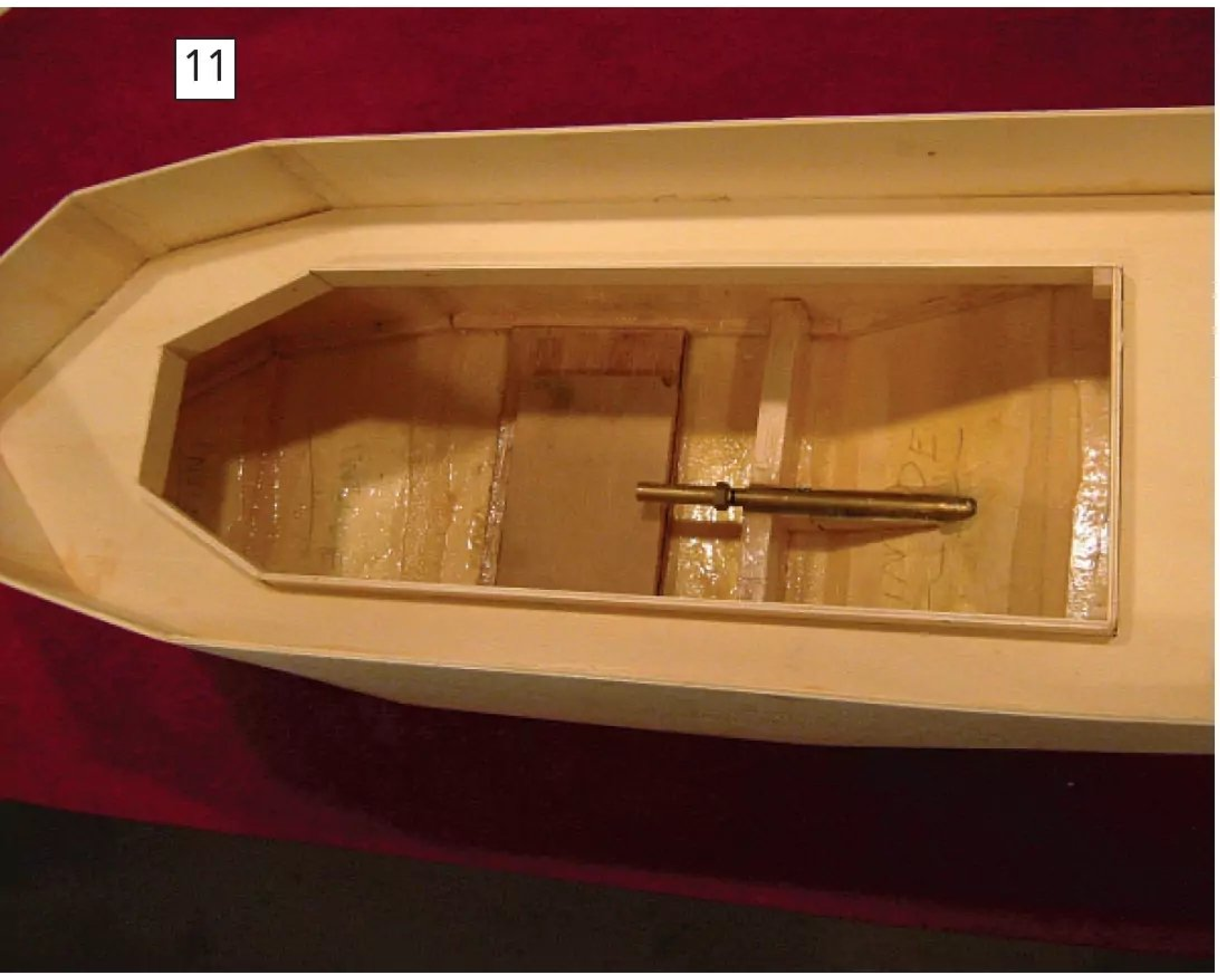
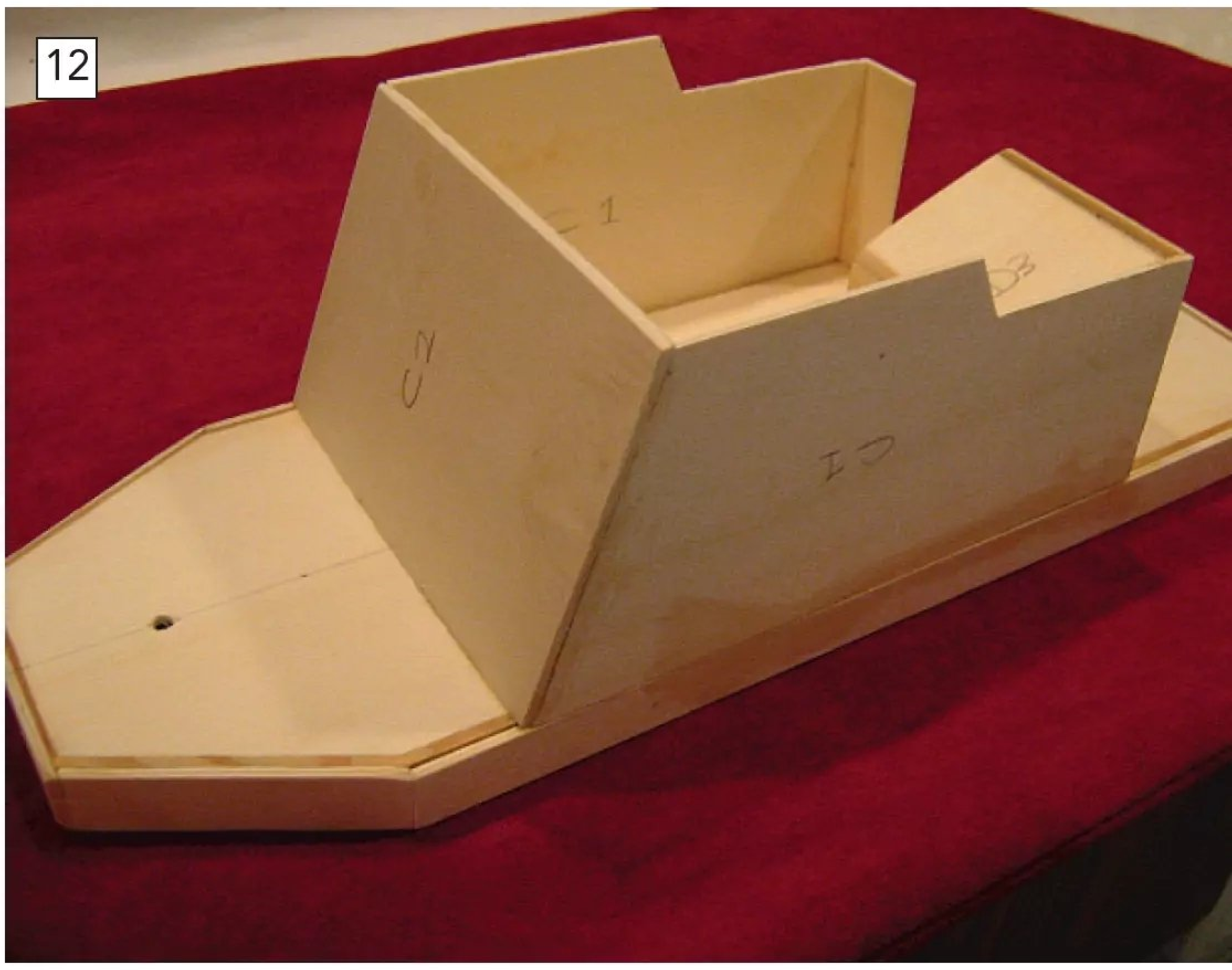








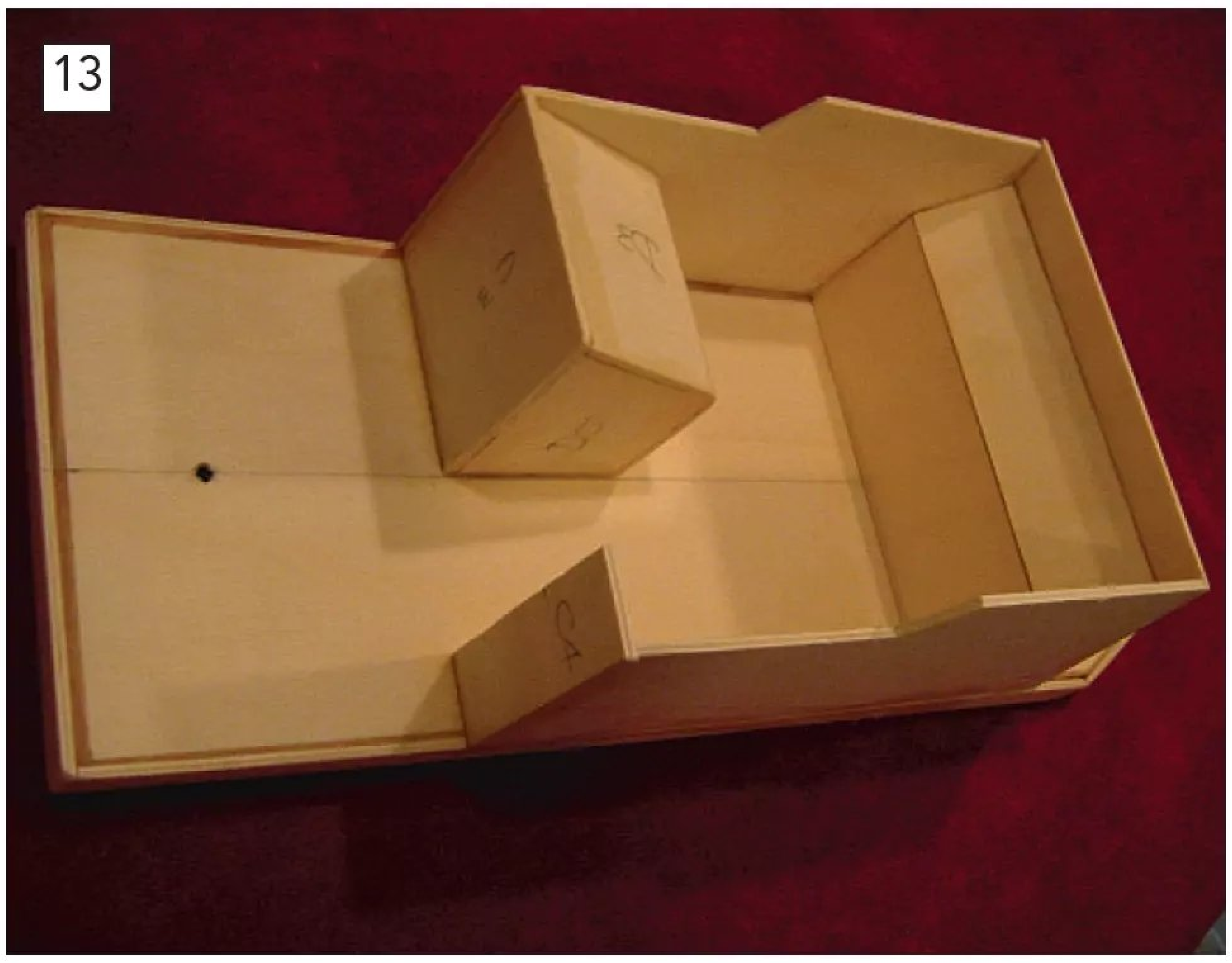
strips kept level with the bottom edge of the 6mm balsa doublers.

Some people paint the insides of their hulls, but I prefer to use thinned down epoxy resin. Using epoxy bought from one of the Pound shops in a twin syringe layout, I mix up a solution of resin and methylated spirits. Something about two thirds meths and one third epoxy proves sloppy enough to reach everywhere inside the hull. Tackle the bottom first, and then each side individually. This thinned down epoxy still tends to take about 30 minutes to cure, but you can hurry things along by heating it with a hairdryer (used on a low setting). Doing this will get the whole job done in about an hour. But, be warned, it stinks! Once the epoxy has completely cured, however, the insides of the hull will be nice and smooth and shiny (see **Photo 11).**

The superstructure

Remember that bit that you cut out of the deck for the hatch? Well, this can now be used to form the basic box on which the superstructure sits. Now, I know this piece of liteply came out of the hole cut in the deck so theoretically it should fit but, believe me, it will not! So, you have two options. You can either cut out a new piece of wood or you can simple glue some thin strips around the existing piece. I used some 3mm square spruce strips that I had spare. I then doubled these up so that there was a larger surface area to glue when adding the lower superstructure sides. The 2cm strips destined to form the lower superstructure sides need a thin length of square spruce or balsa along the top edge. I used some more of my 3mm square spruce here – as a result increasing the gluing surface of the area I'd just widened to form the basic box of the superstructure. Having glued these strips in place, you will need to leave them to dry fully before trial fitting this basic superstructure on the boat. You will almost certainly find that its quite a loose fit, even if you wait until the whole boat is completely painted. However, you can glue some small strips of thin ply inside the edges to take up the slack. These also have the advantage of stopping any water that gets onto the deck finding its way inside of the boat via capillary action.

The upper pieces of the superstructure (*i.e.*, the open bridge) can now be glued in place. The two control consoles inside the bridge make the structure very solid. The guns are simply boxes (see **Photos 12**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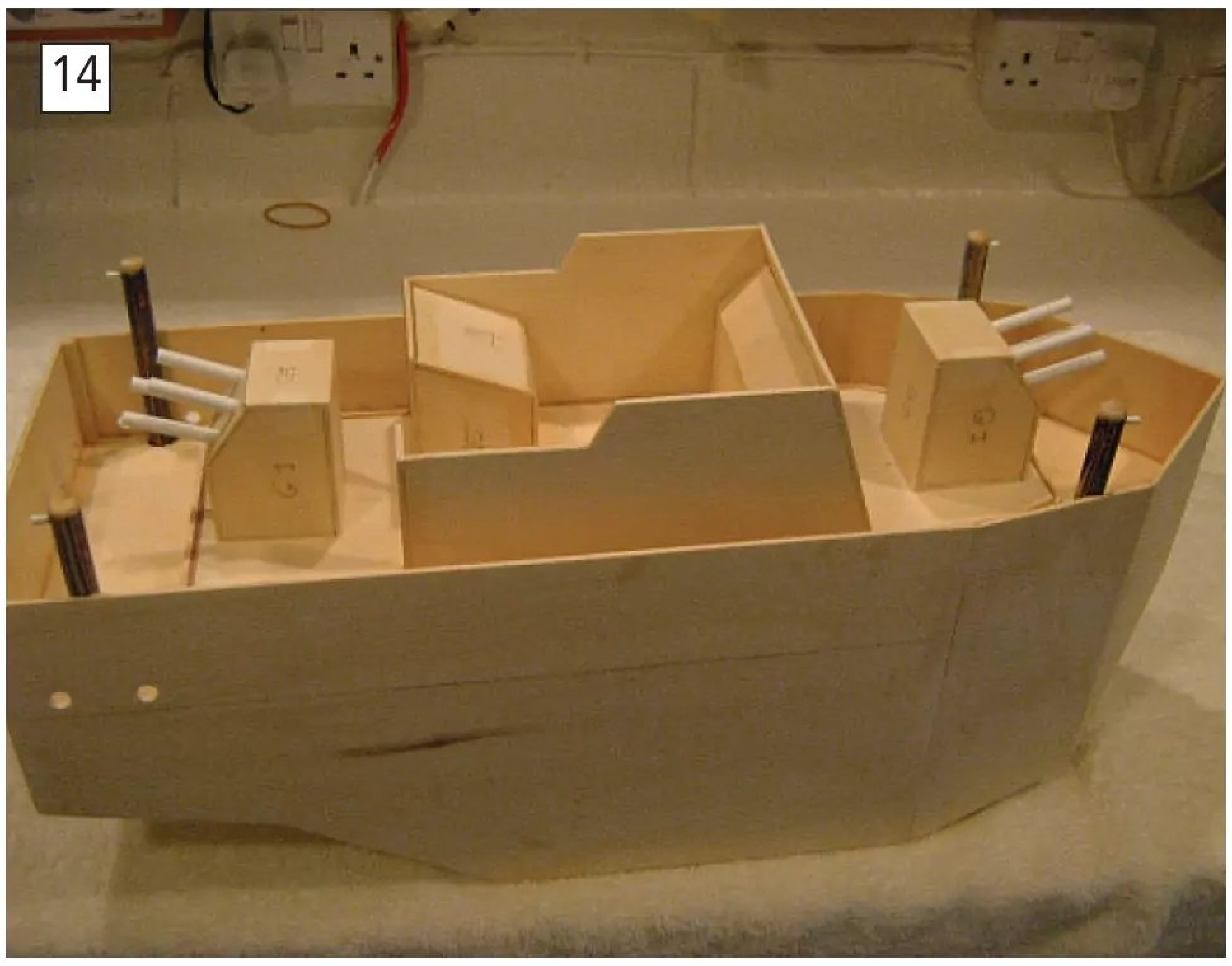
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and 13), to which you fit as many gun barrels as you fancy!

It's now time to get your drills out. Firstly, drill two holes each side at the after end of the bulwarks and four holes in the transom. This will allow you to empty out any water that may be taken onboard while the boat is being sailed. This happens regularly with my boats as I like to sail in all conditions – the rougher the better! Next, drill another four holes in the deck for the four vertical posts. These serve as holders for the four laser guns and the tractor beams. You can use dowel or plastic tubes to the guns. I intend to use some silvery sticky back plastic wrapped around the posts for my tractor beams. You can now plonk the superstructure on, add the guns, and you should have a boat that doesn't look too bad at all (see **Photo 14).**

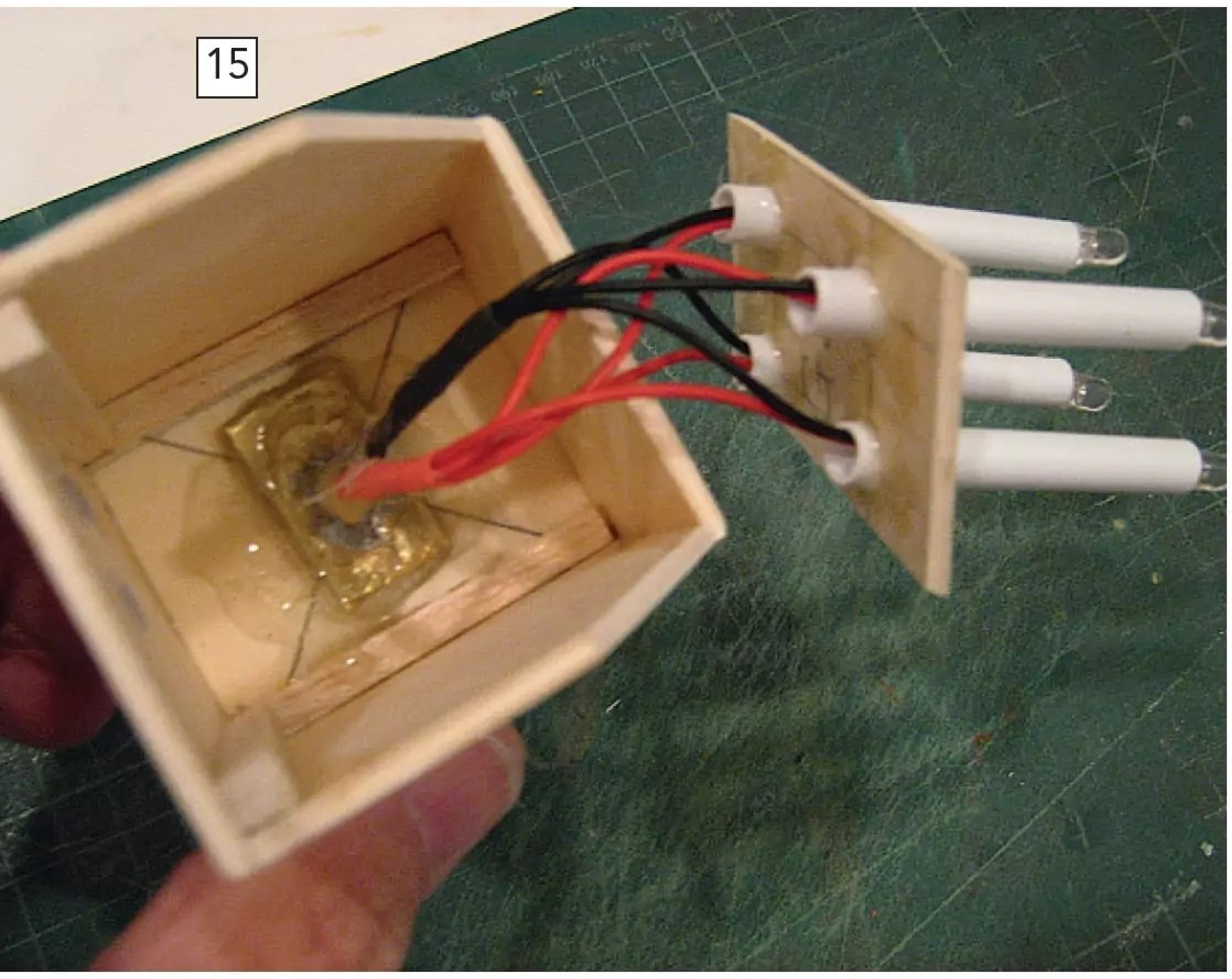
Added extras

You could finish the boat as she stands and then fit the drive gear, *etc* (which we will come to later) and she will perform for you. This was my initial plan when the model was conceived and the design for her drawn. But for me, and it was a massive BUT, we were then hit by the coronavirus shut down. My wife's medication means that she has a lowered immune system and so we had to go into shielding mode. It looked, therefore, that I was going to have a lot of spare time on my hands before *Plawt* could get herself wet in the lake.

What to do? Well, I came up with the idea of using some of the lights that have lain around for years to make the ends of her four barreled laser cannons light up. Taking things a stage further, why not, I though, make her cannons capable of rotating and put in some kind of noisy sound effect device for extra effect? You guessed it; I decided to do the lot!

So where did I start? Well, firstly, before painting the hull I added a load of 6mm square balsa around it at the top of the bulwarks and also at the same level as the deck. More was added in vertical stripes between these two. Then I used more 3mm square to make diagonal beams from deck level to the bottom of the hull. This makes *Plawt* look quite beefy! The four cannon barrels I made from plastic tube, which was big enough to get the wires from the light through, and also allow the light to sit at the end of the barrels (see **Photo 15**). Dead easy! Now to make them turn...

A micro servo can easily be fitted under the superstructure. I hid mine under the front control panel (see **Photo 16**). If doing this yourself, make sure that the centre of the servo arm is on the centreline of the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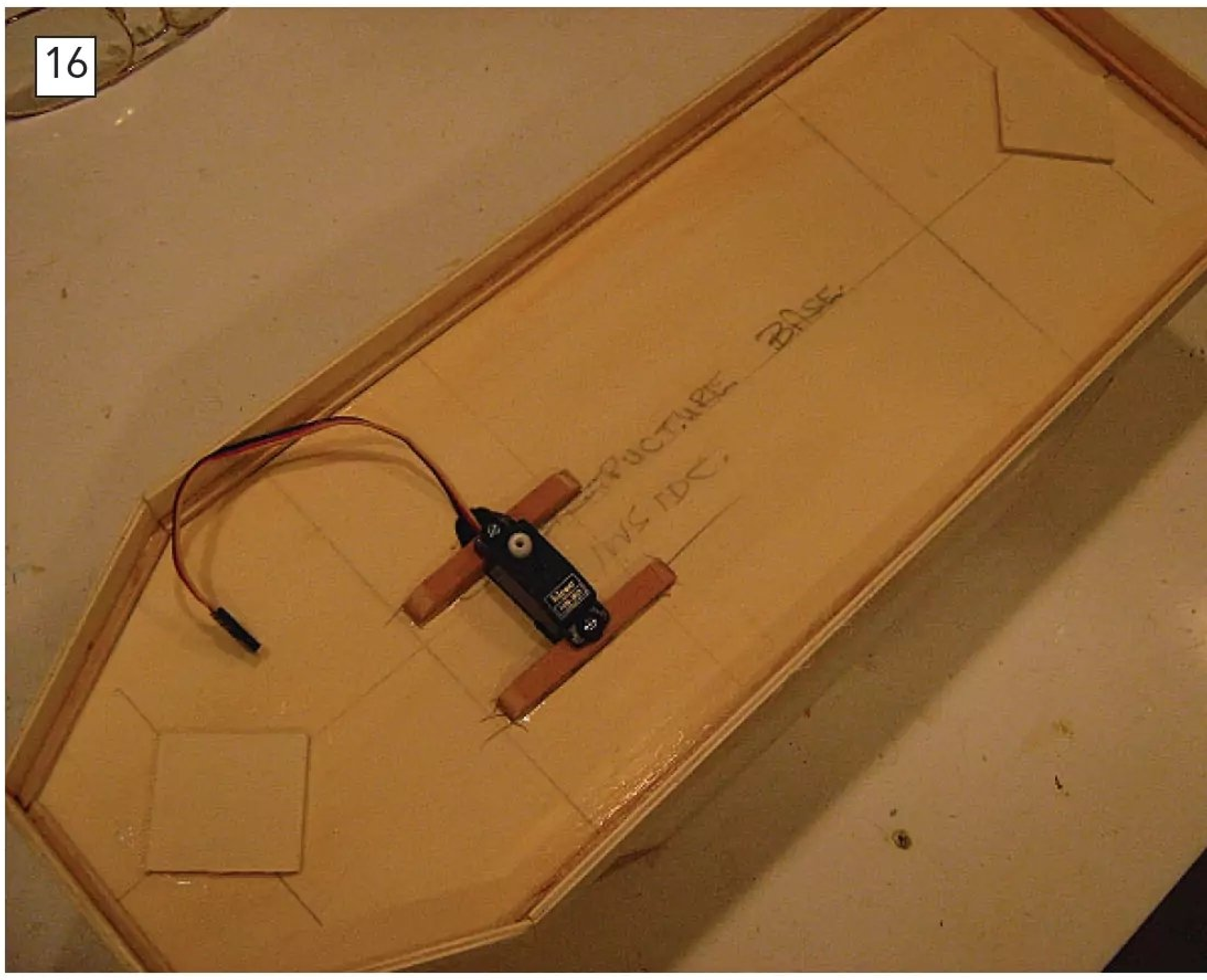
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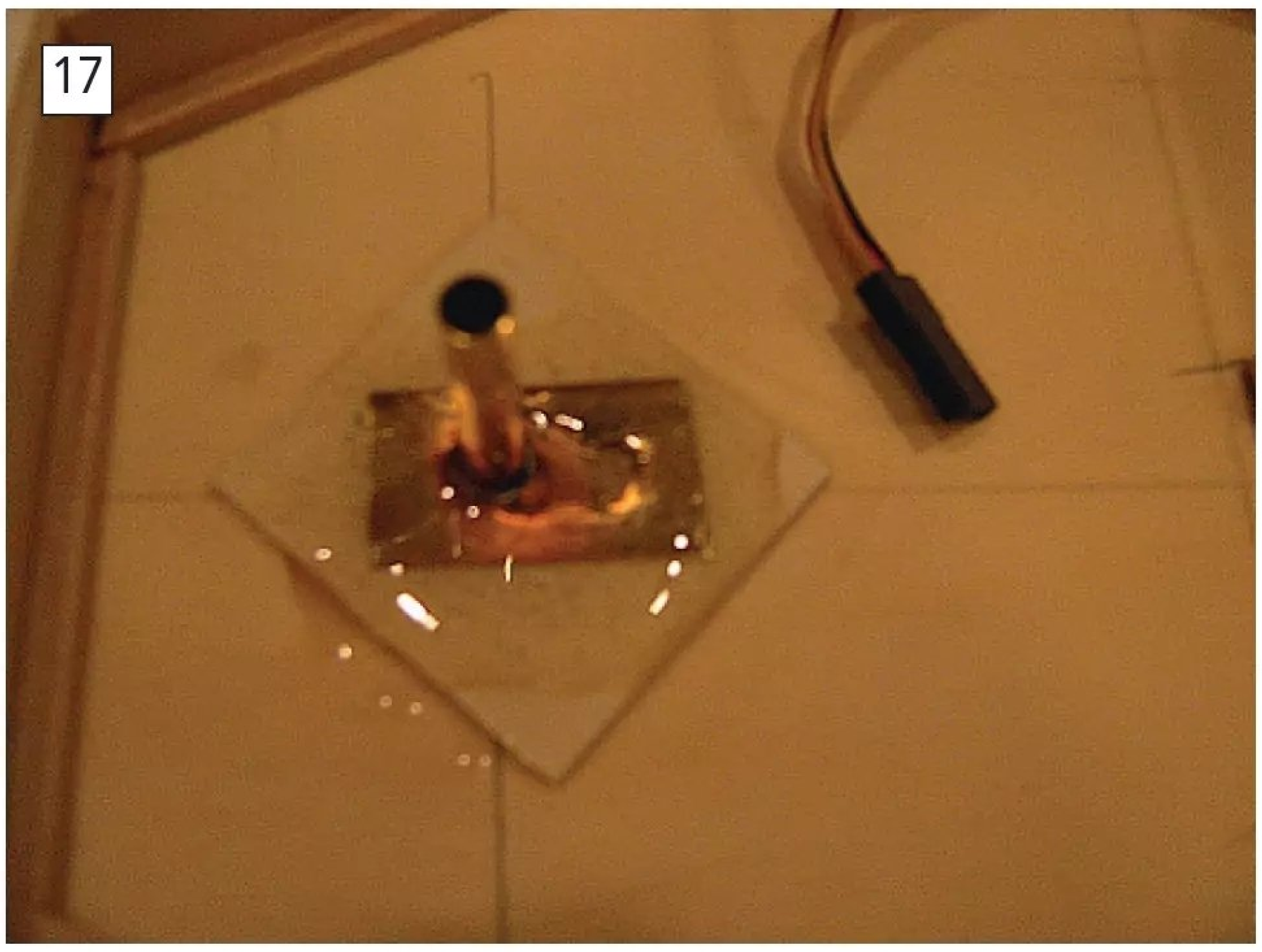
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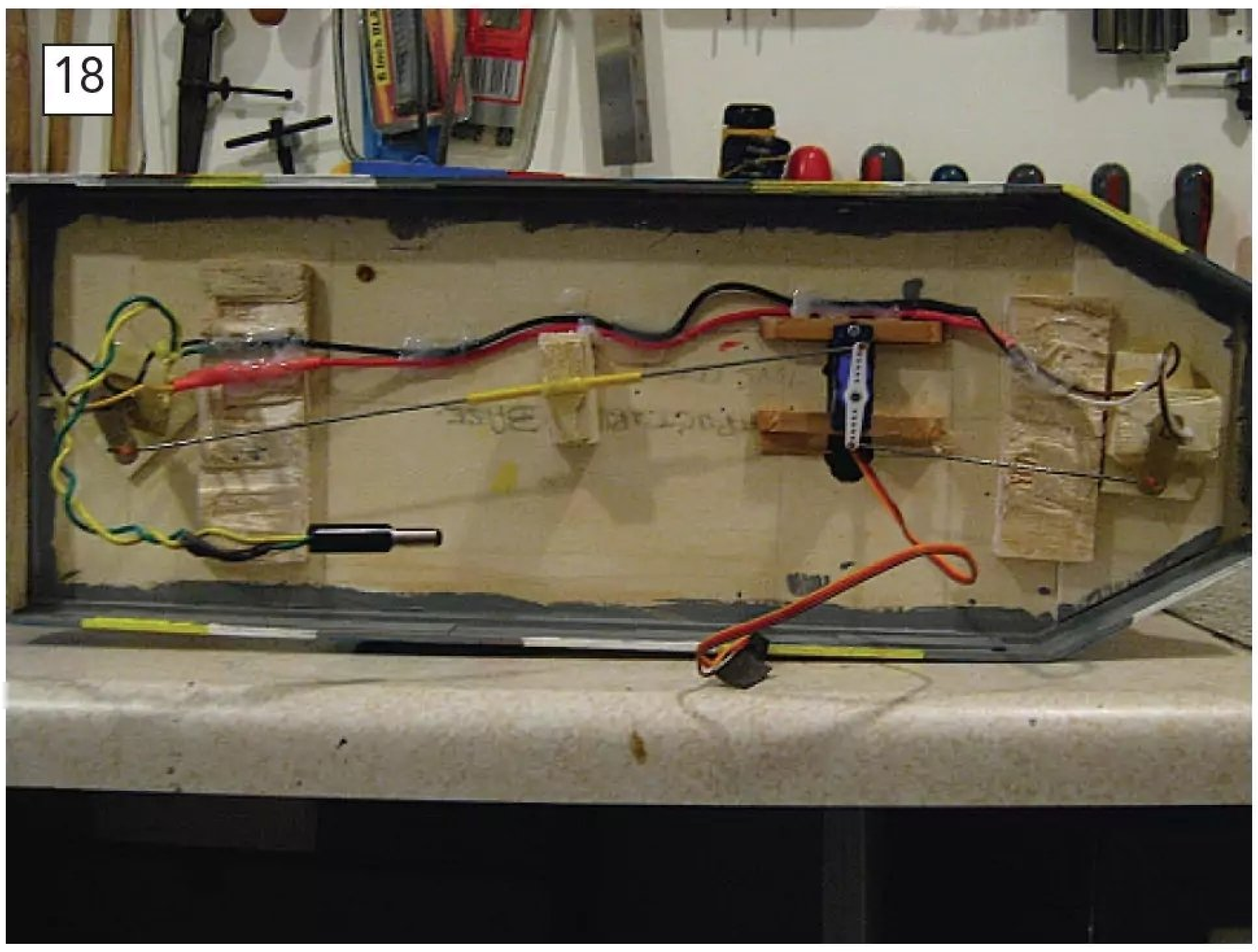
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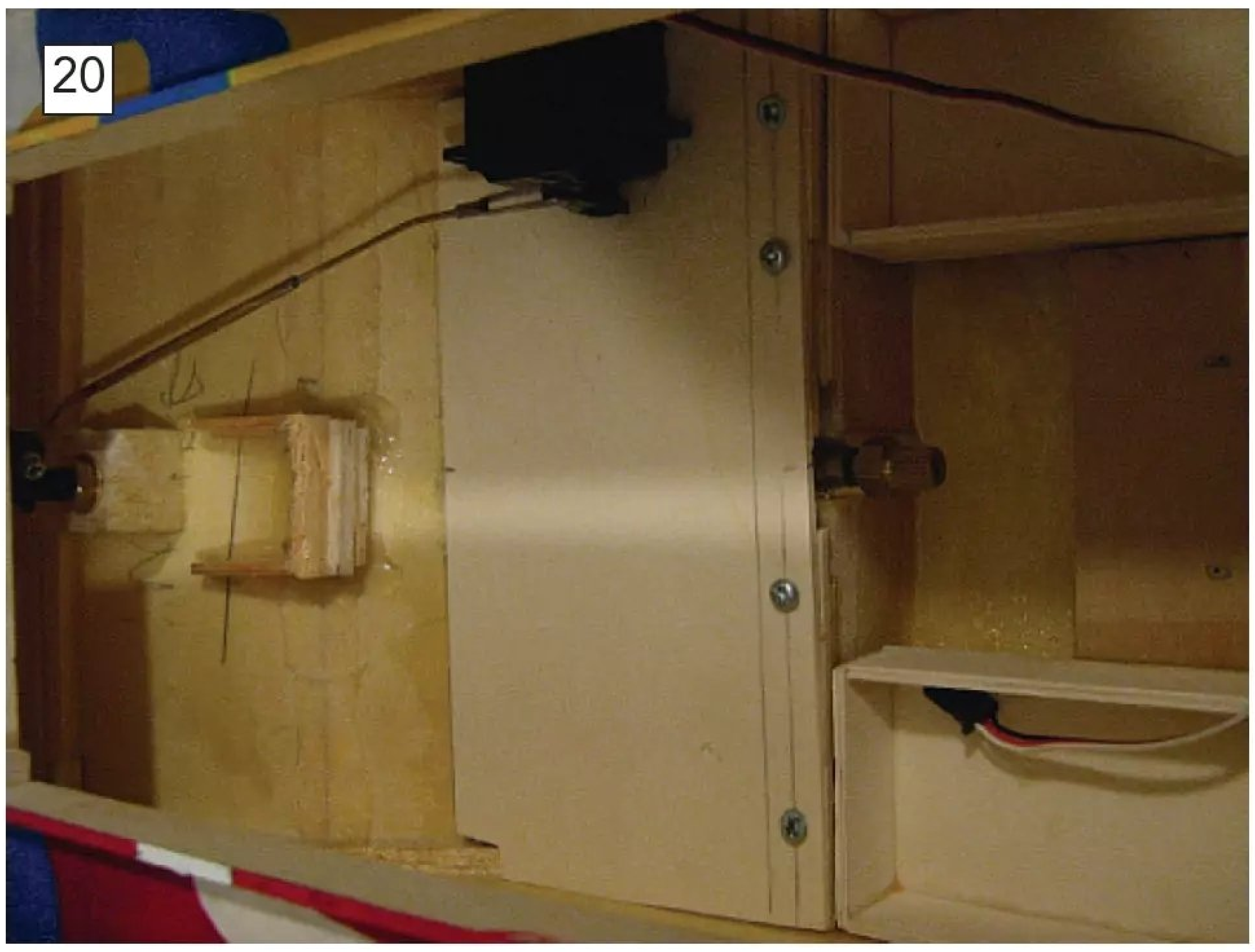
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superstructure. The actual turning mechanism of the gun turrets is similar to a rudder, except that instead of a solid rod in the centre you are using a smaller tube. Just remember that you have to get the lighting wire down this inside tube. You will have a swearing session, followed by a desperate search for thinner wire if you get the size wrong. I would never make an obvious error like that, would I? Oops! (See **Photo 17**).

The problem with employing the same system used for your rudder to make the guns rotate, however, is that you won't be able to get them to turn through 90 degrees in either direction. The linkage will just jam. I, therefore, used two brass collets secured with grub screws and then soldered some thin brass wire to these collets just like a rudder arm. The collets I used were actually repurposed wheel holders from my model aircraft days. The servo I connected to gun arms with thin wire, supported in the middle with a piece of plastic tube **(see Photo 18).** Yes,

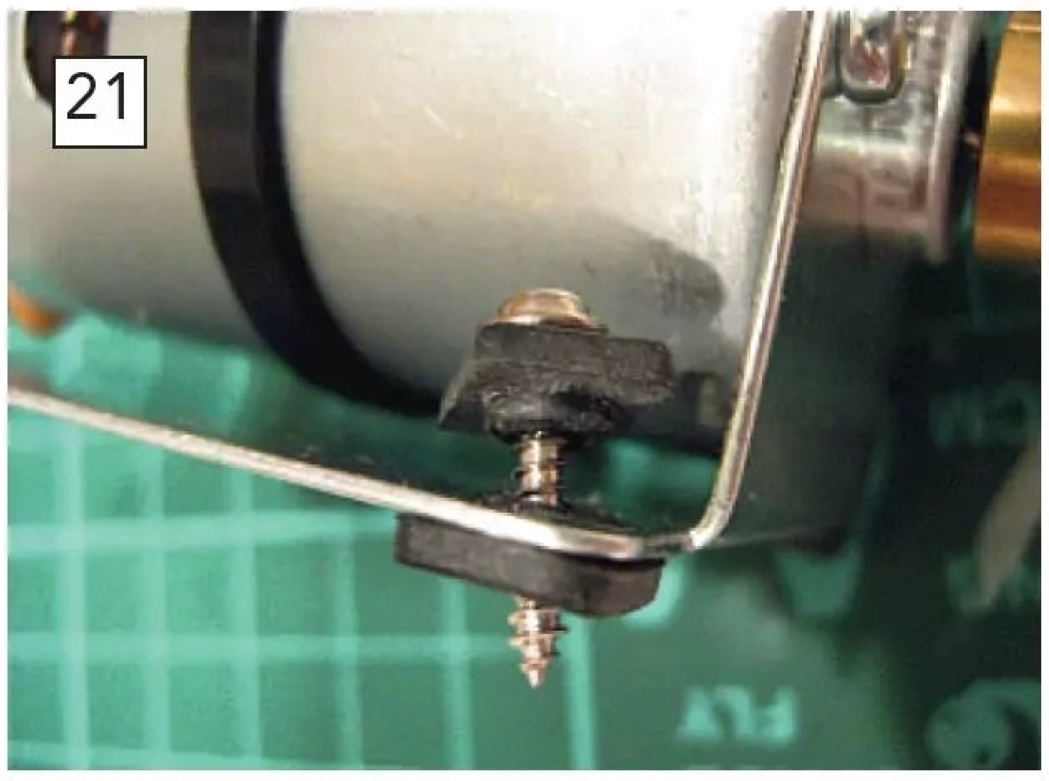
"This set me back nearly two quid. Extravagant devil!"

I know it looks a mess, but all other options tried failed.

The servo needs to be connected to the receiver when you put the superstructure in place. The lights use a simple plug and socket, exactly the same as you would use for a transmitter with rechargeable batteries fitted.

A piece of 3mm lite ply screwed on to former in the bottom of the boat supports the prop shaft. Screwed only, I may add, so that it can be removed if you later need access to the prop shaft. This will hold the rudder servo, which can be safely held down with double sided sticky tape. The receiver can be held in place with self-adhesive Velcro so that it can be transferred from boat to boat (see **Photos 19 and 20**).

I decided to try another experiment with the engine mount. The rubber anti-vibration mounts that you get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with servos perfectly fitted the holes in my motor mount. I cut these in half and fitted them onto the servo screws (see **Photo 21**). The engine was then connected to the prop shaft using a normal coupling, with the centre plastic hinged bit replaced with silicone tubing. This actually results in a nice quiet drive line. Two battery boxes were made from lite ply and glued either side of the motor: one battery being for the motor and the other for the lights/sound effects. The latter, by the way, ended up coming courtesy of a little buzzer from an electronics supplier. This set me back nearly two quid. Extravagant devil!

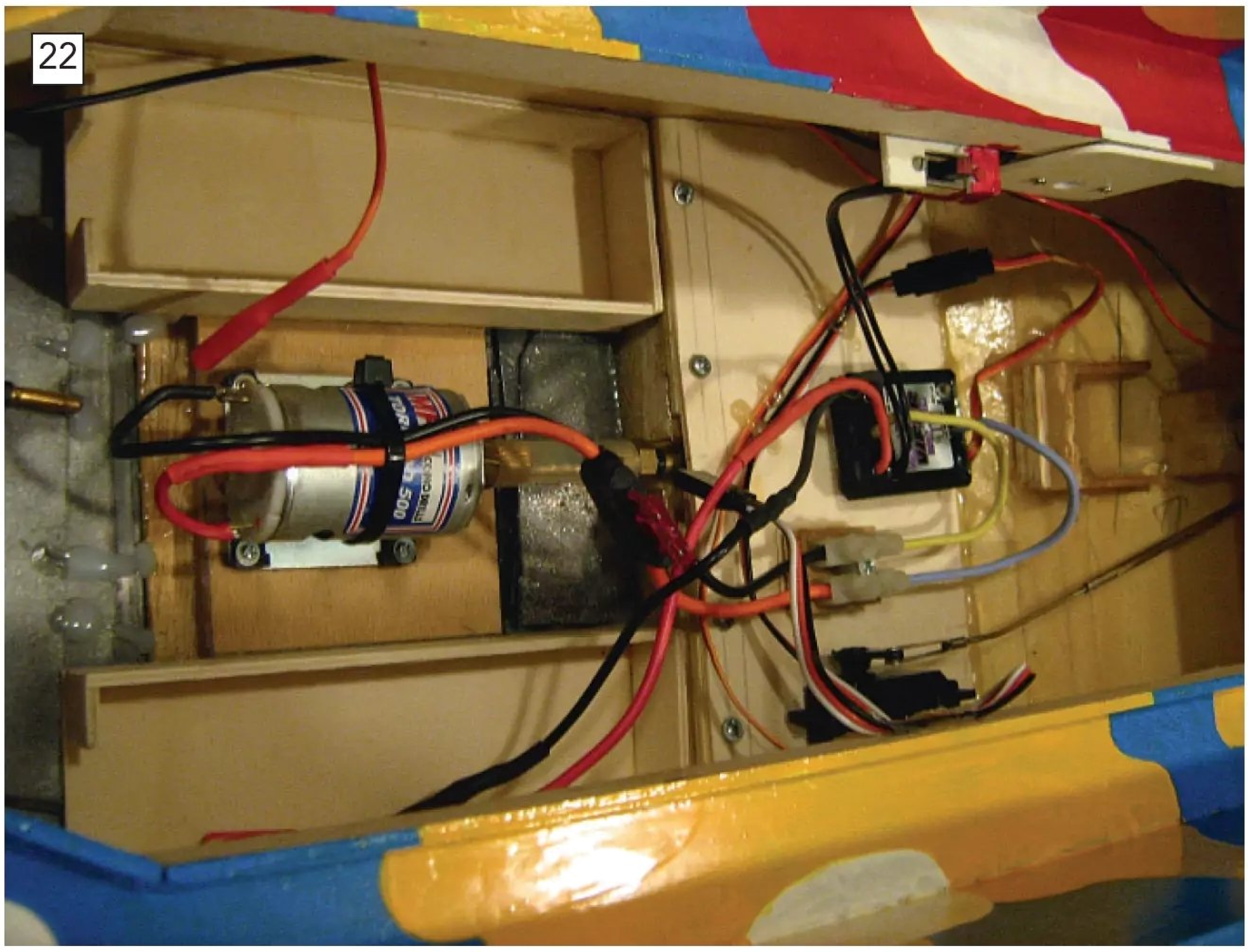
Photo 22 shows all the internals fitted.

Painting *Plawt*

All that the boat needs now is some paint…

I went with my usual method here: a couple of coats of grey cellulose primer, which is then rubbed down before applying the paint itself. Remember, what I told you earlier about the colours on this planet? Don't be surprised then, that the camouflage scheme is so loud it seems like a contradiction in terms! For this I used four pots of bright red, blue, yellow and white gloss acrylic. The paint I'd selected, however, didn't seem to have a lot of pigment in it; so, for each of the four separate colours, I ended up having to apply four coats before I finally achieved the desired hue – by which point I was wishing I'd just opted to finish the bl**dy thing in monotone. Never mind; the end result now sees *Plawt* looking very attention grabbing out on the water.

"Say that agin pal and ah'l plawt yee one"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I also added a windscreen around the top of the superstructure, using clear plastic and some L shaped plastic moulding.

Painted up, my bargain-buy figures looked nice and gaudy, and really completed the overall look once placed besides the control consoles featuring weird looking dials, *etc*.

Plawt performance

Once eventually allowed to legally leave the house, it was off to the lake for a trial sail (see **Photos 23, 24** and **25**). So, how does *Plawt* perform? Well, she's quite fast and maneuverable, and even at lower speeds the square strips on her side create a selection of small bow waves. Her guns rotate well and look impressive when lit up, and when her buzzer is screeching it certainly shifts the seagulls! As expected, however, she is absolutely impossible to control in reverse.


23

"Let the children use it, let the children lose, let all the children boogie..."

All in all, I think you'll find this a fun and interesting build, and one totally open to interpretation. I suppose that if you decided to turn her into some kind of rescue boat, though, she would have to be painted black and grey to stand out on planet Vultan!

Plawt? What sort of a name is that?

In case you're wondering, I suppose I should explain… I am originally from the East End of Newcastle upon Tyne. Back in the 1950s and early '60s someone might say to you: "*Say that agin pal and ah'l plawt yee one*" Which roughly (or perhaps it's more appropriate to say smoothly) translates as: "*Please do not use that tone to me old chap or I shall be forced to punch you on the nose.*" Seemed like an appropriate name for a fighting boat! ●

Plawt specifications		
Length	23"	58cms
Width	8.75"	21.5cms
Motor	MFA Torpedo 500	
Battery	2 x 7.2v	
All up weight	13lbs	5.9kgm

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A successfully built and thoroughly tested model.

CADless designing

Ever pondered the possibility of getting a plan you've drawn up published? **Glynn Guest** offers some words of encouragement….

There are quite a few people in this hobby who can design and build interesting and impressive model boats, so it's always surprised me that so few of them seem willing to try and get their designs published in magazines.

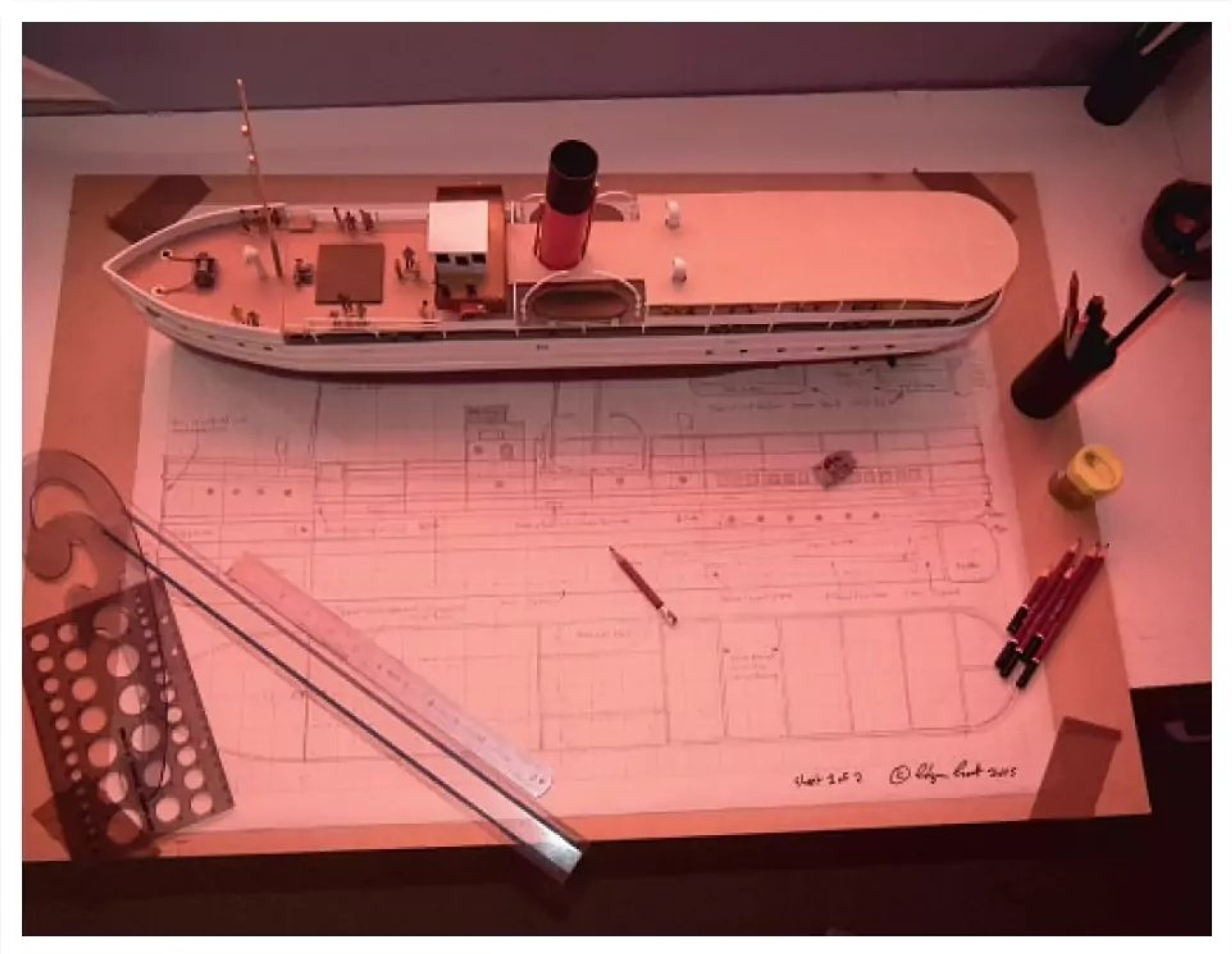
One excuse might be that putting a design on the internet is thought to be easier and ought to reach a wider audience. This has an element of truth, but as anyone who has tried to find information on the internet can tell you, there may be 'gold' out there, but it's usually mixed in with an awful lot of dross. There is also likely to be a 'page size' problem unless your full-sized model plan is small enough to fit onto the usual A4 piece of paper used in domestic printers.

You could try dividing up a plan into A4 sized pieces for the modeller to stick together but after once struggling to do this with sticky tape, which seemed to have a malevolent life of its own, only to find many of the lines on the plans failed to match up across the joints, I'll not recommend it. Yes, there are ways to get a larger plan printed out, but these are not always readily available to everyone.

"Possibly the strongest deterrent to those of you considering submitting a plan for the first time is the fear your drawings simply don't look as professional as the ones featured in magazines. Well, I'll let you into a little secret..."

Not good enough?

Possibly the strongest deterrent to those of you considering submitting a plan for the first time is the fear your drawings simply don't look as professional as the ones featured in magazines. Well, I'll let you into a little secret: none of the plans I've had published have left my drawing board looking as good as when finally put into print. True, the shapes may be the same, but the lettering, and often the layout, have been improved by the skilled draughtsman employed by the publisher. This suits me, since I don't have to worry about getting the plan into the perfect state for publication. Even so, I'll have to confess to doing a lot of rubbing out of pencil lines that are not quite right!



Simple drawing equipment.

Final reward, into print!

> *"All my plans are drawn up the 'old fashioned' way… It's not a reluctance to learn about CAD, more a deliberate choice"*

First attempts

My first attempt to draw a model plan for the editor (Vic Smeed, so you can guess how long ago that was) was a complete mess. Without a proper drawing board, tee-square and such like, my layout was all over the place and many parts out of shape.

With a young family, a cheap solution to this problem was the only answer. This turned out to be a sheet of hardboard 4 ft by 2 ft in size (pre-metric as we were at that time) and a sheet of Imperial graph paper which was divided into one-inch squares which were further subdivided into 1/10-inch squares. The use of graph paper allowed me to keep the model plan square and things properly aligned. This must have worked since I've used the same method ever since that first submission. The only change has been to sometimes use Metric A1 paper sizes.

Another confession

My models are usually started without drawing up the full size design first. With most models, a reduced scale (something like a quarter or fifth of the model's size) general layout drawing has been used. This is good enough to ensure that the design should work and internal items fit inside with no obvious difficulties.

Yes, problems can occur and result in changes having to be made but, quickly finding some wood to touch, I've yet to fail by producing a model that won't float and go. When, on the odd occasion, a model has proved less than satisfactory, and a drastic redesign has been required, I've always been glad that I hadn't wasted time and effort drawing up what appeared to be a 'perfect design' before building started. Therefore, all my plans are drawn up based on the final successful and thoroughly tested model, a safer and more honest process in my opinion.

What!!!

This might cause the devotes of CAD (Computer Aided Drawing) to splutter somewhat, since I have admitted that all my plans are drawn up the 'old fashioned' way with pencil on paper. It's the way I learnt some decades ago – there is an 'O level' certificate somewhere to that effect – and it has served me well in my professional life.

> *"Assuming your design would appeal to others, if you can draw accurate shapes with a pencil on paper and annotate your drawings legibly then there is every chance that you can get your model design published"*

But it's not a reluctance to learn about CAD, more a deliberate choice.

The time, effort and probably expense to acquire the skills to use a CAD program do not seem justified for a model or two each year. There is also the knowledge that the interval between models means that I would almost certainly have to spend time 'relearning' how to use the CAD program when starting a new model. I have enough trouble making this word processing program do just what I want at times!

So…

Assuming your design would appeal to others, if you can draw accurate shapes with a pencil on paper and annotate your drawings legibly then there is every chance that you can get your model design published. There is no need to go back to school and learn the CAD way to do this. ●

Editor's note

Firstly, my sincerest thanks to Glynn for putting out this much need nudge! Please note, however, that if you are considering submitting a plan for publication, we will also require an accompanying feature/build guide to be supplied alongside a reasonable quantity of digital photos (.jpgs, please!) illustrating the various stages of the construction process and methods/techniques employed, and, of course, a selection of pics showing the finished model (including some shots on the water if possible). If you've never contributed to the magazine before, I appreciate this may sound a little daunting, so please don't hesitate to get in touch with any questions. I will be delighted to hear from you!

PART 2

HMS *Express*

Phil Button completes this clever conversion and engages in some operational troubleshooting

Having last month tackled the hull conversion, running gear and electrical installation, build of the superstructure, lighting, painting, masts, and other initial detailing, we now move on…

Getting to grips with the handrails

A prominent feature of the Archer class boats is the many handrails around the superstructure and the outside of the deck. The majority of these can be made from 1.5mm and 2mm diameter brass rod, and later painted to represent stainless steel.

Most of my handrail assemblies were built up on the model using soft brass rod (bought from eBay as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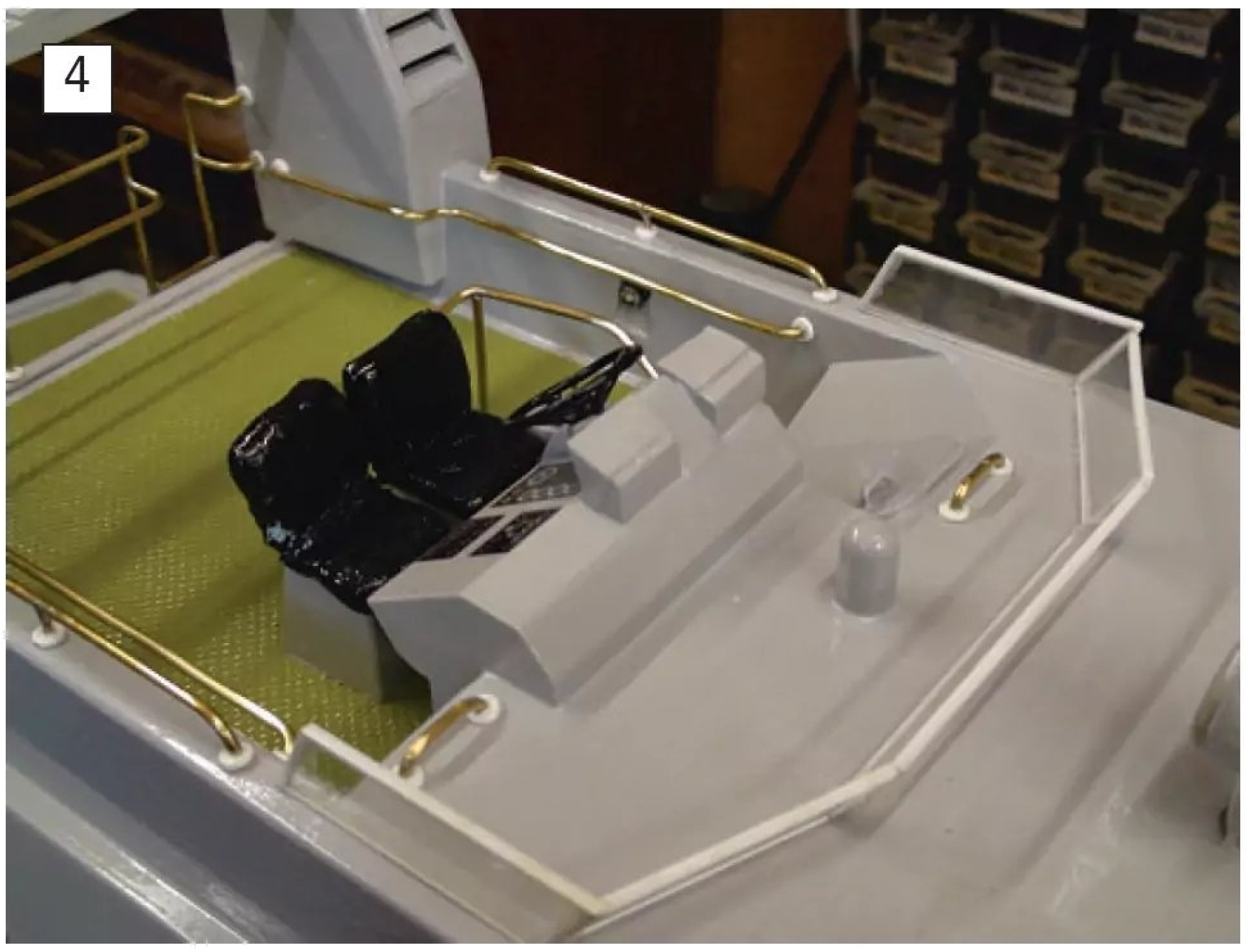

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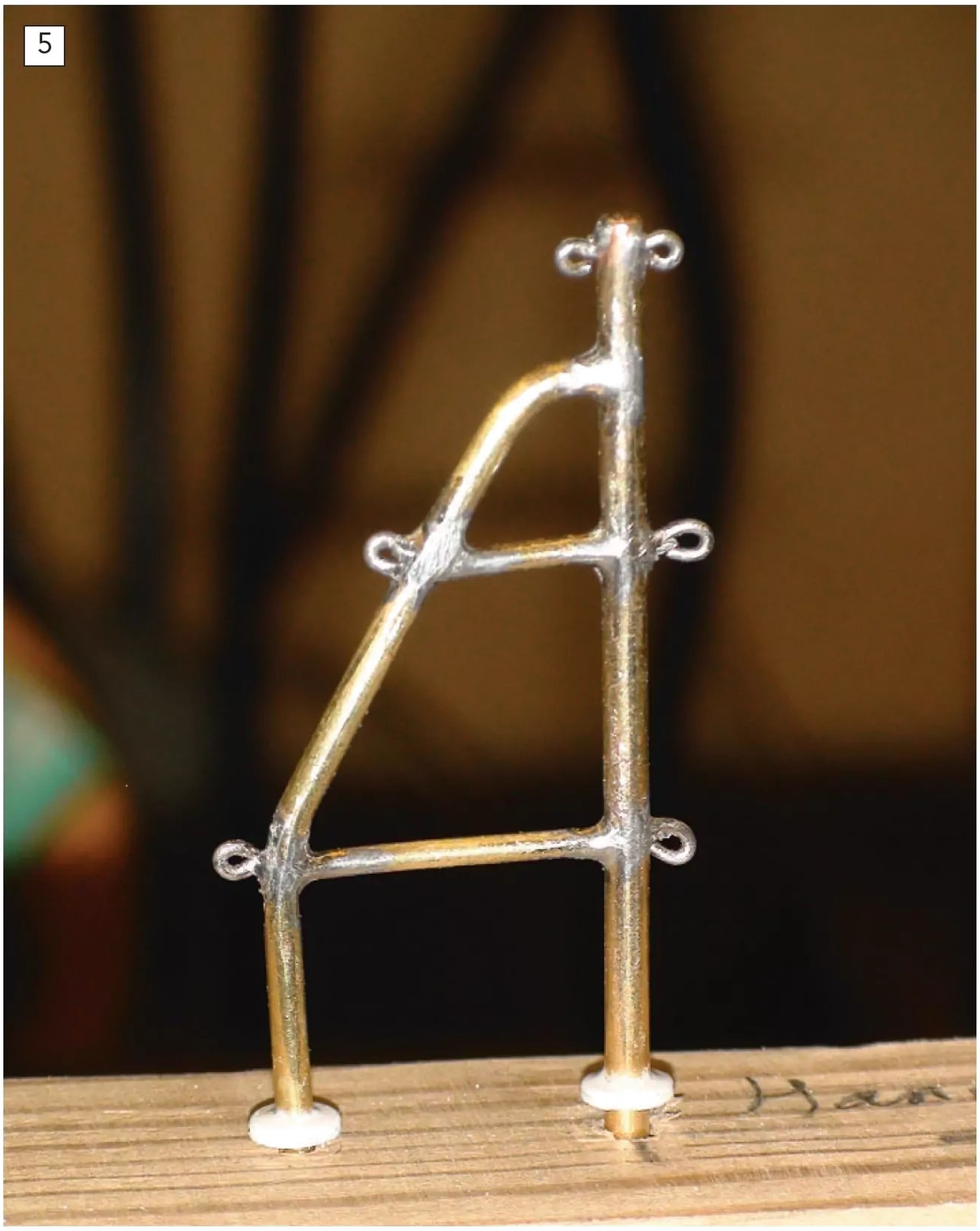

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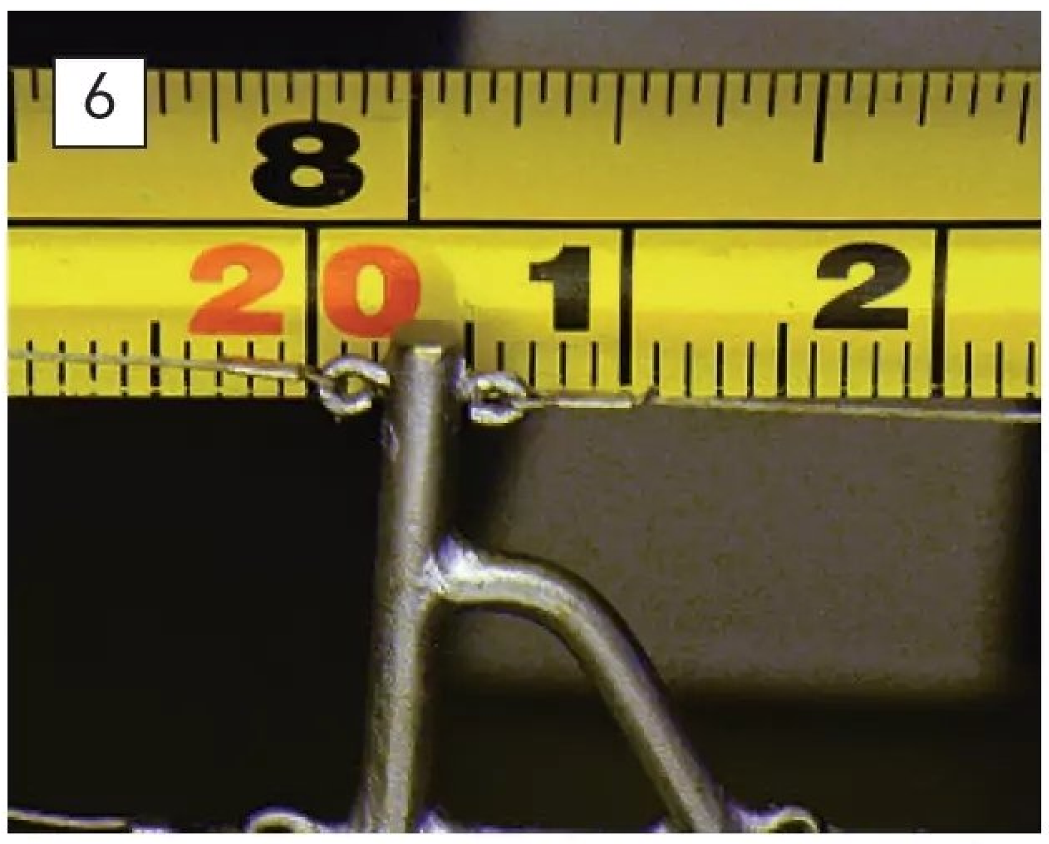


'jewellery findings'), bent to shape, fitted into pre-drilled holes in the cabin and soldered together. The handrail bases were simply punched out from 1mm styrene sheet and drilled to fit. **Photos 1–4** show some of my rails before cleaning up and painting.

Next came what I knew would be a tricky task, the handrails/support stanchions around the main deck. The main deck handrails for most areas on the original vessels comprised wire rope between multiple stanchions. There were two types of stanchions to be made up from brass rod: 12 simple rod stanchions and 12 braced rod stanchions (a braced stanchion is shown in **Photo 5**). Drilling the tiny holes through these stanchions for the steel ring eyes to carry the handrail wires was one of those jobs that I began to wish I'd never started. It seemed to take forever! The ring eyes on one stanchion can be seen in **Photo 5**.

Wire handrails were made up from 0.3mm diameter stranded steel fishing line, with a loop formed at one end through a ring eye on the stanchion. Each loop was held in place by a short length of aluminium micro-tubing, crimped to the wire. The wire was then threaded through the holes in the intermediate stanchions and terminated in another crimped loop through a second ring eye at the other end – a real fun job! **Photo 6** shows a close-up of the loops through the ring eyes with their crimped fittings, in which I've included a rule to give a better idea of scale.

Miscellaneous fittings

A range of other fittings, including hatch covers, ventilators, etc, was built up from styrene sheet, painted and fitted.

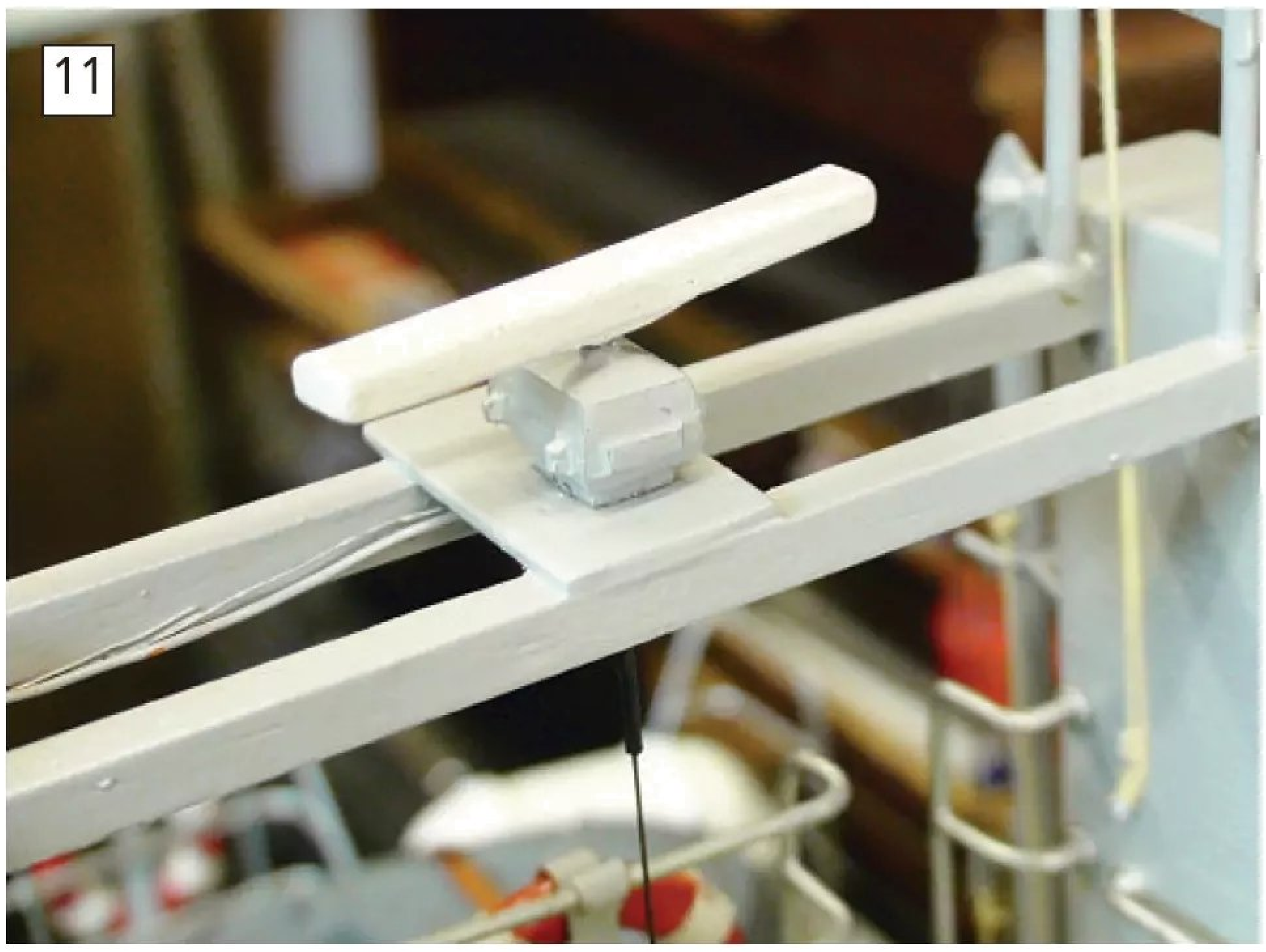
The forecastle was completed with anchors, chains and an anchor winch (see **Photo 7**).

On the after deck there's a structure comprising a box with a canvas cover that sits on the top of four engine room ventilators. The box and ventilators were made from 1.5mm styrene sheet and glued together. The 'canvas' tilt over the open top of the box was cut from a piece of reclaimed roller blind, painted grey, folded around the top of the box, and glued in place. **Photo 8** shows the finished box assembly complete with inflatable boat (a toy, sourced from eBay and modified) and many other after deck fittings.

"As a bit of added fun, they'll perhaps give those who don't read the magazine something to speculate about"

In the same shot, **Photo 8**, you will see the white ensign. So, how was this made? Well, after experimenting with thin paper inkjet printouts and iron-on fabric transfers, only to get stiff and rather unrealistic results, I then discovered a product on Amazon called 'PhotoFabric' from Blumenthal Lansing in the USA. This is a paper-backed silk fabric that can be run through an inkjet printer, meaning that the digitally created designs printed out on it can be cut to size and simply removed from the backing ready for use. The only (minor!) problem I found was that with the fabric being so fine it frayed very easily, but this was fixed by making up a 50/50 mix of fabric glue and water and painting the outside 1mm or so of the flag with it. Flags were then fitted to their halliards using the undiluted fabric glue.

A number of life raft containers were made up by using the plastic casing from a child's toy called a Kinder Egg, using styrene tubing and other sections as shown in the photomontage in **Photo 9**. (Unfortunately, the design for the egg has changed and the newer cases are nowhere near as useful).



With a bit of filling and a coat of paint, a passable imitation of the real thing was the result.

Photo 10 shows the completed upper conning position from astern. At the after end of the conning position is a radar scanner, fitted to a platform provided for it below the mast. This was bought from Marks Model Bits (www.marksmodelbits.com) and rotated using a long wire from a drive motor inside the cabin. **Photo 11** shows the scanner with its drive wire visible below the mounting platform.

After applying a number of transfers, I had now completed all the detail that I thought I ought to put on the model - after all, it's got to stand up to being used and fine details are easily broken (especially by me!). However, when I looked at the empty starboard flag halliard, it looked a bit bare when compared with the Welsh flag to port. Only one thing for it – add some signal flags to starboard. So, I printed out a further set of flags and fitted the letters P, H, I and L to the halliard (see **Photo 12**) – yes, they spell out my name, and as a bit of added fun, they'll perhaps give those who don't read the magazine something to speculate about!

"Once well out on the lake and clear of other vessels, the throttle was opened to maximum and she planed beautifully, with stable handling even at full power. Then came a problem…"

Maiden voyage

With the model near enough complete, she ready to be introduced to the water...

I had planned to take her to Derby in February 2017 to join the Alvaston Pirates MBC in supporting the Alvaston Park Star Gazing event. As might be expected, this involves night sailing and HMS *Express* is one of only a few of my boats fitted with a lighting installation. Considering she'd never been in the water before (not even for ballasting!) though, first it was off to the domestic test tank (*a.k.a.* the bath) to check her out. She floated at around the correct waterline, without the need for any additional ballast at all (see **Photo 13**). A simple check of stability by tilting the model to around 30degrees proved difficult, as she didn't really want to tilt – always a good sign! When let go, she snapped back to an even keel immediately.

I then suffered a sort of brainstorm, deciding it would be a good idea to test the power units while she was still in the bath to see if the whole power train worked. The boat was restrained with my left hand while I opened the throttle with my right. At full power, the water frantically tried to escape the bath, and the boat was hard to keep hold of, too. Soaked? Yes. But smiling – she should be good on the lake!

On the morning of the Stargazing Night, HMS *Express* was taken down to the lake for her first 'sea trials' in front of some of the Pirates. I don't usually like to have an audience for first trials as I've found from bitter experience that the bigger the crowd, the less likely a successful outcome is! But, after checking that all controls worked correctly following switch on, she was placed in the water and gently motored away while I familiarised myself with the rudder operation. All seemed well at low speeds when going forwards but going astern proved more of a challenge as she didn't answer to the helm very well (not unusual, I have to say) and tended to ship water due to the flat transom. So, mental note; as always, take care when going astern!

14

15

Once well out on the lake and clear of other vessels, the throttle was opened to maximum and she planed beautifully, with stable handling even at full power. Then came a problem (as seems to be normal for me!). After around 20-30 seconds at full power, the speed dropped off to about half throttle and the throttle stick on the transmitter turned into an on/off switch! On the upside, at least she didn't have to be rescued, remaining driveable. Trying to go astern (to see if the same effect occurred going that way) gave all manner of odd results, too.

On recovering the model, the power was switched off and back on again and the test repeated, with exactly the same results. I then tried a change of connections of the two ESCs to an unused channel ('elevators') on the Orange 2.4GHz receiver and everything seemed to behave more or less as it should, without the on/off control after a short time but still with astern only working when it felt like it.

One wag among the assembled Pirates told me that it was no wonder that the boat would not behave as she had 'PIG3' written on both sides – his interpretation of her pennant number, 'P163'!

However, as the boat was needed that night and could still be driven, even if not easily owing to the swapped throttle channel, I decided to leave further investigation until after returning home.

"After much experimentation, I discovered that the problem was actually caused by the speed controllers doing exactly what they were meant to do!"

Following a fun evening of entertaining the crowds in the dark (see **Photo 14**), I returned home to Norfolk and carried out a further series of tests to try to isolate the problem. I first thought that maybe the Orange receiver throttle channel was not compatible with the ESCs in some way (but, strangely, the 'elevator' channel was!). A change to a spare Orange receiver made no difference at all, so it seemed to me to be a peculiarity of those receivers, as this effect had also shown up on another of my boats.

As I find I cannot easily control a boat with both rudder and throttle on the same stick and have become used to the throttle being on the left-hand stick with all my other models, I therefore changed the radio receiver to a 40MHz unit that I had in stock and set it up to work with a matching transmitter. All bench tests were passed with flying colours, so I was excited to see what happened next time she went out on the water.

On the water (again!)

Since the 'new' 40MHz radio installation had not been tried out on the water, HMS Express was taken to the boating lake at Sheringham in June 2017 for further tests. She motored away from the lakeside in fine style, with full control of the speed until I tried full throttle. At full power, she was fast, but only for around 20-30 seconds and then the power reduced to about 50% and the throttle stick became an on/off switch again. Going astern worked as I'd hoped though, with no intermittent glitches.

With the model returned to shore, switching the power off and back on again reset the problem – until full throttle was again used. Obviously (or so I assumed at the time), the 'fault' must lie in the brushless speed controllers.

After much experimentation, I discovered that the problem was actually caused by the speed controllers doing exactly what they were meant to do! The batteries being used were nominally (according to their labels) capable of 20C, meaning that they should easily deliver 20 times their rating of 5200mAh, or around 100amps. The motors didn't pull anywhere near that sort of current, but the battery voltage at full throttle was dropping to a level at which the low voltage protection built into the speed controllers reduced the power to the motors in order to protect the batteries – Chinese batteries obviously not performing as advertised!

To confirm this was the cause (as I was having a similar problem with the same batteries in another boat), I made a change to a second set of batteries that I knew would not struggle to deliver current to the motors. With these installed, the model went like the proverbial rocket at full throttle, but, once again, not for very long, as one of the motors then burned out (see Photo 15) taking the speed controller with it – ever felt you just can't win?

Both motors have now been changed to ones of similar size and kV rating but with a higher current rating – 'problem' resolved!

Express results

This model has given me a great deal of pleasure during its design and construction and has advanced my modelling skills in respect of putting on more detail than for any of my other boats. The fact that it almost worked 'straight out of the builder's yard' was a surprise (to me, at least!), although I still wonder what went wrong with the radio control fit using my 'standard' 2.4GHz radio control set up – very odd, that!

HMS *Express* now sails like a dream, is a pleasure to operate on the lake and always attracts attention, especially in the dark with her lights on. **Photos 16 and 17** show the fully completed model ready to sail and under way at slow ahead on the boating lake at Sheringham.

I'm a great believer in that old adage "*'If at first you don't succeed; try, try again*". It really is the end result that counts, and besides, you always learn far more from problems encountered along the way than you do from easily obtained success!

Problem solving postscript

The story isn't quite over, because I really felt the need to further investigate the 2.4GHz radio 'problem' that had given such odd results when trying to use a 'centre zero' throttle on the left-hand stick. This was affecting a number of my boats and making life difficult, as I'd had to change some of them over to 27MHz or 40MHz control, and, as a result, always remember to do a frequency check at the lake before sailing.

Paul Freshney, during his tenure as editor of 'Model Boats', had suggested that the problem resulted from using a transmitter that had been designed for "*aeroplanes first, helicopters second and boats not at all!*" (his words). This means that the electronics for the throttle channel on some modern transmitters is expecting to see 'forwards only' and gets horribly confused when we unreasonable model boaters try to use centre zero to give us forwards and reverse!

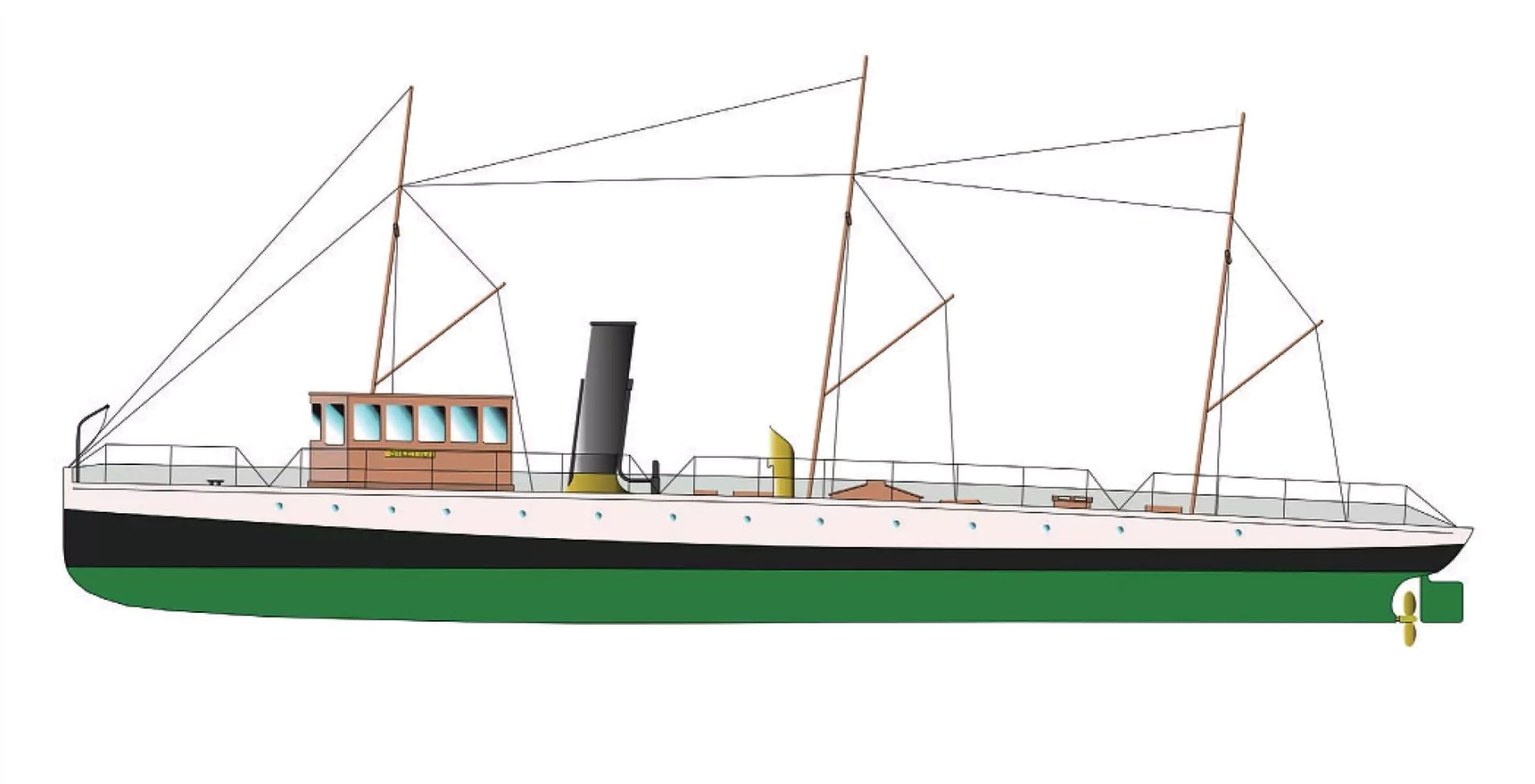
The 2.4GHz transmitter that I use for most of my non-steam models is a Blade HP6DSM, and I am used to having the throttle on the left-hand stick. This unit is Spektrum DSM2 compatible, so it will work with my Orange receivers but was specifically designed for helicopter use, where the throttle is obviously expecting forwards only. Although it is possible to make the left-hand stick mechanically centre zero, I reasoned that the 'clever' electronics could not cope with this. However, I had already found that the right-hand stick ('elevators' in aircraft speak) worked fine on throttle duty, as it was expecting to see centre zero.

16

17

"It worked!"

Simple, I thought – just open up the transmitter, unplug the throttle and elevator potentiometers from the control board and change them over. Wrong! This wasn't possible, as all the potentiometer connections are combined into a common multi-pin plug and can't be separated. However, the leads are plugged in at the potentiometer end, so I swapped them over. It worked! Now all I have remember is to connect the electronic speed controller lead to the 'elevators' channel, and then all is well. ●



Stiletto in profile.

Stiletto

Looking for your next challenge? **John Parker** suggests a fascinating steam yacht, which could be modelled in either race or naval guise, you may fancy taking a stab at…

Stiletto was an historic steam yacht built by the Herreshoff Manufacturing Company of Bristol, Rhode Island, USA in 1885. Better known for its highly successful series of Admiral's Cup racing yachts, Herreshoff's built the *Stiletto* as a private venture to showcase its mastery of light weight, low-drag construction, while keeping an eye on her potential as a torpedo boat for the US Navy. In a career that spanned some 26 years, this steam yacht proved herself in both civil and military roles and, especially in the latter, exerted an influence that far outlived her scrapping in 1911.

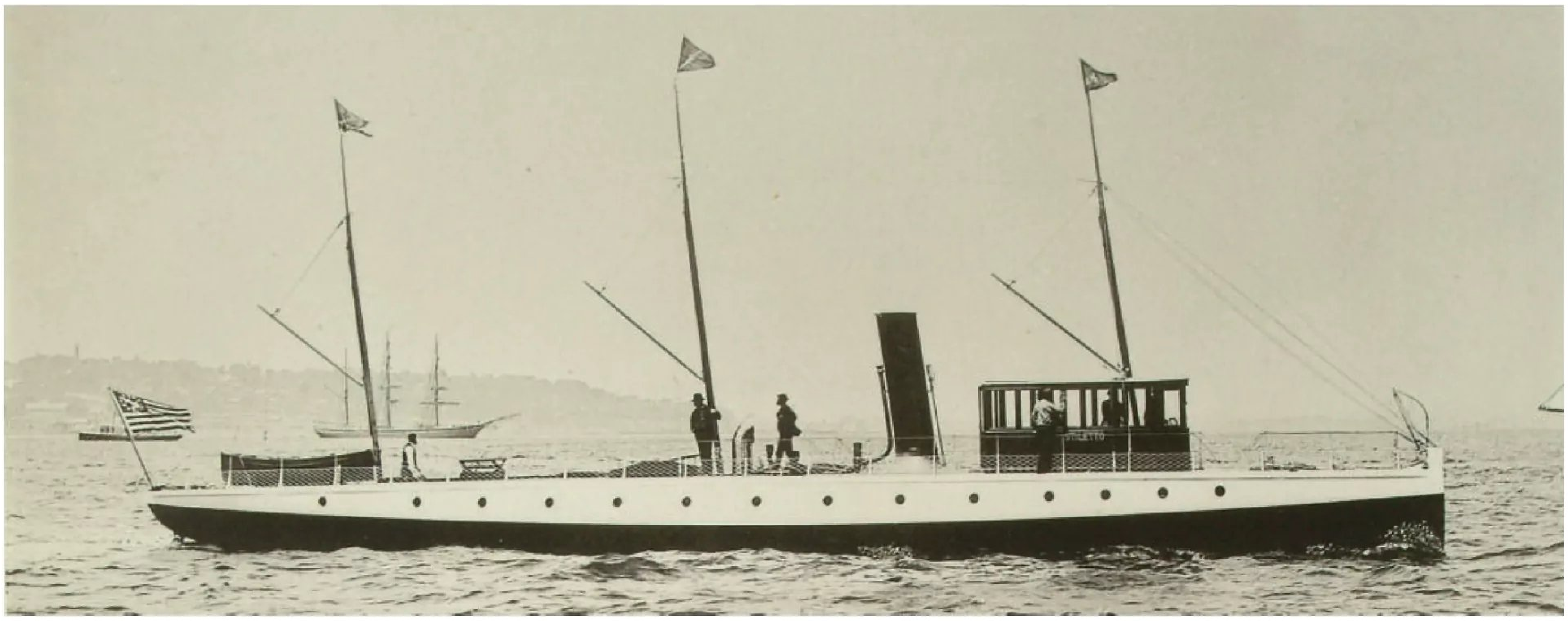
"In a career that spanned some 26 years, this steam yacht proved herself in both civil and military roles"

Nathaneal Green Herreshoff (image courtesy of Wikipedia).

Herreshoff Manufacturing

Brothers Nathanael Greene Herreshoff and John Brown Herreshoff founded the Herreshoff Manufacturing Company (HMCo.) in 1878. Naval architect and mechanical engineer 'Nat' provided the design expertise, whilst John, who was blind, looked after all other aspects of the business, which soon grew to have some 200-400 employees. This was a time when scientific methodology was superseding the old empirical design methods and Nat was at the forefront, producing a long line of Admiral's Cup winners from 1893-1920 while also maintaining currency in steam propulsion.

The company's location on Rhode Island was not far from the Navy's Torpedo Station at Newport, where military personnel soon became familiar with Herreshoff craft being tested nearby. This led to



Stiletto as she appeared in 1885 (Wikipedia sourced image)..

Hereshoff's building the US Navy's first torpedo boat, the *Lightning*, for evaluation. This vessel was armed by a 'spar torpedo', basically a mine carried at the end of a long spar that extended from the bow of the boat. Clearly something better was required, something that didn't risk destruction of the attacking boat by its own weapon, but the 'automobile' or self-propelled torpedo, and the craft that was to carry it, were still a few years away.

Stiletto specifications

Stiletto was a slender wooden craft, 94ft (28.65m) long with a beam of 11ft 6ins (3.51m) that displaced 28 short tons (25.4 tonnes) and was powered by a two-cylinder annular valve inverted compound steam engine of 359 indicated horsepower (268kW), running at a maximum boiler pressure of 150 psi (10.3 bar) and carrying 4 US tons (3.6 tonnes) of coal as fuel. Three masts that could carry auxiliary sails gave her the appearance of a miniature schooner. A line of portholes penetrated the full length of the hull, which was planked in pine and had a notable 'tumblehome', or inwards slant, to the sides and a slightly humped deck. Hull framing was white oak with steel ribs, and the deck was planked all over in white pine. A single shaft mounted almost at the bottom of the keel drove a 4ft (1220mm) 4-bladed propeller at a maximum of 400rpm.

A stately windowed cabin on the fore deck provided a pilothouse and lounge, and only the funnel, a ventilator, skylights and some hatches adorned the after deck. As a civilian vessel, her intended use was to transport her well-heeled owner from his country retreat to his place of business in grand style, luxury and speed. Below the pilothouse was a well-appointed saloon, but the normal complement of six crew, when they weren't performing navigation or looking after the engine, were accommodated in simple tiered bunks at the extreme stern.

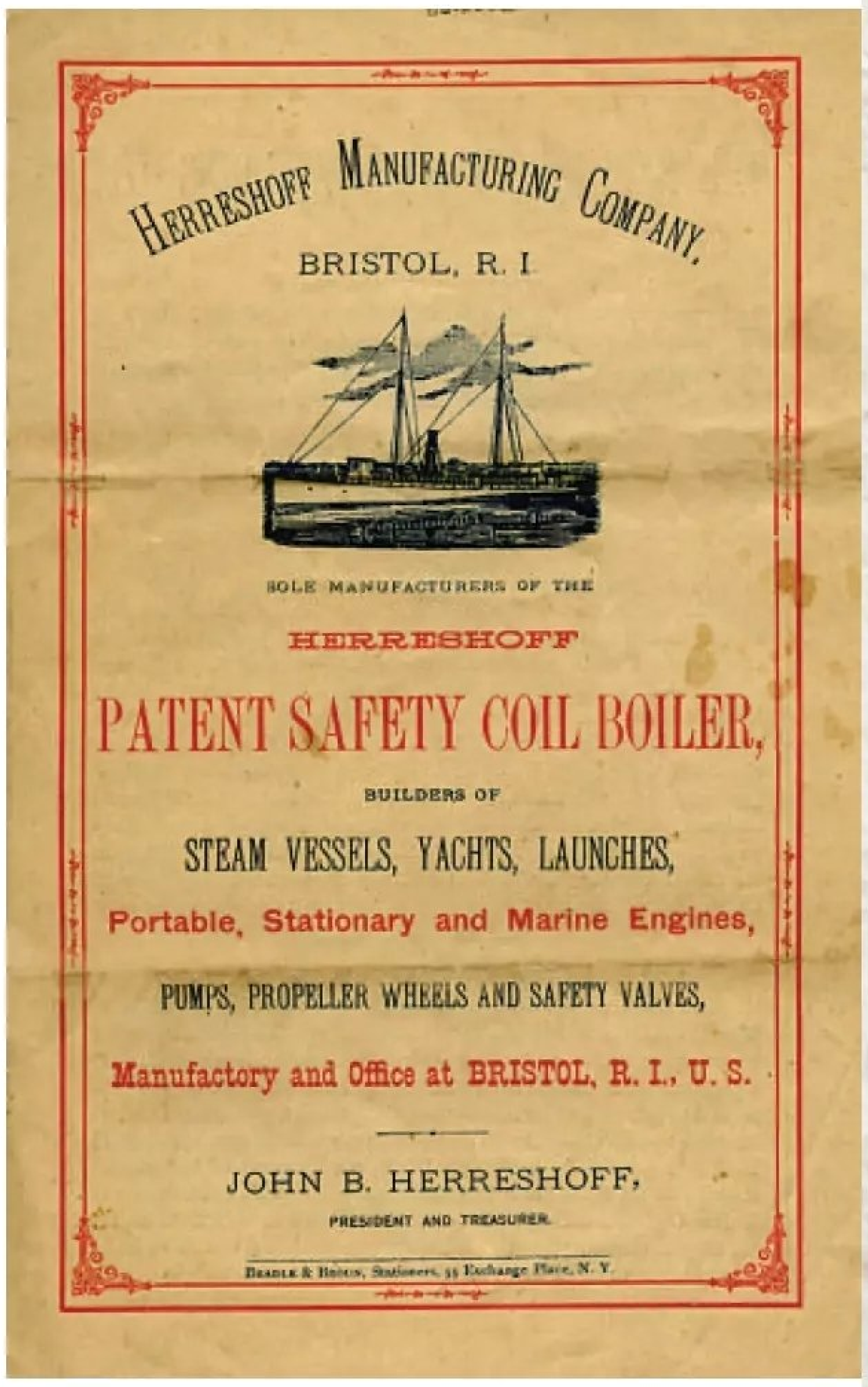
"Shortly after her launching in 1885, Stiletto was involved in an episode that made headlines around the country…"

Stiletto gains fame

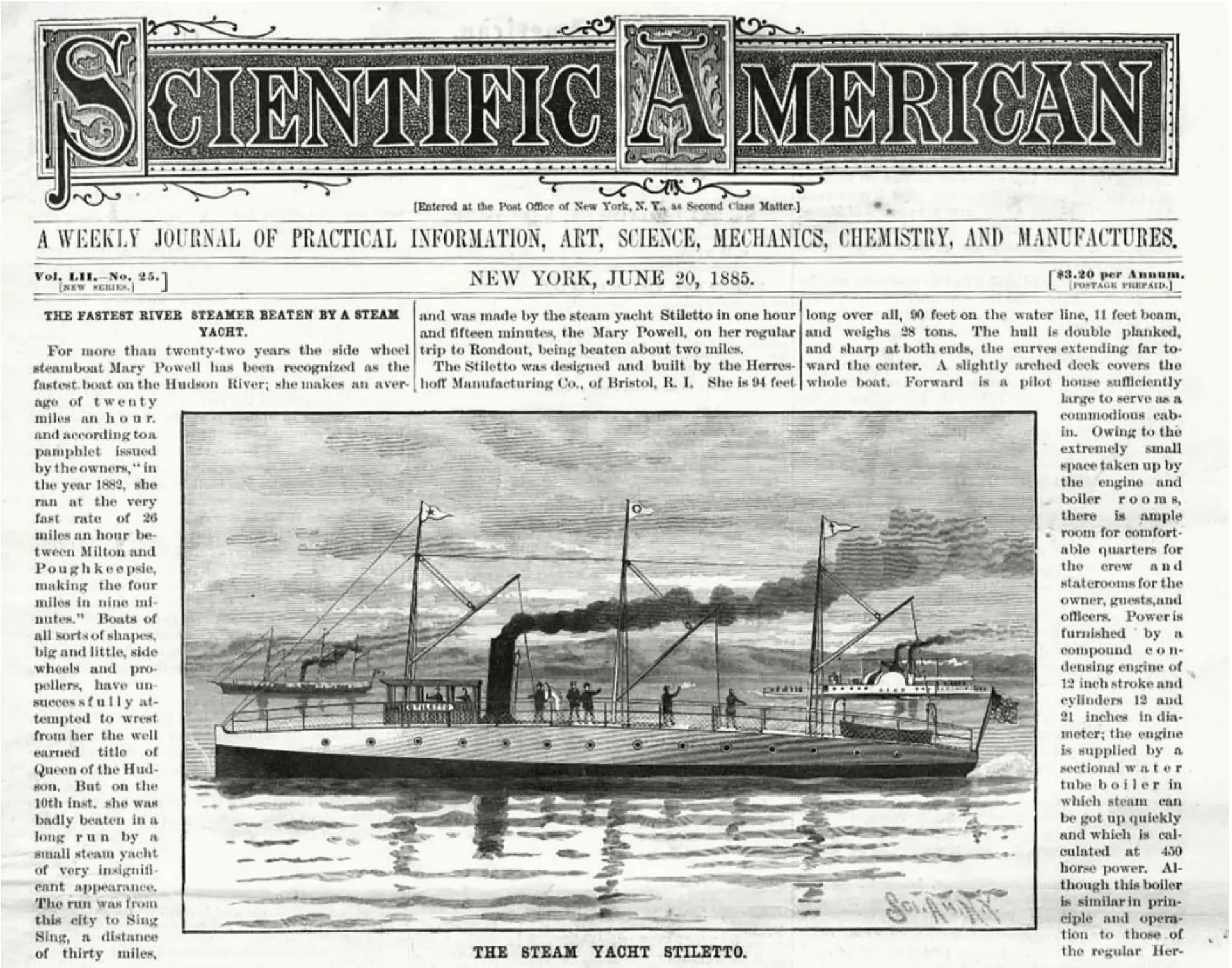
Shortly after her launching in 1885, *Stiletto* was involved in an episode that made headlines around the country when she took on the famous paddle steamer *Mary Powell*, known as the fastest boat on the Hudson River, in a race. In its June 20, 1885, edition, *Scientific American* magazine reported on how, on June 10, the 'Queen of the Hudson' was "*badly beaten in a long run by a small steam yacht of very insignificant appearance*". To add to *Stiletto*'s fame, she outpaced another boat known for its speed, the *Atalanta*, on the very next day. Running light and with a clean hull, *Stiletto* was credited with a speed of 26.4 knots and became regarded as one of the fastest steamboats in the world.

Purchase by the Navy

In March 1887 *Stiletto* was purchased by the US Navy for conversion into a torpedo boat, entering service as the USS *Stiletto* at the Naval Torpedo Station in July 1887. She became the US Navy's first torpedo boat to be armed with what, by the modern definition of such a weapon, we'd term a torpedo – a self-propelled type that was known as the Howell. The main visible changes to *Stiletto* following conversion were the result of the removal of her masts, the replacement of her pilothouse with a tiny, squat conning tower, and, later, the fitment of a single forward-firing torpedo tube in the bow and a second trainable tube mounted on the aft deck.



A promotional brochure for the Herreshoff Manufacturing Company.



SCIENTIFIC AMERICAN

[Entered at the Post Office of New York, N. Y., as Second Class Matter.]

A WEEKLY JOURNAL OF PRACTICAL INFORMATION, ART, SCIENCE, MECHANICS, CHEMISTRY, AND MANUFACTURES.

Vol. LII.—No. 25. [NEW SERIES.] NEW YORK, JUNE 20, 1885. [$3.20 per Annum. [POSTAGE PREPAID.]

THE FASTEST RIVER STEAMER BEATEN BY A STEAM YACHT.

For more than twenty-two years the side wheel steamboat Mary Powell has been recognized as the fastest boat on the Hudson River; she makes an average of twenty miles an hour, and according to a pamphlet issued by the owners, "in the year 1882, she ran at the very fast rate of 26 miles an hour between Milton and Poughkeepsie, making the four miles in nine minutes." Boats of all sorts of shapes, big and little, side wheels and propellers, have unsuccessfully attempted to wrest from her the well earned title of Queen of the Hudson. But on the 10th inst. she was badly beaten in a long run by a small steam yacht of very insignificant appearance. The run was from this city to Sing Sing, a distance of thirty miles, and was made by the steam yacht Stiletto in one hour and fifteen minutes, the Mary Powell, on her regular trip to Rondout, being beaten about two miles.

The Stiletto was designed and built by the Herreshoff Manufacturing Co., of Bristol, R. I. She is 94 feet long over all, 90 feet on the water line, 11 feet beam, and weighs 28 tons. The hull is double planked, and sharp at both ends, the curves extending far toward the center. A slightly arched deck covers the whole boat. Forward is a pilot house sufficiently large to serve as a commodious cabin. Owing to the extremely small space taken up by the engine and boiler rooms, there is ample room for comfortable quarters for the crew and staterooms for the owner, guests, and officers. Power is furnished by a compound condensing engine of 12 inch stroke and cylinders 12 and 21 inches in diameter; the engine is supplied by a sectional water tube boiler in which steam can be got up quickly and which is calculated at 450 horse power. Although this boiler is similar in principle and operation to those of the regular Her-

THE STEAM YACHT STILETTO.

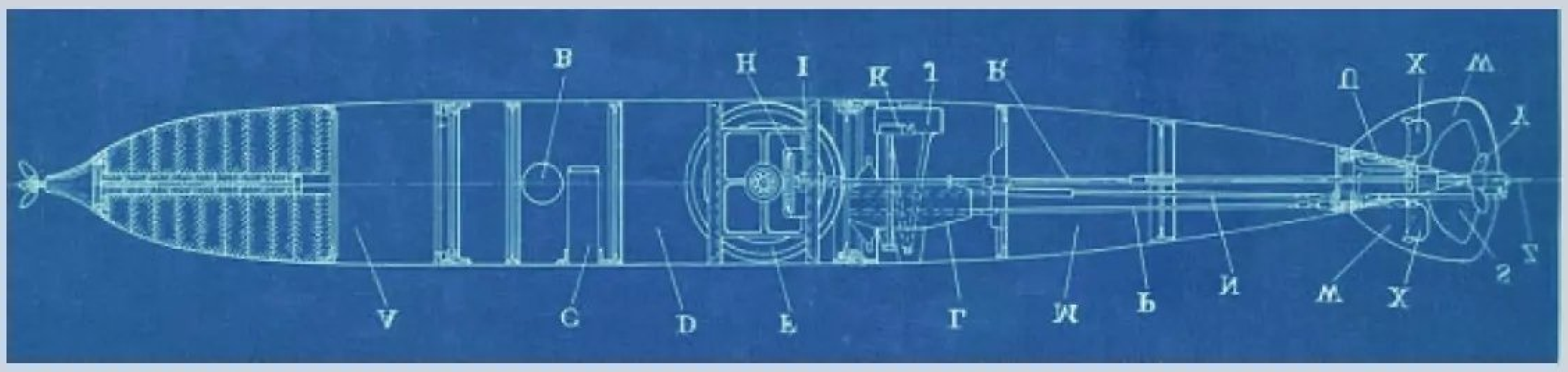
Scientific American reports on the Stiletto, June 20, 1885 (Internet archive – Scientific American magazine)

"In March 1887 Stiletto was purchased by the US Navy for conversion… She became the US Navy's first torpedo boat to be armed with what, by the modern definition of such a weapon, we'd term a torpedo"

Photos of the time show the USS *Stiletto* performing as a test bed in the development of several experimental torpedo types. The Howell torpedo, for example, was powered by a flywheel that had to be spun up to speed before launching and is also of interest for having two small opposite-rotation propellers, one each side of the tail rudder, rather than the concentric arrangement later adopted. Interestingly, only two original Howell torpedoes survived in museums until a third was found on the seabed and recovered in 2013! The Bliss was another early torpedo type that the *Stiletto* test fired, but it was the Whitehead type that ultimately won out.

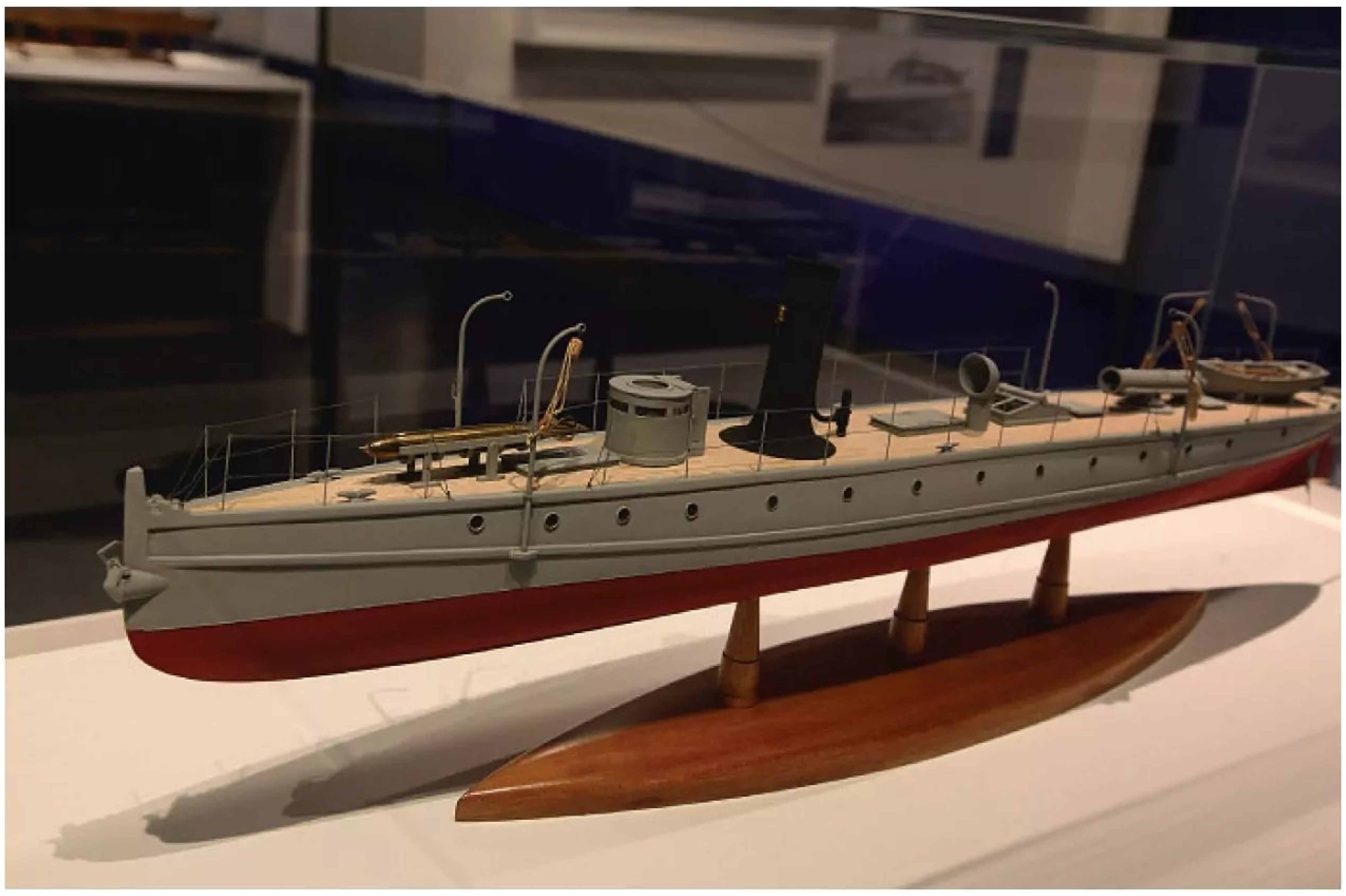
The USS *Stiletto* was struck from the Navy list and scrapped in 1911, having served long and well as a floating test bed, helping to provide the operational doctrine for the utilisation of torpedo boats within the fleet. Meanwhile, Nat Herreshoff had lost his steam licence in 1888 after he held a safety valve shut to ensure the boat he was testing reached its design speed. The boiler exploded, fatally injuring a crew member. This was especially ironic, since the greater safety of its boilers had always been something the Herreshoffs laid claim to.

USS Stiletto model in profile (Image courtesy of Rama via Wikipedia).



▲ Howell torpedo internals (US Navy)

◄ A Howell torpedo (US Navy).



A general view of the model of USS Stiletto at the MIT museum (Image courtesy of Rama via Wikipedia).

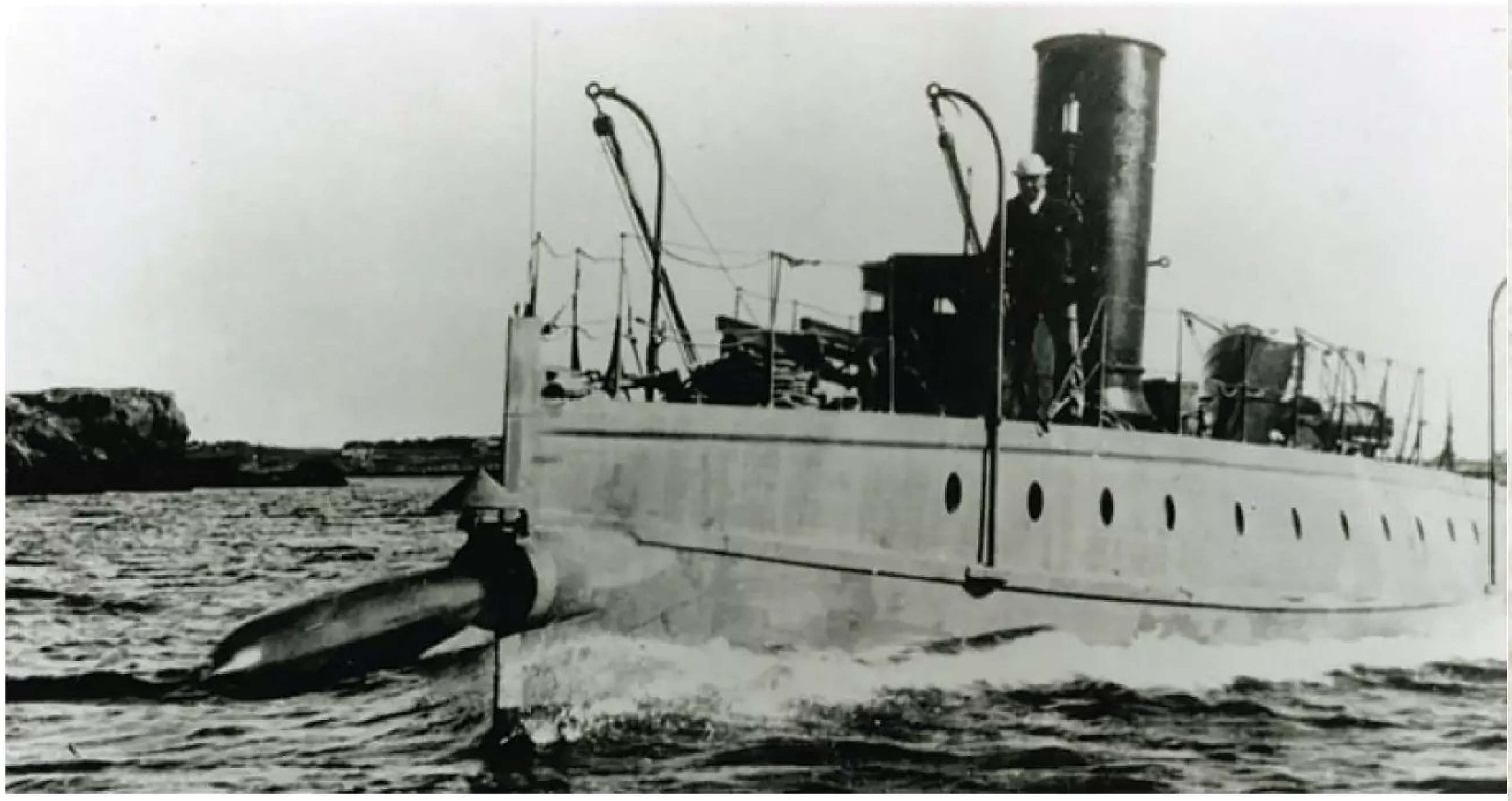
A model of the *Stiletto*

I have long thought the *Stiletto*, with her rakish lines and unusual features, would make a superb model – in fact, this article is an outgrowth of the research I've undertaken specifically for this purpose. As I know of no kits, in any scale, either for display or R/C operation, the model would have to be scratch built, but a potential stumbling block was recently removed thanks to drawings of the full-size vessel having become available from the Herreshoff Maritime Museum: https://mitmuseum.mit.edu/collections/object/HH.5.09732?query=Stiletto&resultIndex=1. These could be traced, and further hull sections produced by interpolating the five known ones to create a set of frame shapes to facilitate hull planking.

But a note of caution… *Stiletto's* slender hull will have low form stability due to its tumblehome cross section, resembling a floating log that will tend to roll readily. It's more important than ever therefore that the centre of gravity is kept very low by ensuring all equipment is mounted well down in the hull and the superstructure is kept as light as possible. Helping in this respect is that there's not much in the way of superstructure to keep light. An allied issue is the possibility of torque reaction to the single prop; the model may tend to lean in the opposite direction to the prop's rotation, an effect that will be all the more noticeable because of the tall masts.

"I have long thought the Stiletto, with her rakish lines and unusual features, would make a superb model… But a note of caution…"

Perhaps, then, the torpedo boat version, with its squatter superstructure and lack of masts, may be the safer choice. This would also offer the possibility of incorporating a working torpedo, which could be launched from the bow tube, there being lots of room in the hull for the necessary ejection mechanism. For realism, a smoke generator would really liven up that big funnel. To provide sufficient room in the narrow, pinched-in hull, I would suggest a scale of 1:20 to give the model a size of 1433mm x 176mm, with an estimated displacement of 4.45kg, or alternatively 1:24 scale, resulting in a model 1134mm x 146mm, with an estimated displacement of 3.25kg. ●



The USS Stiletto fires a Howell torpedo from its bow tube (Image courtesy of US Navy).

BOILER ROOM

Richard Simpson begins a transparent account of a model built with the intent of being steam-powered and radio-controlled but now kept behind glass on static display…

Wandering slightly off track in terms of the usual topics covered in Boiler Room perhaps, let me tell you about a model I constructed from the Mountfleet kit for the *Ben Ain*, an Irish Sea coaster, built in 1924 by The Manchester Drydocks Company in Ellesmere Port. Originally named the *Doris Thomas*, and then the *Dennis Head*, she was eventually bought and renamed the *Ben Ain* by The Ramsey Steamship Company in 1939.

I think the story of this build (which will be told in three instalments, starting in this issue and wrapping up in the January edition) is well worth recounting, as not only are there some useful lessons to be learnt but it also gives me the opportunity to show just what can be done with a kit if you decide to throw everything bar the kitchen sink at it! Also of interest is the fact that I started this project in January of 2004, so it's been just over 20 years in the making and naturally my own modelling and engineering skills have continued to develop along

> *"I think the story of what went right, and wrong, here is well worth recounting, as not only are there some useful lessons to be learnt but it also gives me the opportunity to show just what can be done with a kit if you decide to throw everything bar the kitchen sink at it!"*

the way. This has, therefore, to be the all-time example of looking at a finished project and thinking "*I could have done that better*!"

I started this model with the intention of powering it by steam, and put a lot of thought into the operating philosophy and the internal steam plant layout, with the following aims:

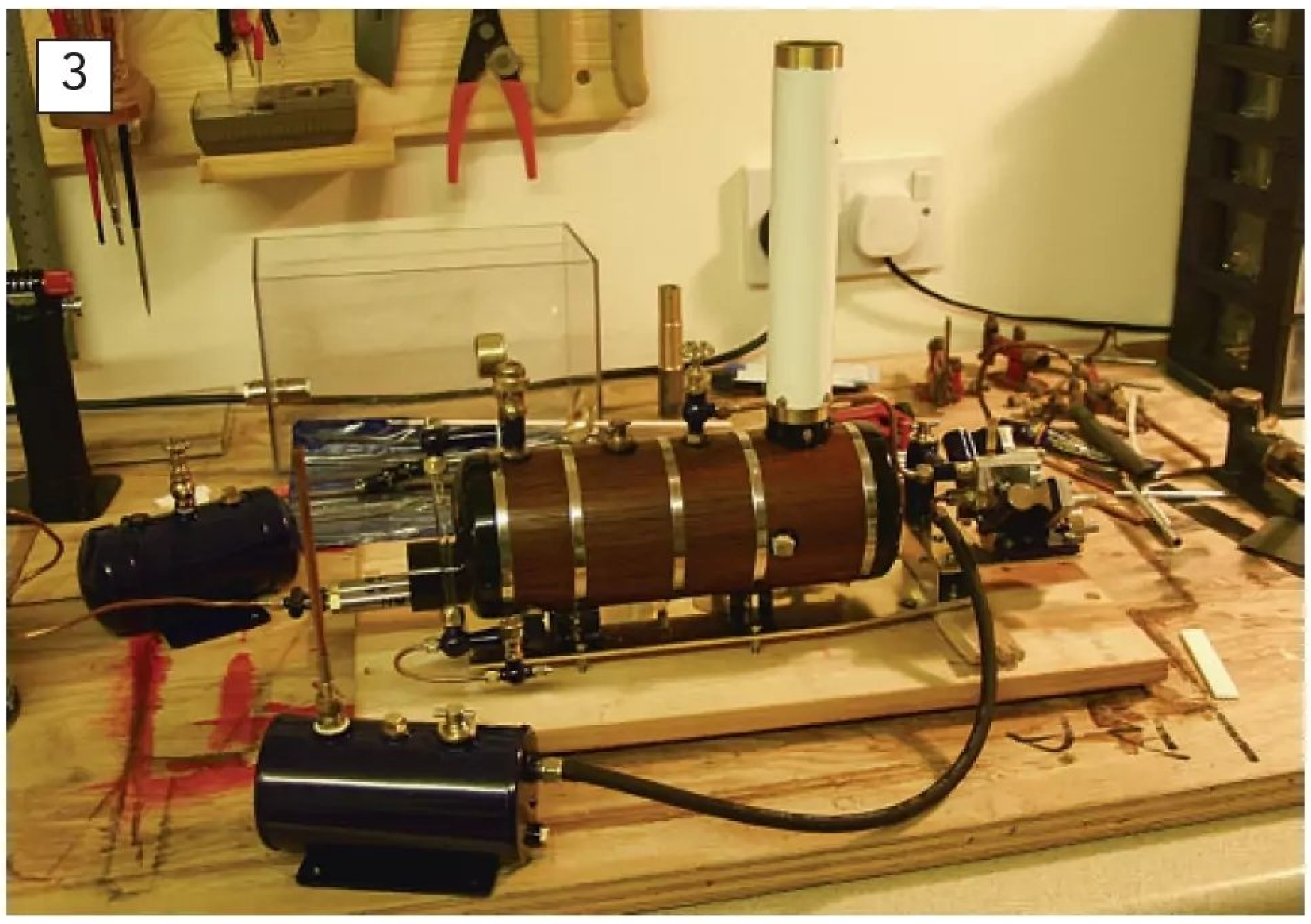
- Operation duration of 20 to 25 minutes on the water.
- Ability to fill the boiler under pressure but not automatically – so a feed tank and manual feed pump would need to be included.
- The creation of as much ventilation as possible throughout the hull.
- The electronics being kept as far away as possible from the boiler.
- Gas conservation – so an electronic gas control valve would be included.
- The use of 'V' twin oscillator for the compact arrangement, hence I would need to get the engine as far aft as possible. The boiler flue still wasn't going to be below the funnel though, so would require modification.
- Getting the separator tank and the gas tank close enough to each other to take advantage of the spare waste heat from the separator to warm the gas tank.
- The use of a refillable gas tank, because space would be limited.
- The ability to fill the gas tank in situ but vent it outside the hull.
- A bridge unit built as a removeable section to provide easy access to the equipment below.

1

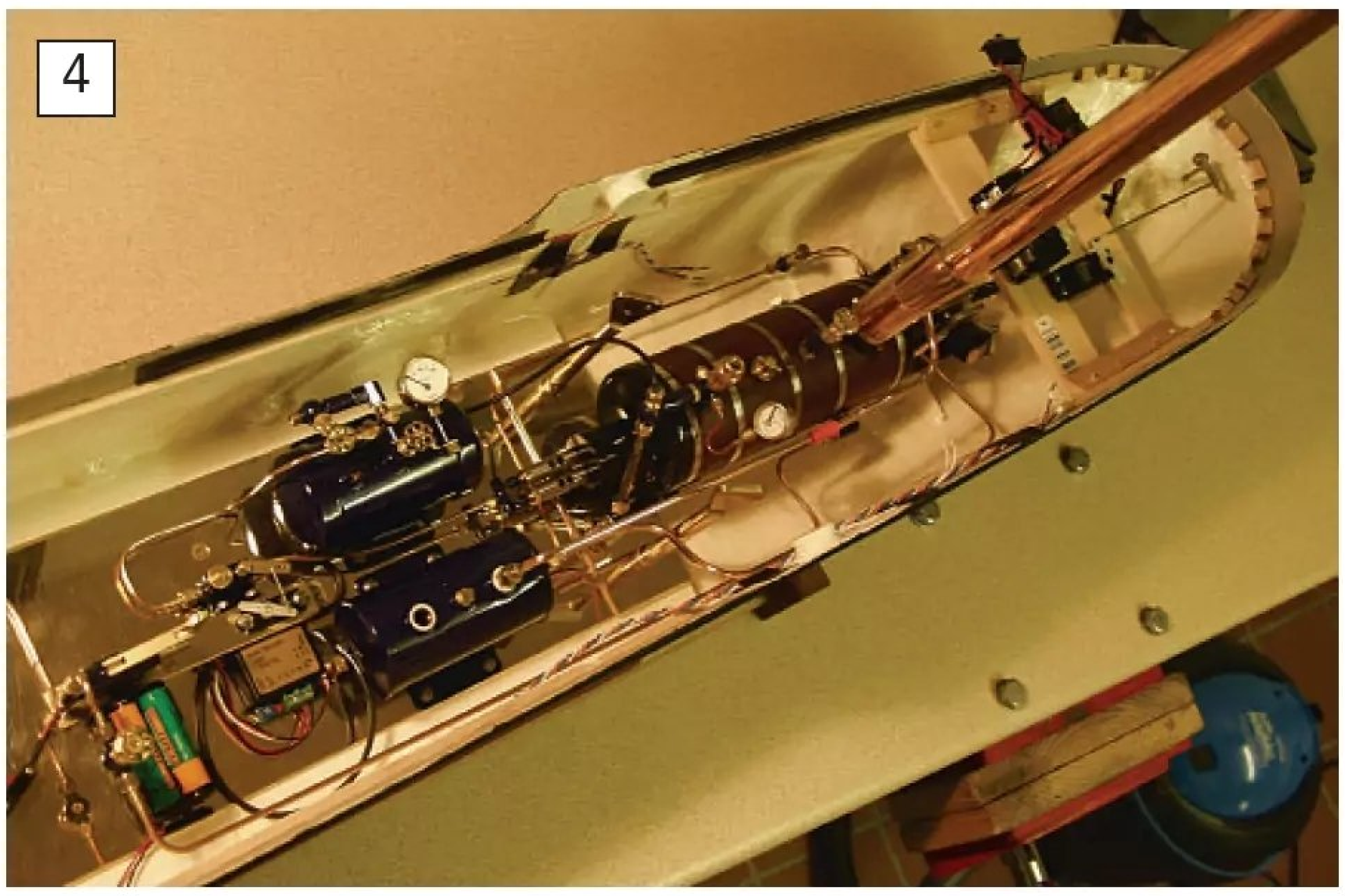
The stern frame faired in nicely with car body filler, but the kit was supplied with a rudder that had the rudder stock out of alignment with the lower pintle. Richard moved the lower pintle to align it with the stock so that it rotated smoothly.

2

The kit supplied hull did include some rivet detailing, but Richard wanted the entire hull to be similarly detailed. After testing out a few different ideas, blobs of cyanoacrylate glue on top of primer seemed to work best. It was a long and tedious job though.



It's always a good idea to bench test a plant before fitting it, just to make sure everything works as expected. The Hemmens Richmond engine and Ribbersdale boiler all seemed to work well.



As much as possible was fitted in place ready for the first sea trials. Although a couple of the electronics items were temporarily located, such as the steering servo, all the steam hardware was where Richard hoped it would end up.

So, with these basic design requirements in mind, I set about acquiring all the bits and pieces required so that I could start the build.

Fitting out the hull

I started off according to the instructions and fitted the stern frame, stern tube and shaft, rudder and the bilge keels (see **Photo 1**). The first bath test clearly showed that the plastic bushes in the stern tube weren't good enough for a tube with the inboard end below the water, so the shaft was ripped out and a new one with sealed ball bearings was fitted. A good start!

Next, as I wanted to add full rivet detail to the plate work moulded onto the external surfaces of the hull. Here, I tried numerous glues, with limited success, until I discovered that if the fibreglass was sealed with a primer, then spots of cyanoacrylate gel would form nice, neat blobs on the surface. So, the hull was given a few coats of Halfords grey acrylic primer before many a happy hour was spent adding spots of glue to the edges of the plating. Finally, matt black enamel was brushed over it to create a textured finish (see **Photo 2**).

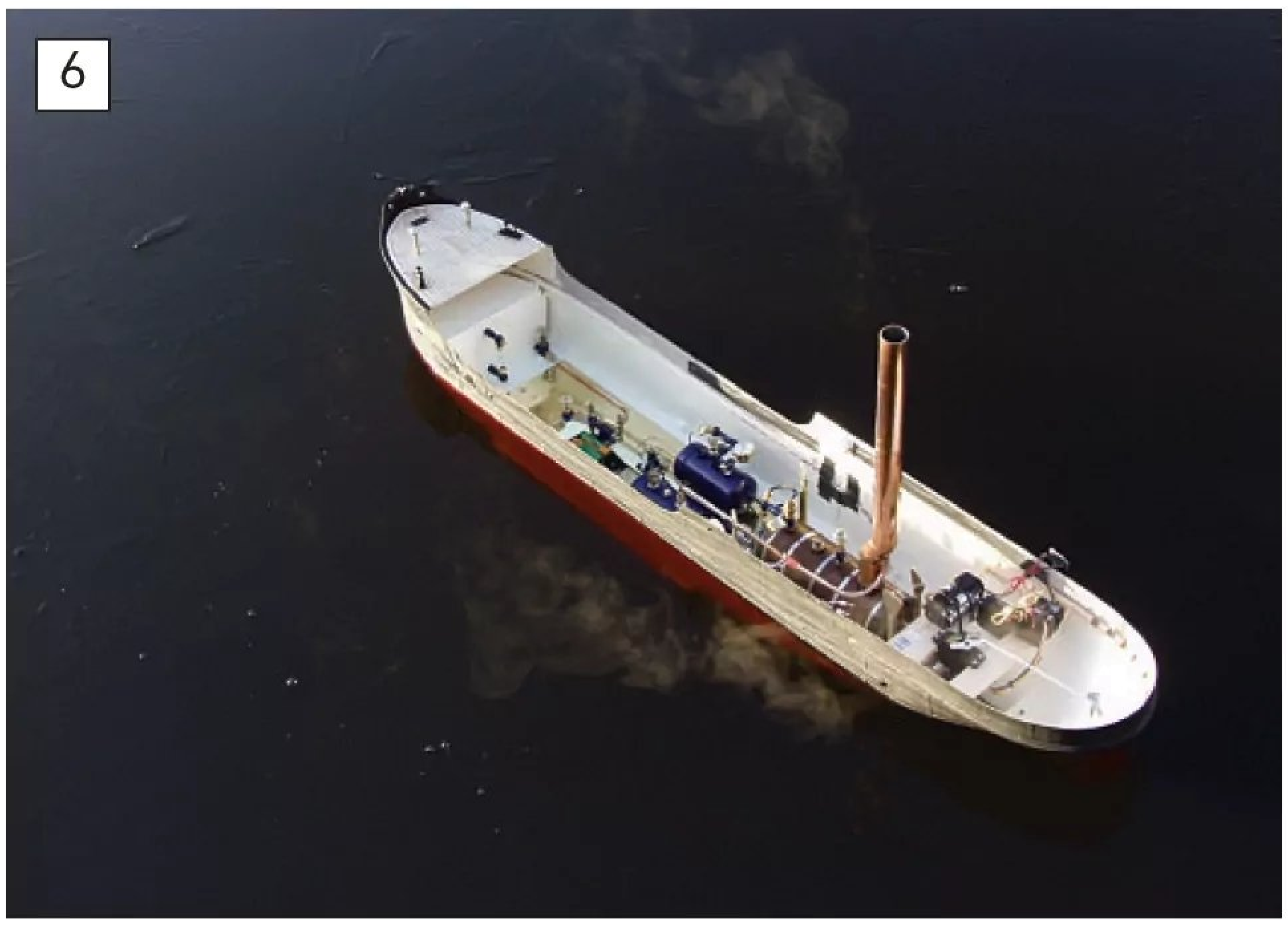
"The first 'sea trials' identified a couple of what I felt were necessary modifications"

After that, work then revolved around getting the hull ready for its first 'sea trials', which were to be undertaken with the decks off. So, following a bench test with all the bits and pieces connected together to prove they worked (see **Photo 3**), the various components were fitted into what was hoped would be their final locations (see **Photo 4**). The feed tank was installed, the forecastle deck was fitted with individual planking to replace the provided ply overlay (see **Photo 5**), the flue was replaced with a new item to align the boiler flue with the model's funnel, and electronic components were temporarily fitted to battens.

The first trials saw everything perform as expected and the model handle very well on the water (see **Photo 6**). At this point calculations and bath tests had led to an estimate of the required ballast, which was fitted in the form of a steel plate, epoxied into the bottom of the hull, below the brass plate that the entire steam plant was mounted on. This was designed to take the model, once completed, down to the fully loaded waterline.

The first 'sea trials' identified a couple of what I felt were necessary modifications I felt were needed. The first was to fit an overboard line into the steam supply from the boiler to the engine; this would allow the initial slug of condensate to be blown overboard before opening the valve to the engine, which would save the

Although the main deck wasn't yet fitted, Richard thought the forecastle deck provided at least a degree of protection, so that was put in place and sealed with a matt varnish. The hawse pipes are glued at either end to seal in the hull.



The first time on the water is always a tense moment, but the plant worked surprisingly well. A couple of modifications were identified, but the performance of both boiler and engine, and maneuverability, were all surprisingly good.

7

By the second set of 'sea trials' things were starting to come together nicely. The operational philosophy of 20 minutes on the water was met, with everything being able to be attended to at the same time when the model returned to pondside. Speed was certainly more than required.

condensate being sprayed around the inside of the hull when the engine was first run. The second was to fit another overboard line to enable the gas tank to be vented overboard while being filled in situ, and so prevent any chance of a build-up of gas inside the model during the process.

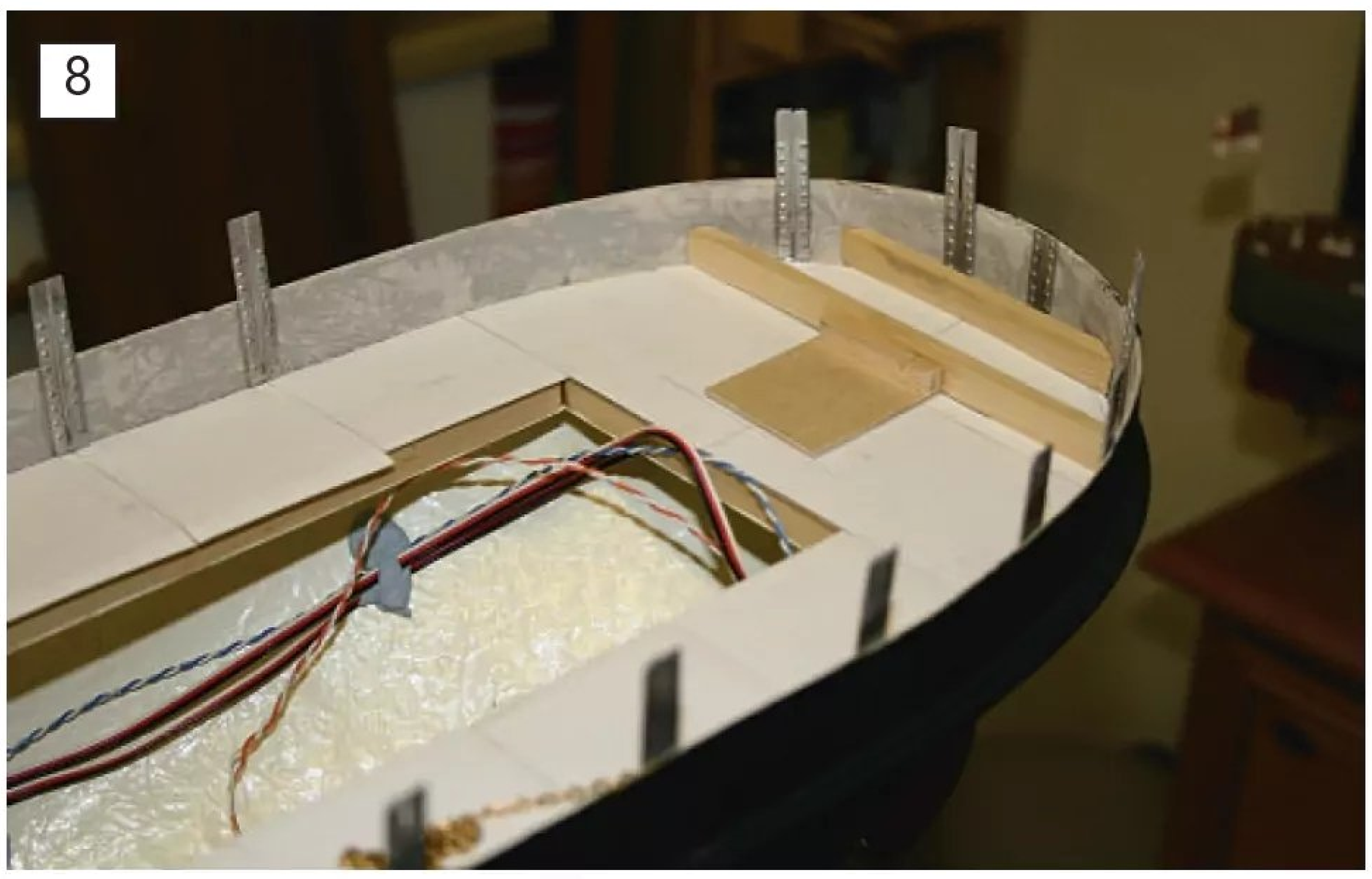
With these modifications made, the next step was to fit the forward main deck so that another set of 'sea trials', to establish both plant performance and accessibility, could be carried out. The deck was therefore fitted, as was the forward forecastle bulkhead, to give an idea of the available access. This proved to be a bit of a challenge as the forecastle deck is at a slightly different angle to the main deck, so the bulkhead unit that I'd made up was actually higher at the forward part than the gap between the decks was. A bit of coaxing, however, got the bulkhead in, and I was pleased to see no gaps anywhere around it. Next, the anchor windlass was built from the kit parts and put to one side, and the forward bollards were fitted to the forecastle deck. The main hatch was also constructed, according to the plan, to a point where it was simply a box that fitted over the coaming; this allowed operation with the hatch in place and accessibility with it removed to be thoroughly tested on the water. Once again, everything worked well (see **Photo 7**), so I could happily continue with the build.

The bridge unit

I resumed work by first getting the quarterdeck fitted to the internal stringers so I could see what I'd have to deal with in terms of the removeable bridge section. Work on details such as plate butt straps and the aft windlass mounting was also progressed (see **Photo 8**). The kit instructions suggest you simply build the bridge unit onto the two decks, but I wanted the bridge unit to be removeable for better access to the steam plant. I therefore decided the forward bulkhead of the bridge unit and the aft bulkhead would slide down vertical guides glued inside the hull. The aft bulkhead was to be continuous up through the structure to provide strength and rigidity and would form the rear bulkhead of not only the enclosed bridge but also the monkey island and the bridge wings (see **Photo 9**), while two large substantial beams fitted longitudinally with gusset plates would keep everything as rigid as possible (see **Photo 10**). This achieved, a deck was then fitted across those two bulkheads, incorporating a suitable camber (see **Photo 11**), before everything was stiffened up further internally to give a structure that would slide into place on the model (see **Photo 12**). I also noticed from one of my period photographs of the real ship that the bridge unit deck bulwarks have quite a noticeable tumblehome, so I wanted to incorporate that into the build, too. Everything was built in place on the model to ensure the best possible fit and, when the unit was actually slid out from the guides, I was surprised to find it light, very sturdy and able to slide in and out of the guides easily.

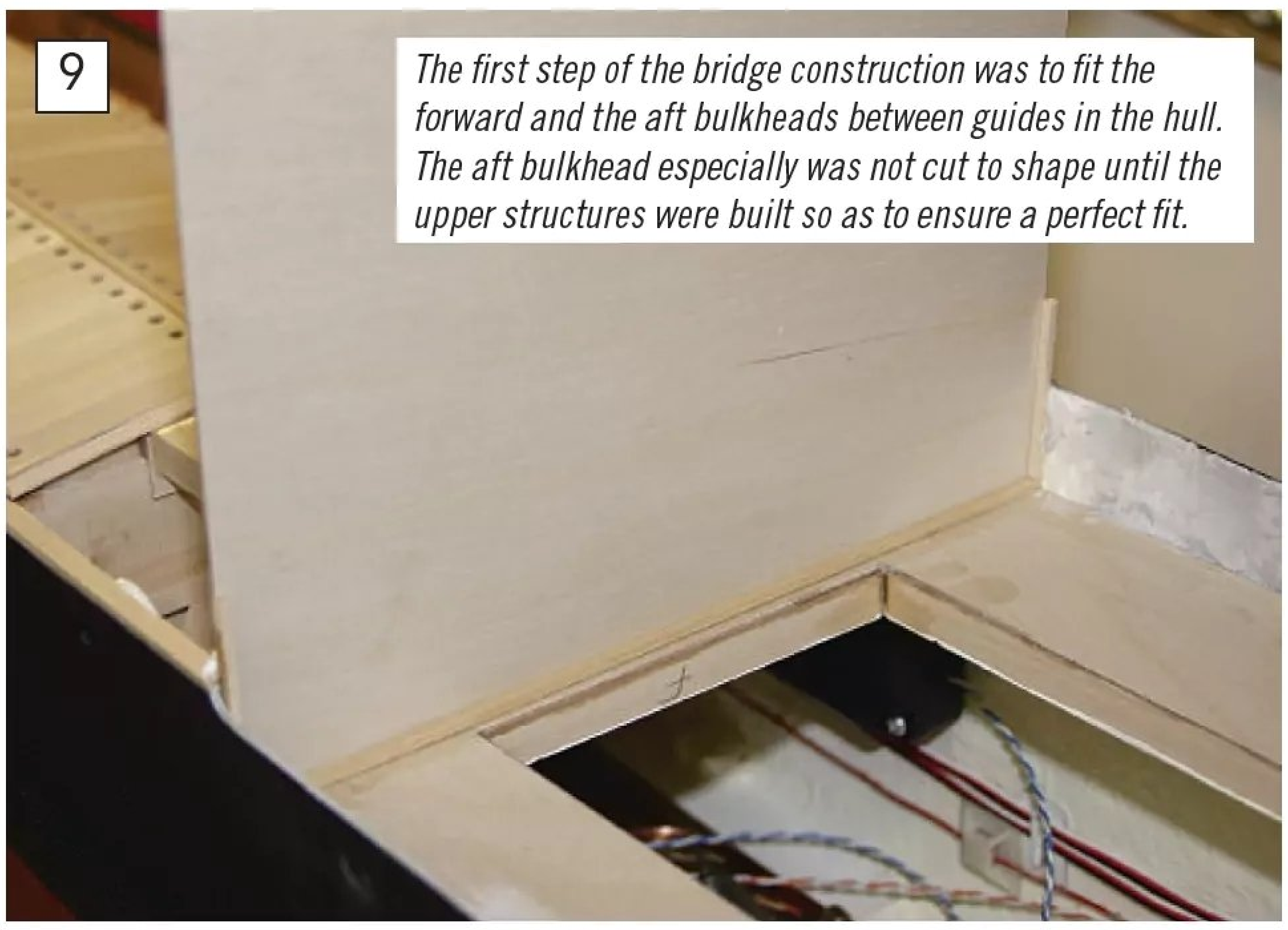
With the bridge structure now as I wanted it, it was removed it from the model for fitting out. The bulwarks were fitted, the portholes from the kit were fitted to the front bulkhead and then the bridge was detailed internally from an original plan. And for those who think the wheel is fitted the wrong way around, I can assure you

8

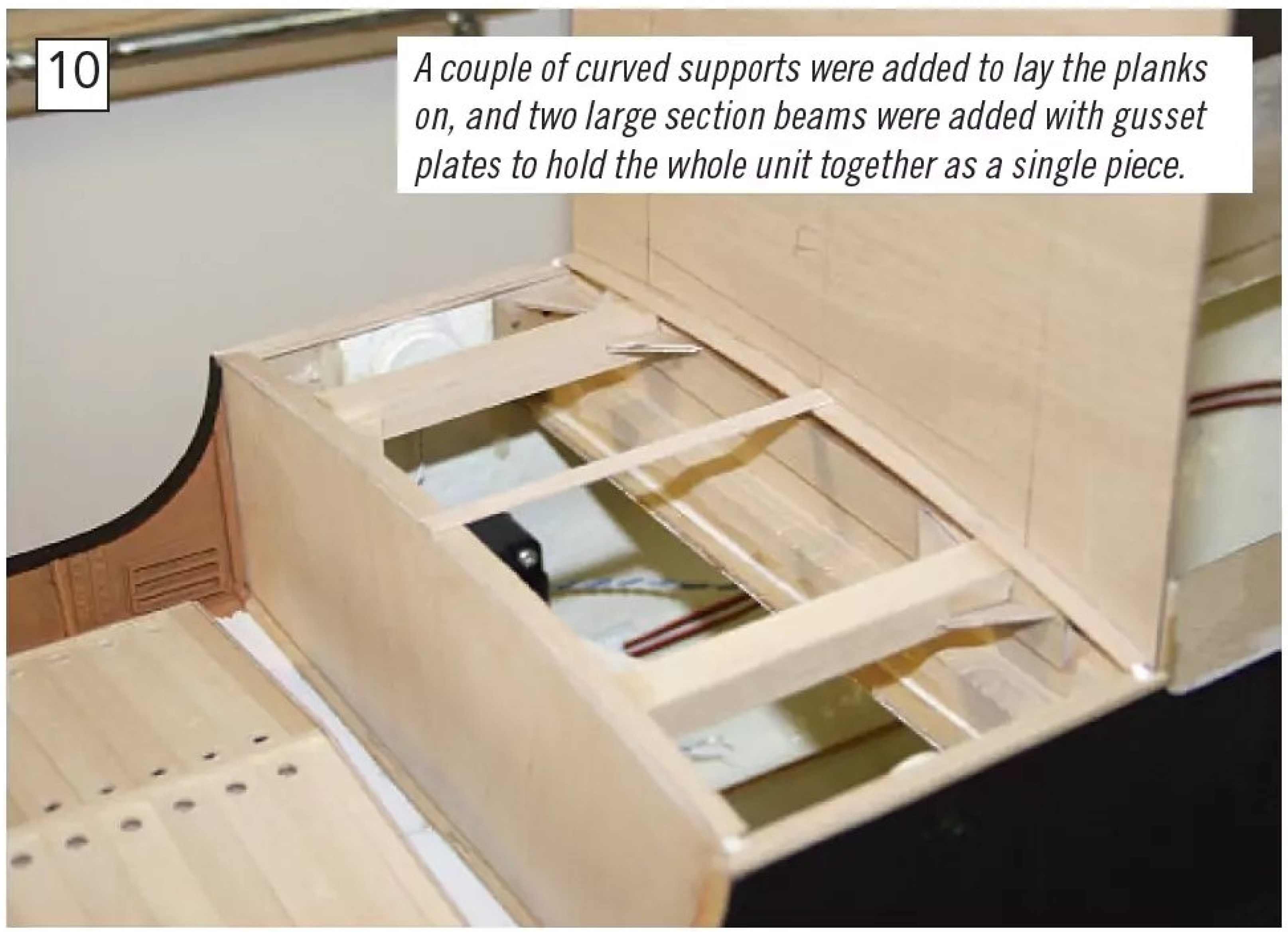


Moving onto the raised quarterdeck, the rough fibreglass surface was filled and smoothed with car body filler before butt straps and eventually bulwark stays were fitted.

9

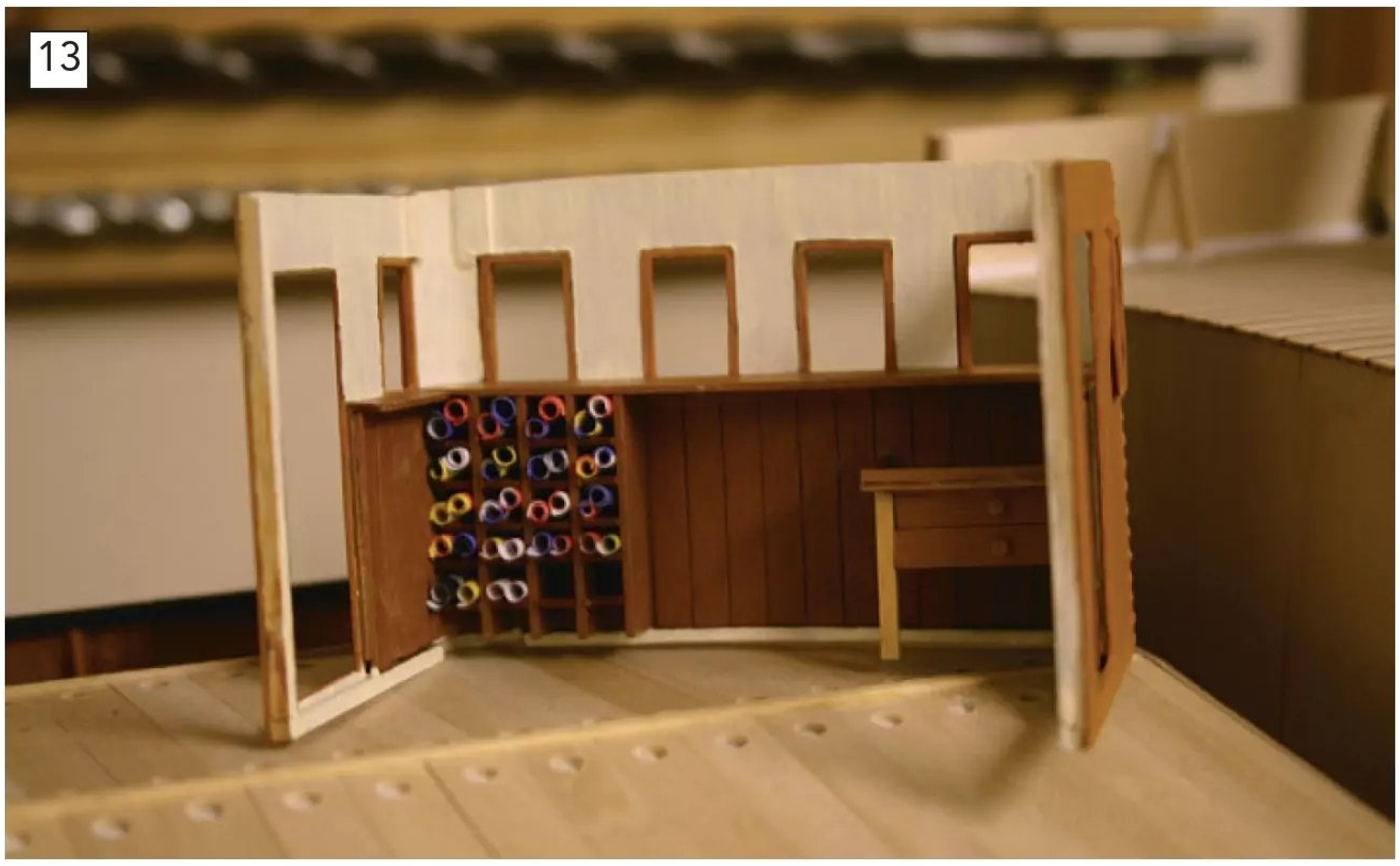


The first step of the bridge construction was to fit the forward and the aft bulkheads between guides in the hull. The aft bulkhead especially was not cut to shape until the upper structures were built so as to ensure a perfect fit.


10 A couple of curved supports were added to lay the planks on, and two large section beams were added with gusset plates to hold the whole unit together as a single piece.


11 Planking was laid across the bridge deck between the forward and aft bulkheads to further consolidate the piece into a single ridged structure.


12 The moment of truth came when the bridge was slid upwards and formed a removeable strong structure, onto which the rest of the building could take place. Satisfyingly, it slid back in place perfectly!


13 An owner's plan was used to detail the inside of the bridge with wainscoting, and a shelf was fitted to the bulkhead, with a flag locker and a chart table all scratch built from bits and pieces of scrap wood. The flags were created from images found on the internet and then printed off, varnished, cut out and rolled up.

"For those who think the wheel is fitted the wrong way around, I can assure you that it is correct!"

that it is correct! I added a chart table, a signal flag rack, a wainscot and shelf (see **Photo 13**), and a chart of the Irish Sea. Wires were also incorporated into the structure to enable power to be supplied to the navigation lights on the bridge wings and the oil lamp on the chart table. I also simulated a staircase with handrails down to the next deck by shading some planks in increasingly darker hues to simulate steps (see **Photo 14**).

With the bridge internals sorted I could progress to the monkey island and the bridge wings. The deck here was supplied as a printed ply overlay in the kit, but I preferred to individually plank mine. Also, I wanted to incorporate a camber to match the


14 The completed bridge internals, with the dummy steps down to the accommodation, ship's wheel and binnacle, telegraph, and a few charts scattered around.

Onwards and upwards: next the monkey island deck was fitted to the same camber as the bridge deck. Again, the planking was spaced with 0.5mm plastic extrusion to give a gap for the caulking to fill.

lower deck, which was easy to achieve with some curved supports and longitudinal planks laid over them (see **Photo 15**). I used the same planking process as I used on the forecastle and the bridge deck, with a PVA and black powder paint mix applied to a 0.5mm gap between the planking. Rubbing down after the PVA had set left the black caulking between the planks. Similarly, the monkey island sidings were all built up from a lite ply core with individual mahogany planks overlaid to give a more realistic look (see **Photo 16**). This was finished with a decorative beading, a skirting board and a capping rail (see **Photo 17**). Again, details were added to the monkey island, such as the wheel and the binnacle, along with a voice tube, and single hole stanchions were fitted to the sidings to enable the canvas dodger to be hung from them. Navigation lights were fitted and connected into the wiring inside the internal access lockers and the lamp lenses painted up with Tamiya clear acrylic red and green.

The kit's bridge ladders were all supplied as cast white metal units; however, it would have taken a lot of fettling to get them to look neat and I was concerned that they were significantly weighty. Consequently, all my ladders were made from softwood planking, built in situ on the model to ensure a perfect fit, and glued to the removable bridge. I was initially a bit concerned that

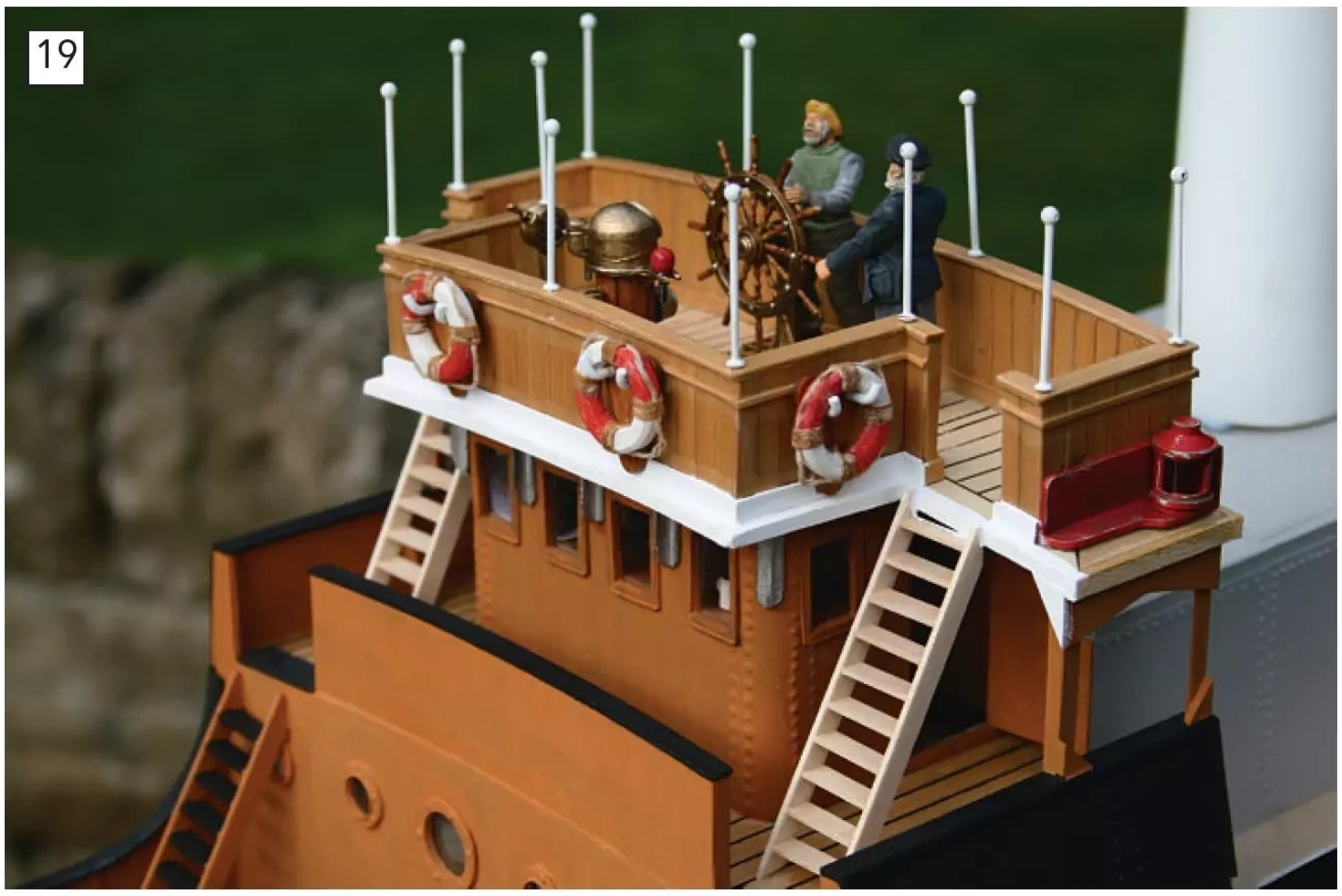
The monkey island sidings were made from a lite ply core, with vertical planking added to the outside. The rear bulkhead was the same piece of ply used initially for the rear bulkhead, so giving strength right through the structure.

The sidings almost finished, with the capping rail in place and the skirting board almost done. Still to add is a detailing rail around the outside.

18

The kit supplied captain was a very nicely cast white metal part, which painted up into a nicely detailed period figure. This and the coxswain would be manning the monkey island eventually, with the 'cox' on the wheel and the 'Old Man' on look-out.

19



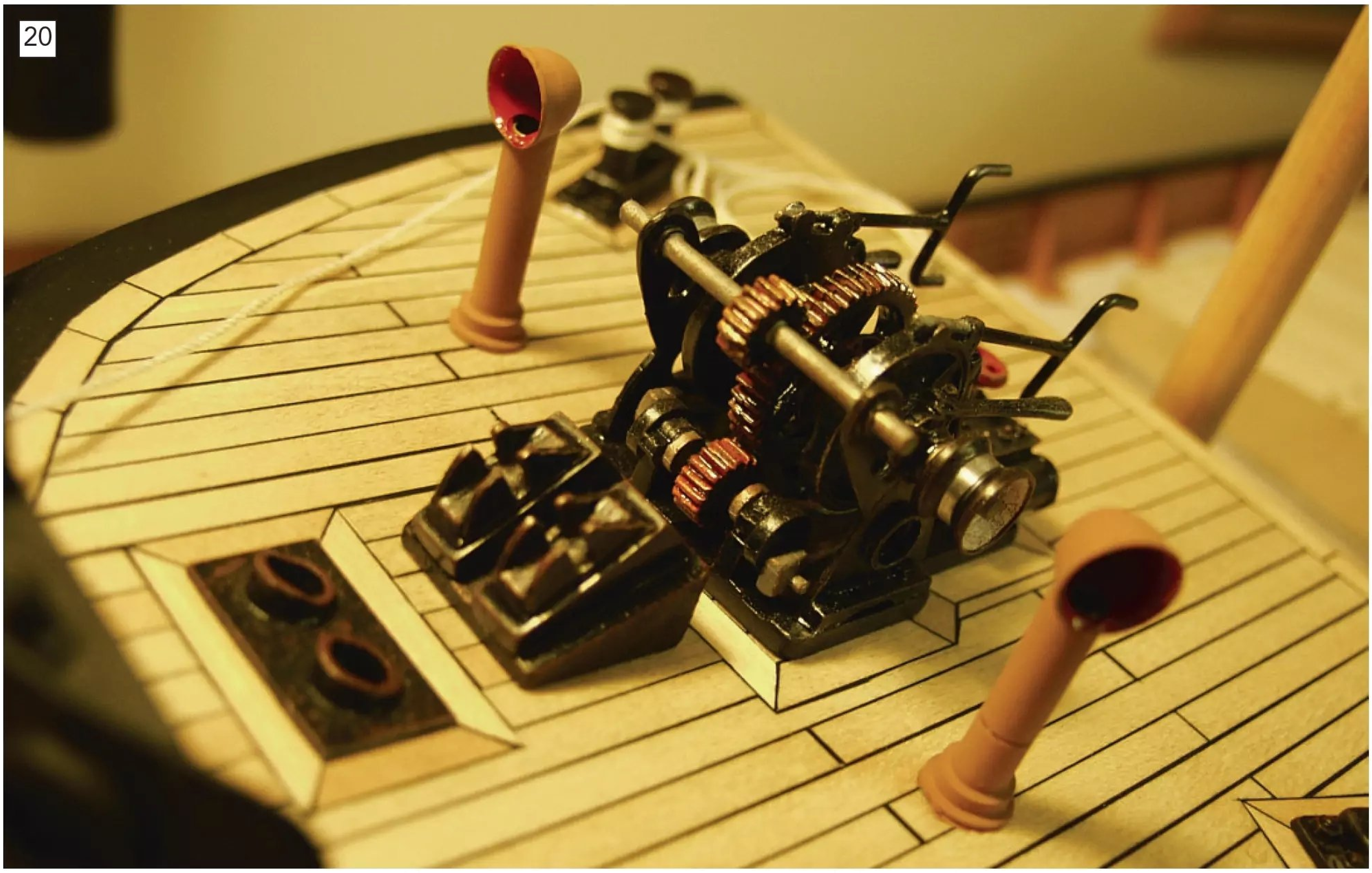
The bridge unit almost finished. Wooden scratch-built companionways have been added along with most of the monkey island fittings. Navigation lights are in place and working, and the canvas dodger rails are fitted to the top of the sidings.

they might prove a little fragile when removing the bridge, but fortunately there had been a good surface for the glue to key to. Handrails were made from fine brass rod, and the kit supplied captain was painted up (see **Photo 18**) ready to assume command, along with his coxswain, ready to take over the bridge. Further detail would be added later, but the basics of the removeable bridge were done (see **Photo 19**). Finally, the built-up anchor windlass was fitted to the forecastle (see **Photo 20**).

Next month

In Part 2 I will go through the last stages of the build and some further modifications, before wrapping up, in Part 3, with an explanation of why I finally decided this model was best kept on static display behind glass. ●

20



The previously completed white metal anchor windlass fitted to the forecastle deck. The vents, one being removeable for filling the feed tank and the other being a feed tank vent, were fitted over brass tubing that goes down into the feed tank.

Multi-Speed, and more!

Buckle up, as **Dave Wiggins** is about to hurtle us down Memory Lane…

Dave's rebuilt MERCo 35 R/C glow engine.

This month I'm going to be mixing things up a bit by not only introducing you to an old engine I've recently restored but also by sharing details of a few other interesting oddities in my vintage collection….

A British 'MERCo' rebuilt

My example of this air-cooled MERCo 35 R/C glow engine, c.1960, was purchased second-hand on an internet auction site. At first glance, it appeared to be virtually in 'as new' condition, coming complete with its original box and all of its paperwork – there was just one big drawback, the engine itself had totally seized up! Consequently, I was the only bidder and regretted its purchase for quite some while, until I eventually managed to free the engine up and make some progress in getting it going. Well, here it is, finally ready to run again after many years of obvious non-use/sitting in storage (see **Photos 1 and 1a**).

The glow-plug/2-stroke duo made up of the plain bearing, 5cc, MERCo 29 and her sister engine, the 6cc '35' (pictured), were originally meant for control line (U Control Stateside) aerobatics use and were thus sold as 'Stunt' engines. At the time these would have been regarded as big engines. As radio-control began to enter the model marketplace and radio designers progressed from the first wave of crude single-channel onto more capable multi-channel sets, a need for speed controllable engines for aerobatic radio-control flight emerged, and MERCo responded by modifying its brace of engines with R/C throttles and proudly applying a 'Multi Speed' sticker to them, in a very clear promotion of their new capability.

A 1960s' glow engine will appear a strange looking item to any user of a modern 'nitro' engine, but the first few R/C carburettors were not that effective. Engine designers (in general, not just MERCo) discovered that they could improve low speed throttling by use of exhaust restrictor plates linked up to the carb'. These were awkward gadgets, but a solution was just around the corner. When the government and SMAE (Society of Model Aeronautical Engineers –now renamed the BMFA) imposed the use of silencers (known as mufflers in the USA), it was found, more or less by accident, that these exhaust 'choppers' could be dispensed with if a silencer was fitted.

An ELMIC LIMITANK, together with a simple control-line tank in tinplate.

> ***"Sorry folks, I can't give you any information on this shop or its location, but I am confident someone out there reading will be able to tell us more"***

Our 'lead' engine this month still has the original price label on its very pretty box top. As you will see, this one was originally sold (post the switch over to decimal currency) for £11.40p by a hobby shop called Powell's Models. Sorry folks, I can't give you any information on this shop or its location, but I am confident someone out there reading will be able to tell us more. As to its value today, rather surprisingly perhaps, it's not that huge. There seem to have been lots made and you can still find nice examples on the 'net. A silencer would be nice to have, and I'll keep looking out for one of those, but for now, let's move on to an assortment of oddities…

Fuel tanks

First up are a brace of miniature fuel tanks for very small diesel engines. The ELMIC 'LIMITANK' (see **Photo 2**) was a quite clever little item, intended for free flight sports model aircraft. The tiny tinplate fuel tank shown sitting in the same photo is the opposite – an item for small control liners. Both are suited only to very diminutively sized engines – certainly not for a 5 or 6cc MERCo, which would have needed early 'clunk' tanks for prolonged radio-control usage.

Laystrate

Speaking of control line as we just were, also pictured (see **Photo 3**) is a mint example of '*the*' essential item needed to fly any C/L job – the wire! I can no longer remember when, why or how this seven strand, lightweight, 70ft roll came into my possession, but it must, I feel, now be pretty rare, seeing that it is still spooled and ready

Just as it was sold way back when, a spool of lightweight Laystrate C/L flying wire.

Good old Maplins sold a huge range of modeller-friendly items in its much-loved shops.

Vintage deck fittings from Lesro models.

Model boat lighting from the once huge range by Graupner.

for sale (clearly never having been used as intended to connect to a little plane's bell crank and suitable control handle). There were at least two gauges of Laystrate, as I recall.

After a while, Crocodile…

Totally different are my pair of always useful 'crocodile' clips, still packed in their red and black insulated covers (see **Photo 4**). Good old Maplins! I really do miss its stores, and its friendly staff, always willing to assist with, and chat about, radio-related purchases.

Lesro models

Next up, I give you a couple of still packed Lesro deck fittings (see **Photo 5**). There appears to have been some sort of sale going on when these were bought, as one of the packets clearly features a marked down price. Like Aerokits and NorStar, Lesro (named for its designer Les Rowell) manufactured a range of wooden boat kits, some of which may possibly still be available.

Graupner of Germany

My penultimate offerings this month were once, I believe, quite expensive fittings. These model boat lighting fitments from Graupner of Germany were actually purchased from a hobby shop in that country by a late friend of mine while on a holiday there (see **Photo 6**). Sadly, David, who I had known since my youth, died during the Covid epidemic, and so these were passed on to me when his workshop was eventually cleared.

Sparks!

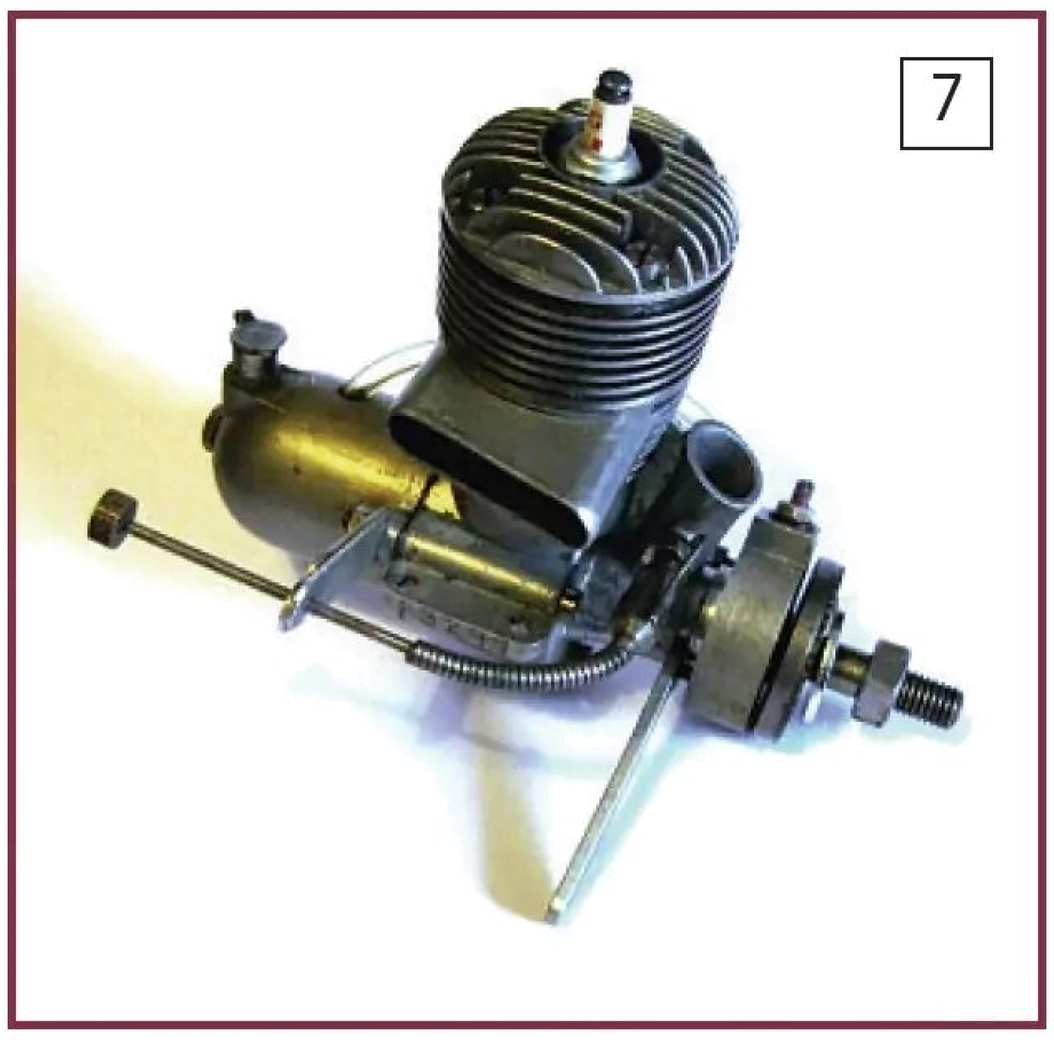
Finally, from the very earliest days of model flying and power boating, we come to a miniature spark coil intended for the very first wave of model petrol/spark-ignition 2- and 4-stroke engines.

"Fewer and farer between than any actual engine are the vintage spark coils attributed to a US manufacturer called Nathan Smith"

Photo 7 features an example of a 1950s' British Frog-500/5cc 2-stroke petrol job from my own collection. Fewer and farer between than any actual engine, though, are the vintage spark coils attributed to a US manufacturer called Nathan Smith, and the example I'm lucky enough to have in my collection can be seen in **Photo 8**. The matching capacitor from the old British firm of TCC Ltd in the same image is of 0.05uF (micro-Farad) capacity and 350-volts rating, although it's unlikely to still be functional so many years after being manufactured for use in pre- and immediate post-war domestic radio (wireless) sets. More recently made replacements, however, would include WIMA epoxy-coated mylar capacitors. The value is not as important as the working voltage, but WIMA made a 400-volt DC-rated range which ought to suit. Vintage miniature sparking plugs are not quite as hard to find as coils, and the one shown is a ¼-inch KLG still in its tiny original box.

The next hot topic

For this month, that's all folks – although I will be revisiting the subject of model petrol engines and spark ignition coils in more detail next year. In the meantime, in the December and January issues I'll be delving into the world of vintage model steam boating, so tune in for another generous helping of nostalgia that will hopefully keep you feeling a bit warmer as horrid old winter approaches! ●



A vintage spark coil and matching capacitor and plug for use with vintage petrol engines.

An example of the 1950s' British Frog-500 petrol 2-stroke engine.

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**

The way of the Warrior: work underway.

Finished and looking fab.

Warrior: an alternative approach achievement

Hi there! It's Terry again! I really enjoyed David Bray's two-part [see the June and July 2024 issues of Model Boats] review of Billing Boats' 1:100 scale kit for *Warrior and* am full of admiration for the beautiful model resulting from his build, but I have short arms and deep pockets! So, I decided to create my own version.

I started with an old hull I had in the shed and gathered up various bits and bobs I had stashed away, lolly sticks, a spare motor, some car body filler, *etc*. The masts I crafted from one-inch hardwood, putting one end in a drill and then the other end into a nail punch, using screws and a rasp to turn them down. I used a similar method for the guns, while the figurehead was made from a Christmas decoration. The funnels were simply fashioned from cardboard tube.

There's no remote control, you just switch on and watch it go – then send one of the grandkids to the other side of the lake to send it back. In my mind this is the best way to get youngsters involved. I think it's up to us elders to steal them away from their screens, get them out in the fresh air and show them how much fun the real world can be!

Hope you like the photos.

TERRY FARROW
GRAYS, ESSEX

Lovely to hear from you again, Terry. So impressed, not only with your built on a budget 'Warrior' but with your 'can do' approach to the hobby and life in general! Garden is looking fab, by the way. Ed.

Pauline

I have finally completed my scratch build of the herring carrier *Pauline*. There were many of these wooden boats built from the 1920s to 1960, specifically to carry/transport herring to sardine packing factories along the Maine (United States) and New Brunswick (Canada) coastlines. Canned sardines were used to feed the troops during World War II.

Pauline was built in 1948 in Thomaston Maine at the Newbert & Wallace boatyard (other examples of this yard's work being the herring carriers *Mary Anne* and *Jacob Pike*). Referred to as 'the Queen of the Fleet', *Pauline* was 83ft long, powered by a diesel engine and could carry 120,000 pounds of herring. As launched, she wasn't fitted with radar equipment – this was added later, along with the stationary engine below the mast to work as a winch.

In 1988 *Pauline* was rebuilt to carry passengers cruising along the Maine coast. Today, however, she is being restored to former glory in Stonington, Maine (some video footage documenting the work underway can be viewed if you key 'Pauline's Progress' into YouTube's search engine). Much of her hull and ribs is being replaced, and the holds that once carried herring are being turned into classrooms where marine biology will be taught, as on completion the intention is for her to serve as a sea-going educational vessel.

Working from plans drawn up by Harold 'Dynamite' Payson, I modelled her to a scale of 3/8-inch to a foot, resulting in a model of 31-inches in length overall. Her hull was constructed from pine, but I used whatever wood was available to me elsewhere; for instance, I used 144 coffee stir sticks (birch) to complete the deck. It was a slow, challenging but ultimately very satisfying build.

I look forward to the magazine each month.

RUSSELL BOWMASTER
NEW BRUNSWICK, CANADA

Brilliant, Mr Bowmaster; I don't usually do formality, but what a fitting name for a model boat builder! Ed.

Herring carrier Pauline, modelled to perfection by Russell Bowmaster.

Never give up

Over the decades I have built up a fleet of over 30 ships, if not more, ranging from Iron Clads dating from about 1863 to coastal steamers, river gun batteries and paddle steamers. Some float, some are radio-controlled and two are on loan to a friend who exhibits model railway layouts. However, on April 16, 2024, I entered my 74th year, and I don't feel 74, more like 104! I also used to enjoy getting out and about to show my models off, but the effects of Parkinson's, which I was first diagnosed with 25 years ago, are now really taking their toll and preventing me from doing so.

What next, then? Well, firstly I'd like to say a big thank you to the team at Model Boats for having published no less than six of my articles over the years. I hope others have enjoyed reading about my models and possibly also seeing them on display at various exhibitions. I would also like to thank the show organisers and all the friends who helped me at these events. We've had some great times!

Looking to the future, I still have three diorama layouts currently underway, these being:

- Trudoxhill Boat Yard
- Trudoxhill Breakers Yard
- Trudoxhill Tramway

Getting these past the finishing line may or may not happen as, going on past form, only one out of ten of my layouts ever makes it to completion!

But I think it's worth sharing some words of encouragement, that apply whether you're starting to feel your age/living with a disability or still running the London Marathon at the age of 90! So, here goes:

- This is a hobby, so don't take it too seriously or be too hard on yourself – just enjoy it!
- That said, keep increasing your skill base by trying out new methods and techniques (yes, an old dog can still learn new tricks!)
- Never worry your models have become outdated; if they bring you pleasure, that's all that matters
- If you can no longer sail your models on the lake or take them to shows where they can be exhibited (assuming you don't have friends who'd like to do this on your behalf), invite anyone over for a coffee morning viewing, or, likewise, consider hosting improve your skills/'how to do it' sessions – you could even use these little events to raise money for a charity close to your heart
- Have a go at sharing your knowledge/experience by writing an article for this magazine
- Write to your MP, lobbying for the cost of building model boats to be made tax deductible!

The main thing is, to quote the most famous line from the American sci-fi comedy film *Galaxy Quest*, "*Never give up, never surrender!*"

DARRYL FOXWELL
EMAIL

Loving the fact that despite all life's challenges you haven't lost your sense of humour or positive attitude, Darryl – every bit as inspirational as your dioramas! Ed.

These diorama shots provide just a little glimpse of Darryl Foxwell's well-honed multi-media modelling skills.

Your Letters

Got views to air or information to share? Then we want to hear from you!

Letters can either be forwarded via email to **editor@modelboats.co.uk** or via post to **Readers' Letters, Mortons Media Group, Media Centre, Morton Way, Horncastle, Lincs LN9 6JR**

Cascamite & Aerolite

I have just received my October 24 issue of Model Boats and note on page 71 you are asking for information on Cascamite.

Back in the late 80s I needed a dinghy tiller with a swan neck and decided to laminate one using five strips of timber (see attached pic). The process involved first soaking the strips in water for about an hour. I then wiped off the excess water and painted the flat faces with Cascamite, which, of course, was also wet. I am not sure exactly what fighting eels in a sack is like, but you get the picture! The assembly, still straight at that point, was then wrapped in polythene sheet and clamped into a robust frame to form the swan neck shape, before being left to dry. Once completely dried out (which, I seem to recall, took several days), the whole was unwrapped, and any escaped glue scraped off before it was sanded to a smooth shape. This was followed by several coats of marine varnish.

None of that is particularly unusual, except that only the first 5-inches of the completed tiller fits into the rudder head and once in position the other end stands unsupported some 14- or 15-inches above the dinghy deck. In normal use there was no play in the tiller horizontally and none noticeable in the vertical plane. Obviously dinghy sailing is a wet experience and one day I slipped, falling with full body weight onto the free end, forcing it down to the deck. Once upright I expected to find myself afloat with a shattered tiller but, incredibly, there was no damage to it or the associated rudder fittings; clearly the whole assembly had flexed a significant amount, but the glue joints had held – and still do.

In my experience, therefore, Cascamite was a superb wood glue, and it appears to be still available. I assume it is the same formulation but haven't had need to use it lately. Certainly, I remember rattling half-filled tins, because the powder is hydroscopic if exposed to free air.

Aerolite was also an extremely good glue but a bit on the pricy side for impoverished amateur Dinghy builders, and I found it difficult to get the correct ratio of glue and acid activator to guarantee reliable joints. Nothing wrong with the product but I never got the hang of applying it accurately.

MIKE PAYNE
EMAIL

Tested to the extreme, then, Mike! Ed.

Timber strips for the swan neck dinghy tiller constructed by Mike Payne in the late 1980s, which, thanks to the use of Cascamite, proved remarkably robust from the off, with glued joints still holding true to this very day.

The letter from Terry Ketley regarding the glue Cascamite brought back lots of memories of modelling in the 1960/70s. Cascamite was a very popular glue back then and was sold in all good model shops. It was a white powder that you mixed with water and when dry it was totally waterproof. The downside was that it took some considerable time to harden, so the parts had to be firmly clamped/nailed and preferably left overnight. Once dry it was incredibly hard and almost impossible to break apart again.

As proof of the glue's quality, I am sending a picture taken today of a Billings' kit of the trawler *Progress* that was originally made by my late father in 1973; as can be seen, it is still in excellent condition. I have recently repainted it and built a showcase to protect it, but have never had any glued joint fail in over 50 years.

CHRIS LOVETT
EMAIL

Impressively, the Cascamite glued joints on this model of Progress, built from a Billing Boats' kit by Chris Lovett's dad back in 1973 and recently repainted and housed in a custom constructed showcase by Chris, have held to this day.

The letter from Terry Ketley in the October edition has prompted me to write about my experiences of Cascamite glue.

In the mid-1950s, at the age of 12 to 14 years, I built an Aerokits *Sea Nymph* and a 36" hard chine yacht using Cascamite glue, as recommended, along with Aerolite, by Vic Smeed in *Boat Modelling*.

I wondered, therefore, if I still had any of this adhesive in my glue draw and was surprised to find I did, although interesting the tin specified it was made/distributed by Humbrol, whereas I remembered the old version with the two horses logo. (Searching on the internet I found the current manufacturer, and its website has an interesting page on the history of Cascamite, with Cascamite currently being produced by Ureka Global.).

It appears there have been a number of manufacturers over the years.

Because I hadn't made wooden models after the early 1960s, I was puzzled by my Humbrol Cascamite. Then I remembered that in the 1970s/80s I had made a water skier. As Action Men type figures had proved too heavy, I'd instead shaped a figure out of polystyrene foam and coated it with gauze bandage soaked in Cascamite, because polyester resin, as used with fibreglass, would have melted the polystyrene. This method resulted in a light weight but robust figure, who stood up to the impact of hitting the water at speed if he toppled over during experimenting with skis, *etc.* I can't claim credit for the idea of using Cascamite in this way, as friends had previously used it to protect the floats of a raft used in a race on the river Wye, but they had used a fairly heavy open weave hessian fabric rather than gauze bandage.

COLIN MACKIE
EMAIL

That water skier looks so much fun, Colin! I am sure Terry will be delighted, as am I, with all the correspondence generated and all the memories/additional info shared. Many thanks indeed! Ed.

Colin's water skier, hand crafted from polystyrene foam and covered with gauze bandage soaked in Cascamite. As you can see from the action shot, this resulted in a figure that was lightweight but tough enough to withstand all the thrills and spills.

Prompted by Terry Keller's letter in last month's issue, which triggered memories of having used Cascamite himself, Colin Mackie searched his glue drawer and unearthed this old tin – although, interestingly, it's clearly marked as having been produced by Humbrol.

When the topic of conversation at lakeside between gentlemen of a certain age turns to long lost glues, people can only remember Cascamite.

In the mid '70s my Norstar Waverider was assembled using Aerolite 306. I remember it being a grey powder resin which when mixed with water produced a paste. This paste was first applied to one surface and then, using a brush, applied to the other. Any excess glue had to be removed immediately, as when set it was like glass and impossible to sand.

A quick internet search revealed it is still available, described as a Urea formaldehyde/acid hardener glue for use in boat and light aircraft construction.

It is 'good stuff', as nearly 50 years later my Waverider is still going strong and one of my favourite boats to sail.

ASHLEY COOPER
EMAIL

What a great photo, Ashley! And what a marvellous testament to Aerolite 306's staying power your Waverider is. Ed.

Ashley Cooper, circa 1978, sailing his Waverider, which at that time was powered by an OS20 and controlled by 27Mhz Waltron 2 radio gear.

I had my interest piqued by the correspondence about old adhesives in last month's issue. My father had a container of the casein glue that I believe was Cascamite. The trademark was of two horses attempting to pull apart two iron semi-hemispheres, which, apparently, were held together by a sealed vacuum. Hence the effort required to separate the two semi-hemispheres demonstrated the strength of the adhesive.

In 1954, when I was in the Woodwork class at school, our teacher introduced us to a "new" glue called Aerolite. This came in two parts, powder and liquid, which had to be mixed together. It was, he said, developed during World War II for constructing aircraft such as the De Havilland Mosquito. I used it when making a 'dibber' for my mother to use while gardening, which is still in use today; the glue still holding it together!

Love the magazine in its current format. The new type face is easier on the old eyes!

MARTYN WOODCOCK
EMAIL

Thanks, Martin, for yet another glowing endorsement of Aerolite. My research also revealed the World War II, and Mosquito, connections. The incredibly innovative work that was going on behind the scenes and the major developmental advances made the midst of the conflict still never fails to amaze me.

Glad you are appreciating the increase in font size. This was suggested by one of our Australian readers – take a bow, Adrian Brewer! Ed.

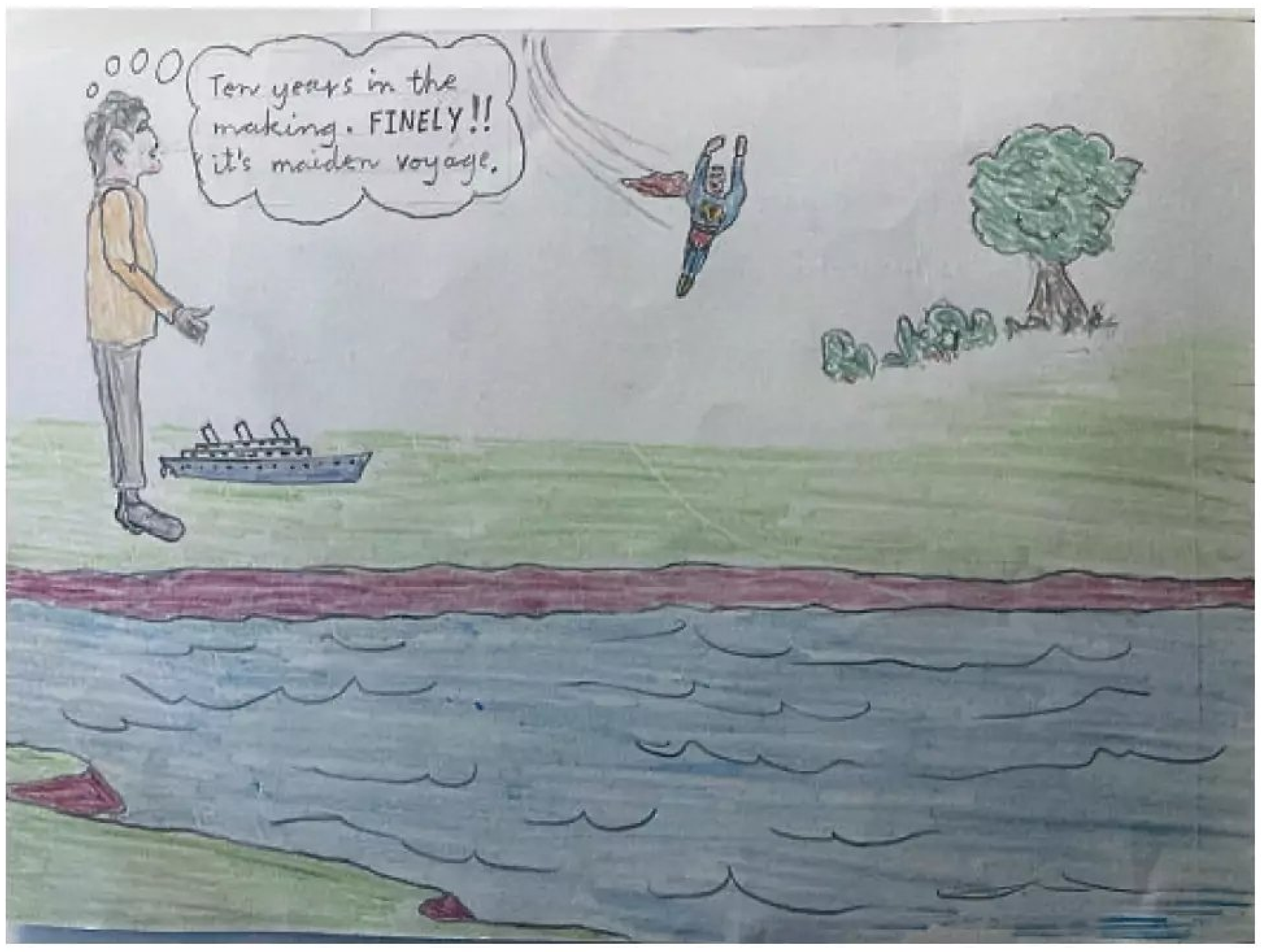
Superhero salute

As you kindly featured my scratch built 8ft 3inch motor yacht in the Your Models section of the June 2021 issue, I am hoping you will now share a cartoon I've drawn in order to honour a dear friend and fellow club member. Over the years, John (whose surname I am intentionally omitting to spare his blushes) has, without any thought for his own safety (or that of others!), responded to numerous SOS situations by simply leaping into the water and braving attacks from sticklebacks, mallards, water snails and other such dangerous creatures in order to retrieve boats in distress.

As well as the company of fellow enthusiasts, one of the major benefits of model boat club membership is feeling safe in the knowledge that help is at hand should your pride and joy get into trouble out on the water. So, cheers to John, and all the other clubs' fearless superheroes!

TIM DAVISON
EMAIL

LOL! Hope Super Stan (aka John) has a good sense of humour, or you might just have put your foot in it there, Tim! Ed.



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You can, of course, order you copy of the November 18, 2024 issue, which goes on sale at all good newsagents from Friday, October 18, 2024, now, but why not treat yourself to an annual subscription, as monthly copies will then be delivered directly to your door.

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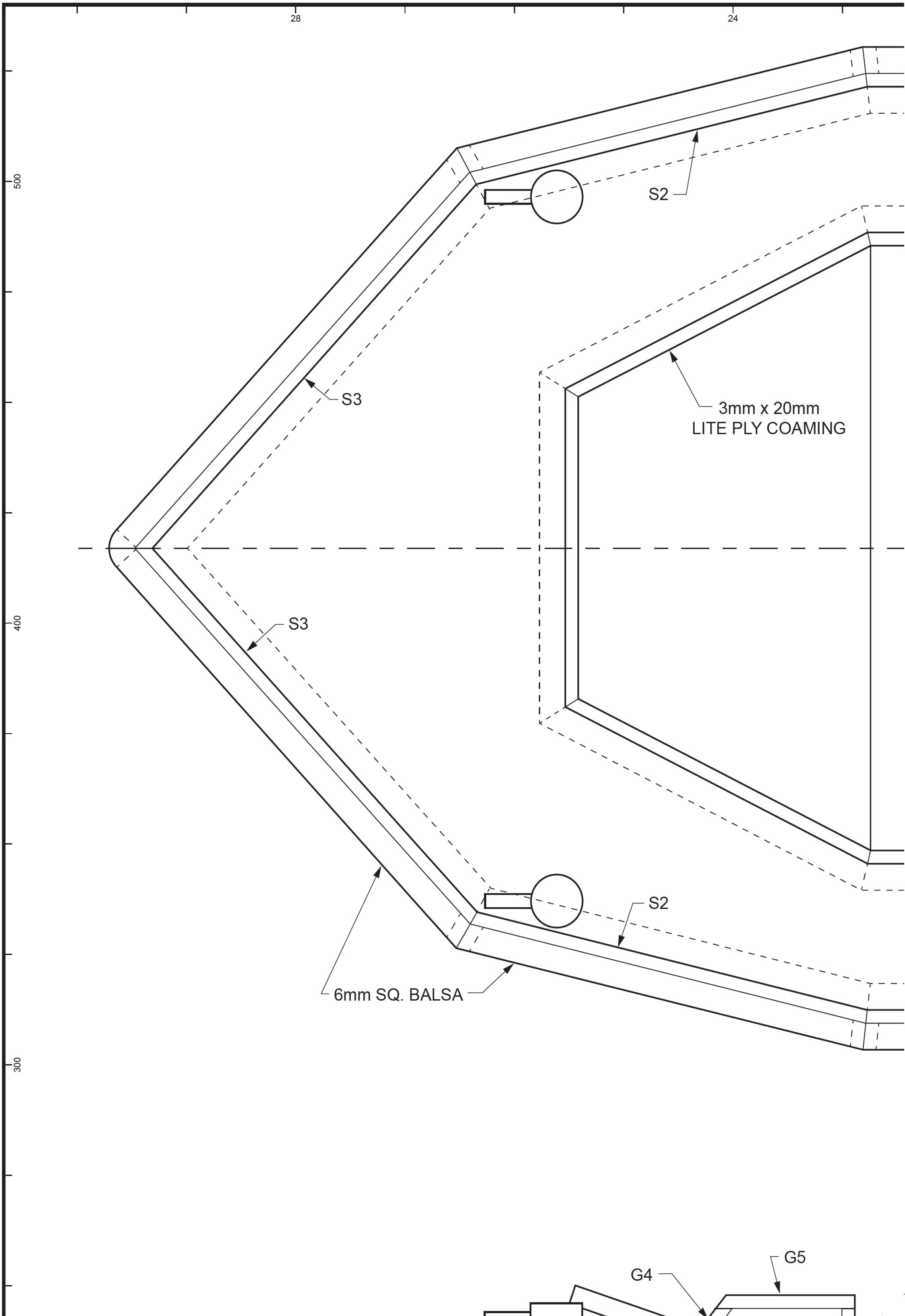
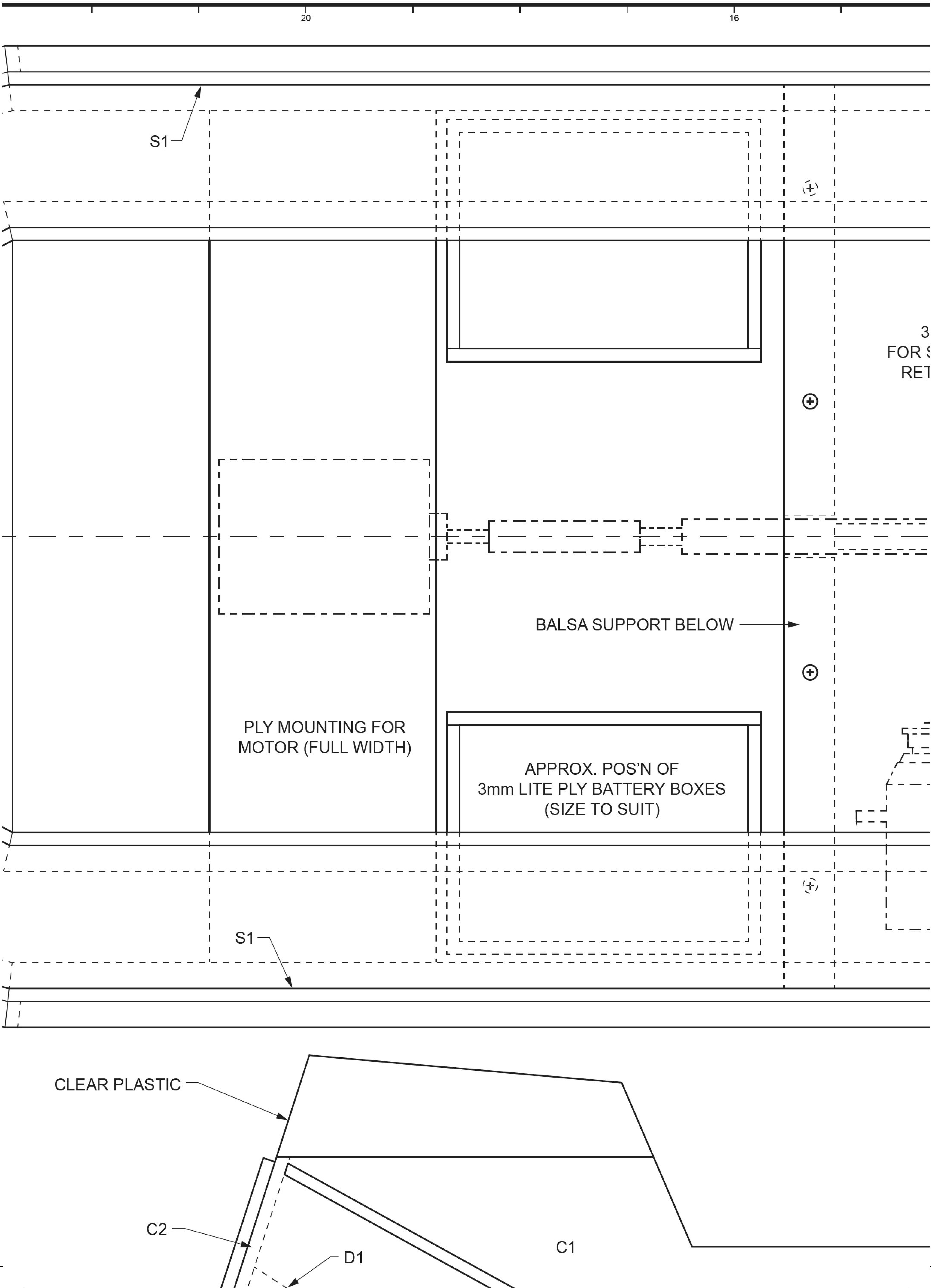
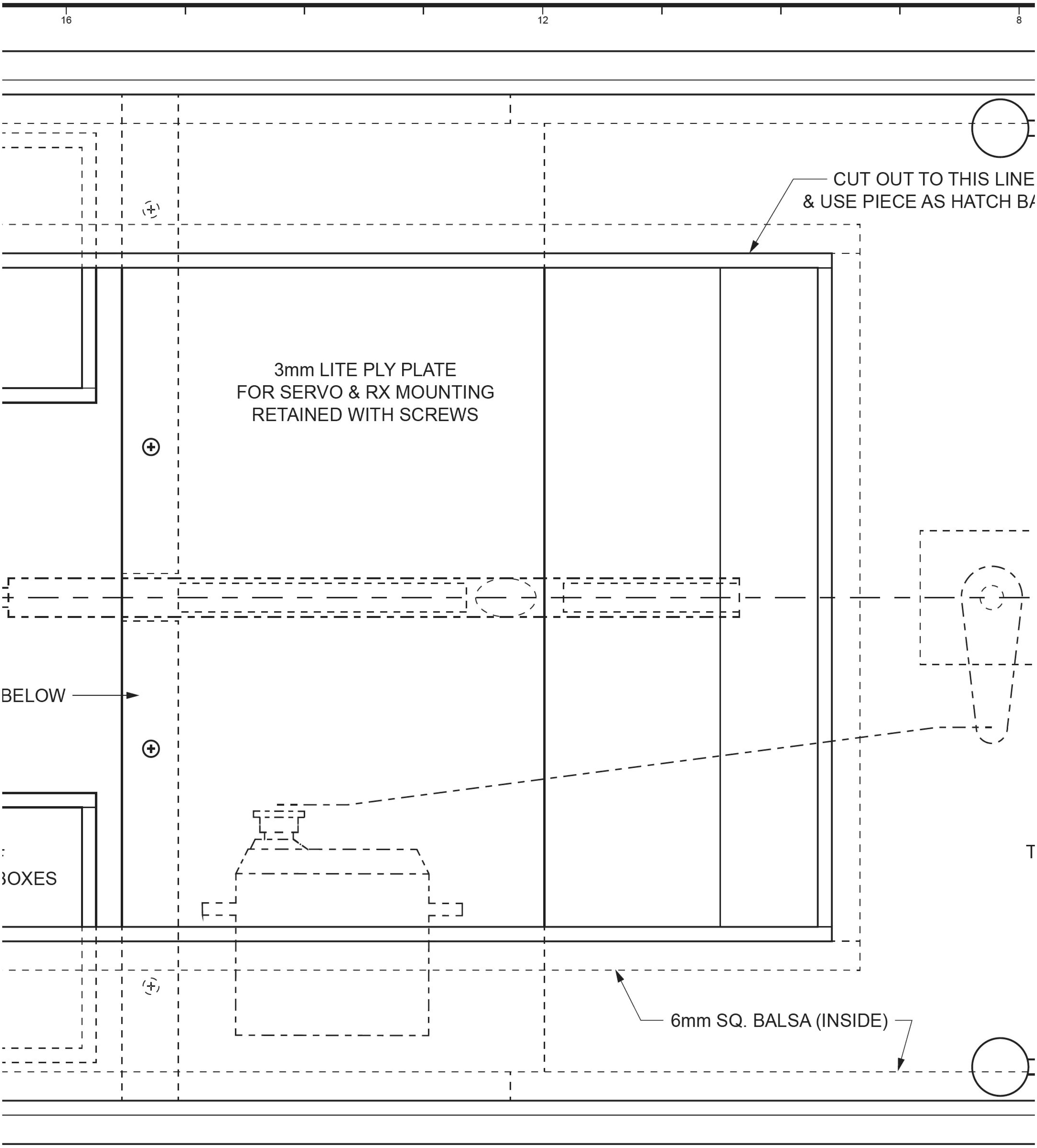
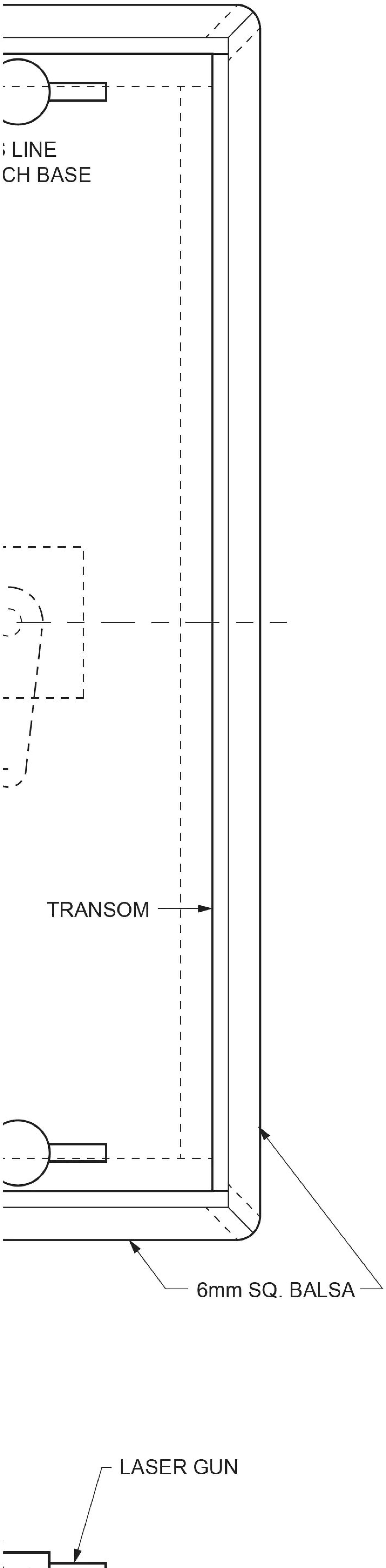

28
24
500
400
300
S2
S3
3mm x 20mm
LITE PLY COAMING
S3
S2
6mm SQ. BALSA
G5
G4


20
16
S1
3
FOR S
RET
BALSA SUPPORT BELOW
PLY MOUNTING FOR
MOTOR (FULL WIDTH)
APPROX. POS'N OF
3mm LITE PLY BATTERY BOXES
(SIZE TO SUIT)
S1
CLEAR PLASTIC
C2
D1
C1


16
12
8
CUT OUT TO THIS LINE
& USE PIECE AS HATCH B
3mm LITE PLY PLATE
FOR SERVO & RX MOUNTING
RETAINED WITH SCREWS
BELOW
BOXES
T
6mm SQ. BALSA (INSIDE)


4 BARREL
LASER CANNON
TRACTOR BEAM

SCALE
INCHES



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PLAWT

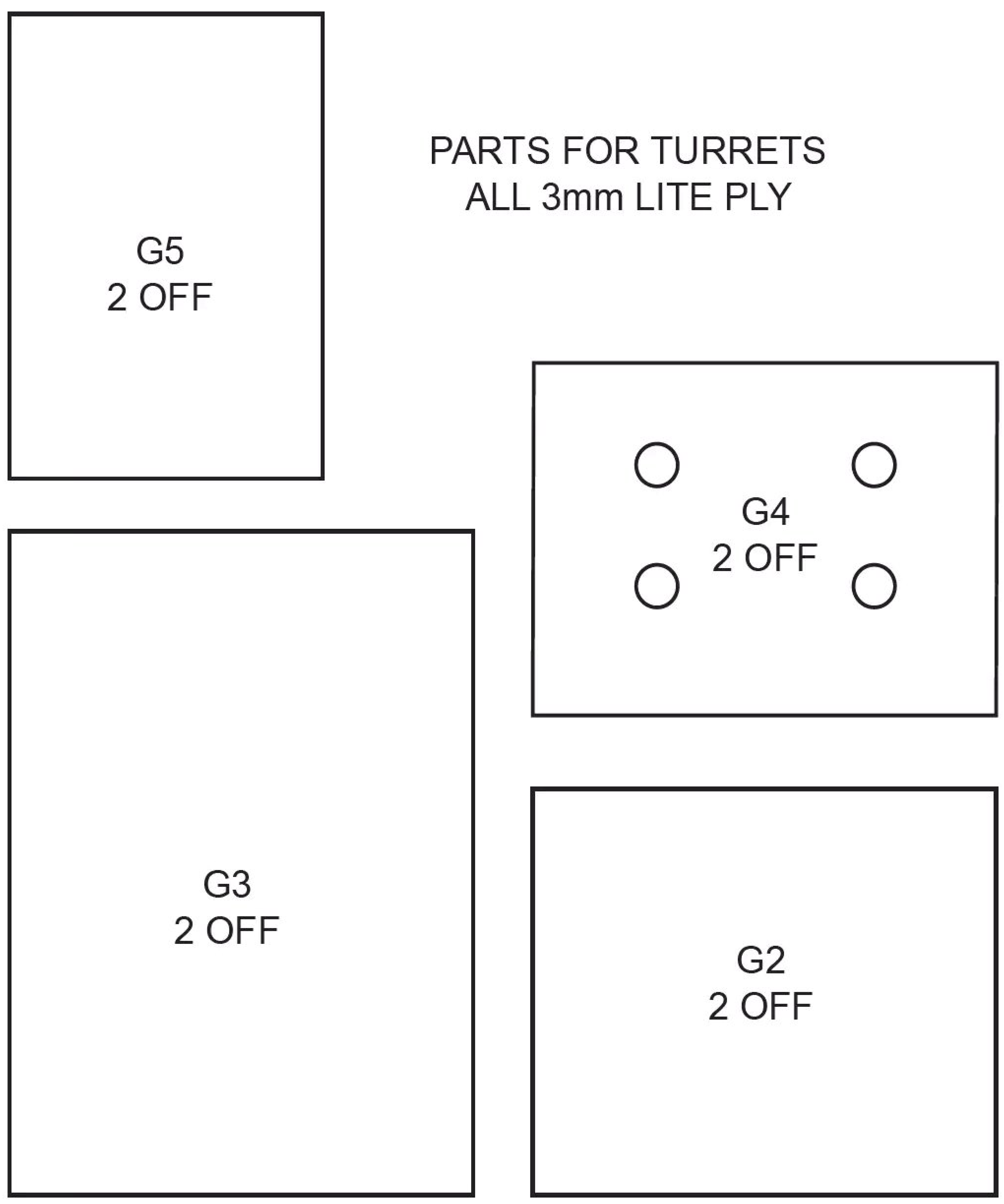
BY HARRY HITCHENES

PLAN No: MM2177	No. OF SHEETS: 1 OF 2	First published in Model Boats November 2024

RIVER PATROL BOAT FROM PLANET VULTAN

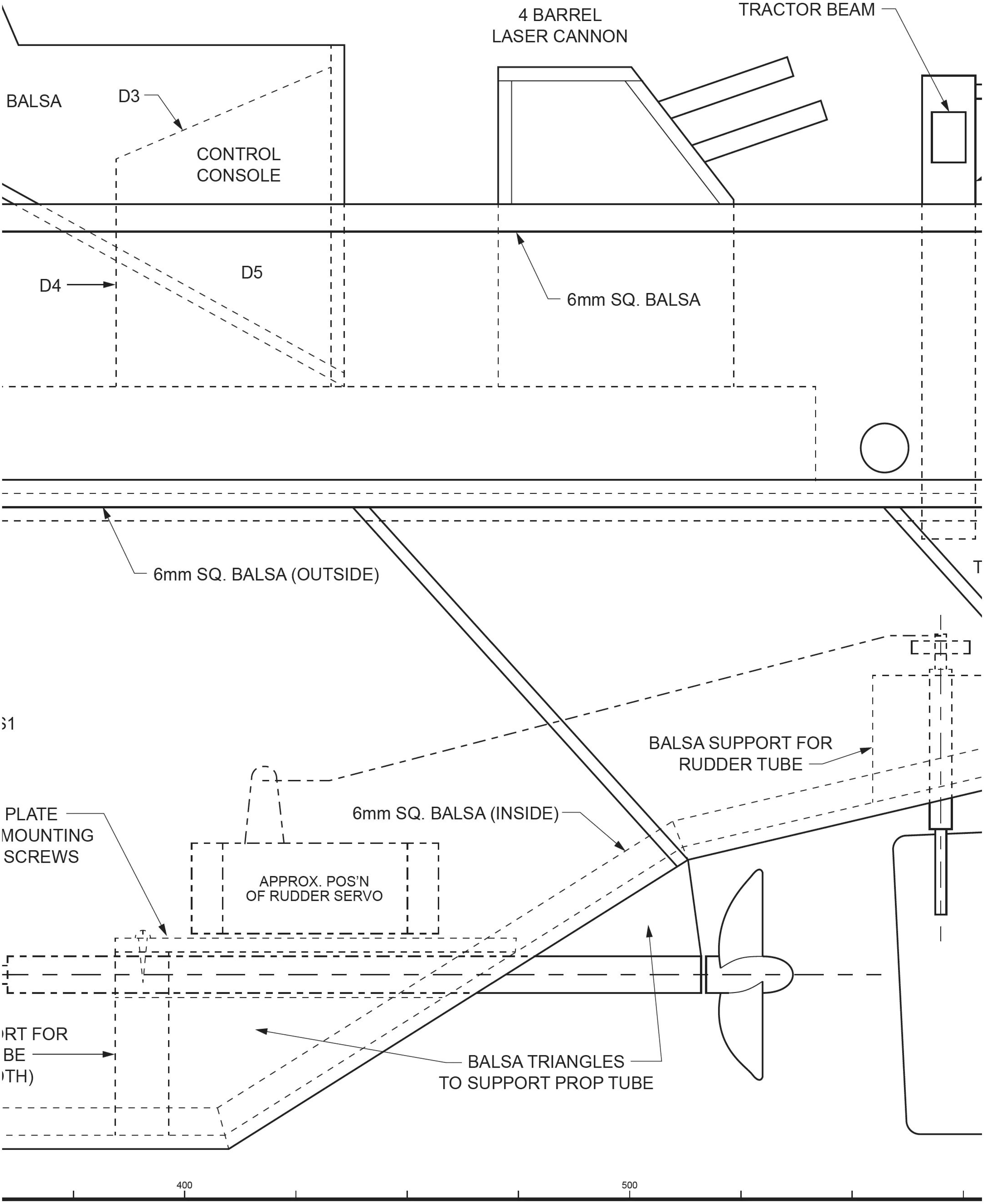
LENGTH	23" - 58cm
WIDTH	8.75" - 21.5cm
MOTOR	MFA TORPEDO 500
BATTERY	2 x 7.2V
A/U.W.	13lbs - 5.9kg

PARTS FOR TURRETS
ALL 3mm LITE PLY




G5
G4
G3
4 BARREL
LASER CANNON
G2
G1
G6
DECK
S3
S2
PL
MO
200
100
SCALE
MM
100
200


CLEAR PLASTIC
C2
D1
C1
3mm SQ. BALSA
D3
G3
CONTROL CONSOLE
CONTRO CONSOL
D5
D2
D4
6mm SQ. BALSA (INSIDE)
6mm SQ. BALS
S1
3mm SQ. BALSA
3mm LITE PLY PLATE FOR SERVO & RX MOUNTING RETAINED WITH SCREWS
A
OF
COUPLING
540 MOTOR
PLY MOUNTING FOR MOTOR (FULL WIDTH)
BALSA SUPPORT FOR PROP TUBE (FULL WIDTH)
200
300
400


4 BARREL
LASER CANNON
TRACTOR BEAM
BALSA
D3
CONTROL
CONSOLE
D4
D5
6mm SQ. BALSA
T
6mm SQ. BALSA (OUTSIDE)
BALSA SUPPORT FOR
RUDDER TUBE
6mm SQ. BALSA (INSIDE)
PLATE
MOUNTING
SCREWS
APPROX. POS'N
OF RUDDER SERVO
RT FOR
BE
TH)
BALSA TRIANGLES
TO SUPPORT PROP TUBE
400
500


6mm SQ. BALSA
LASER GUN
Ø12mm DOWEL
TRANSOM
G3
2 OFF
G2
2 OFF
G6
2 OFF
G1
4 OFF
C4
3mm
LITE PLY
C3
3mm LITE PLY
12
16
20
600
700

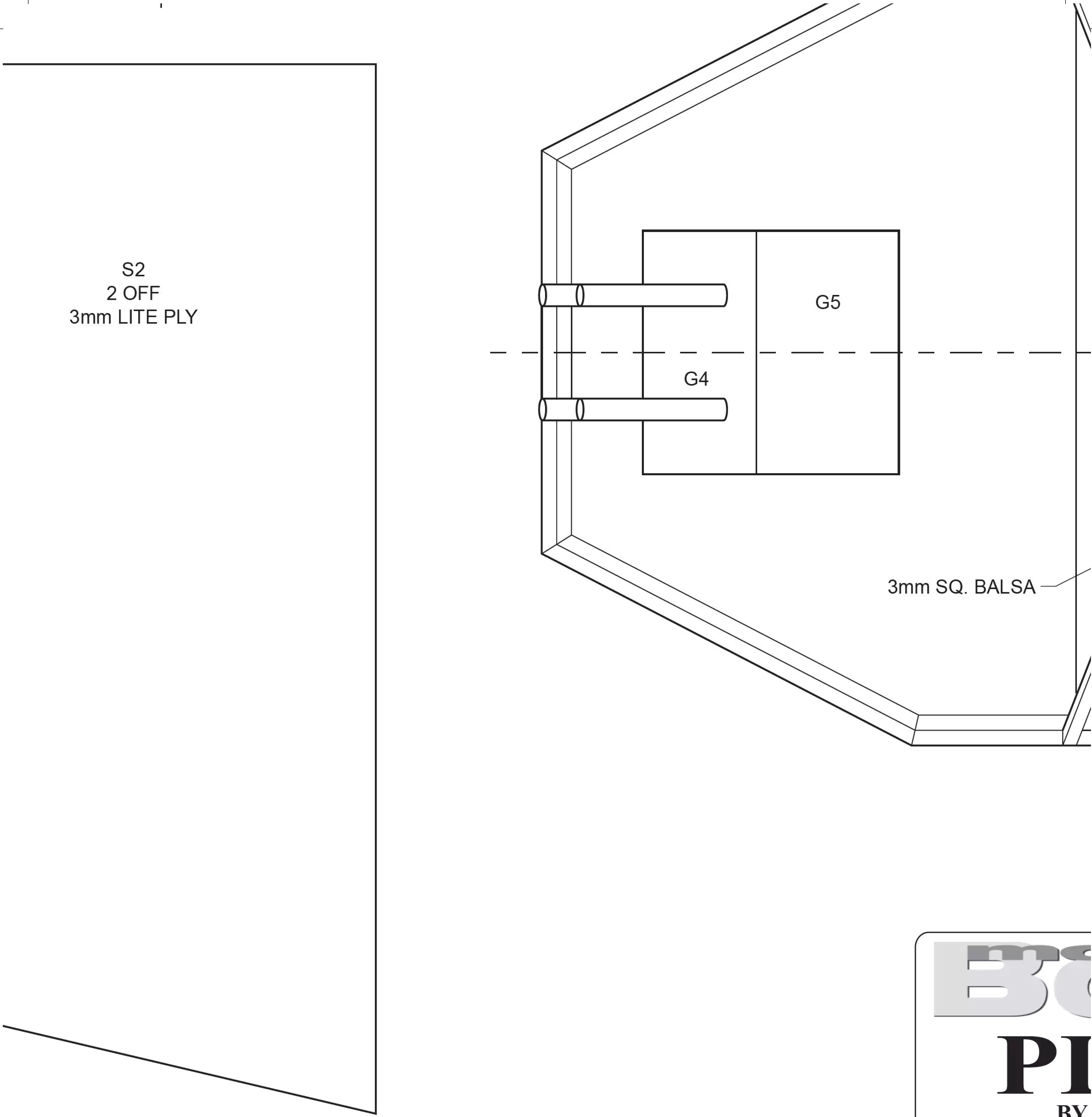

28
24
500
400
300
C1
2 OFF
3mm LITE PLY
C2
3mm LITE PLY


20
16
D3
3mm LITE PLY
D4
3mm LITE PLY
D5
3mm LITE PLY


16
12
8
S1
2 OFF
3mm LITE PLY
C1
C2

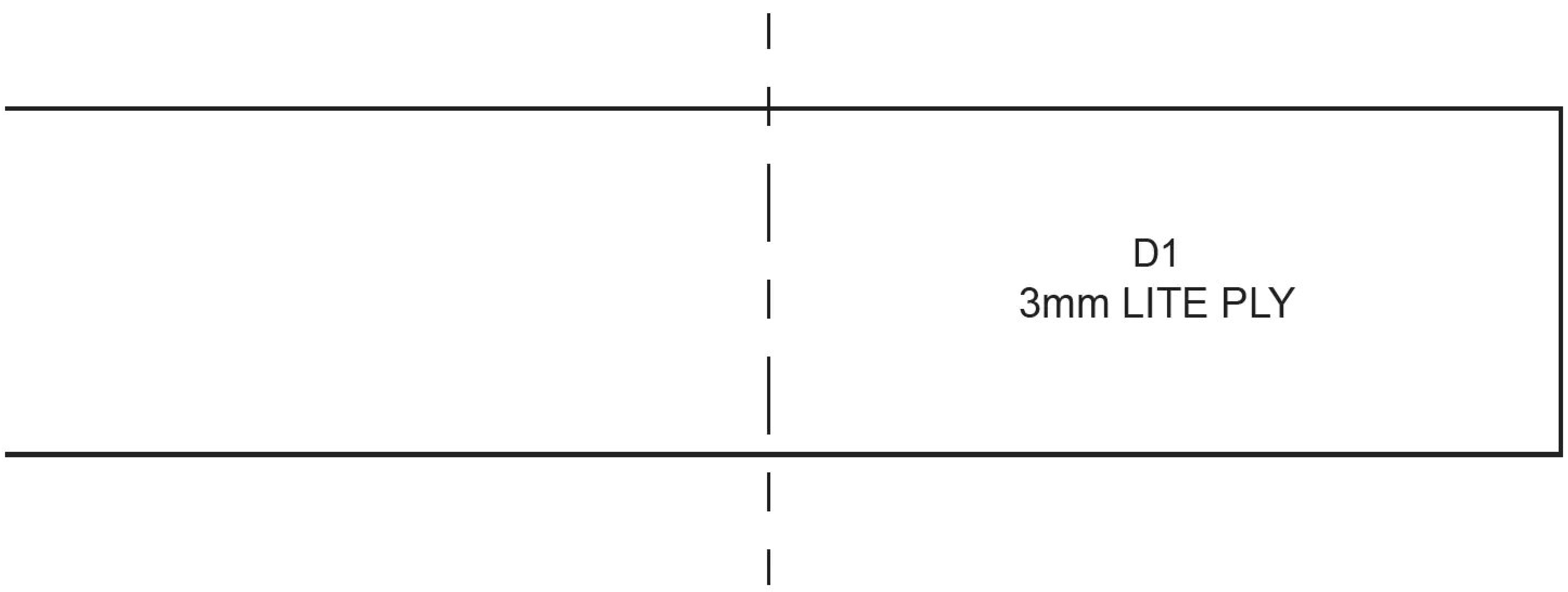

8
4
SCALE
INCHES
4
8
C4
3mm LITE PLY

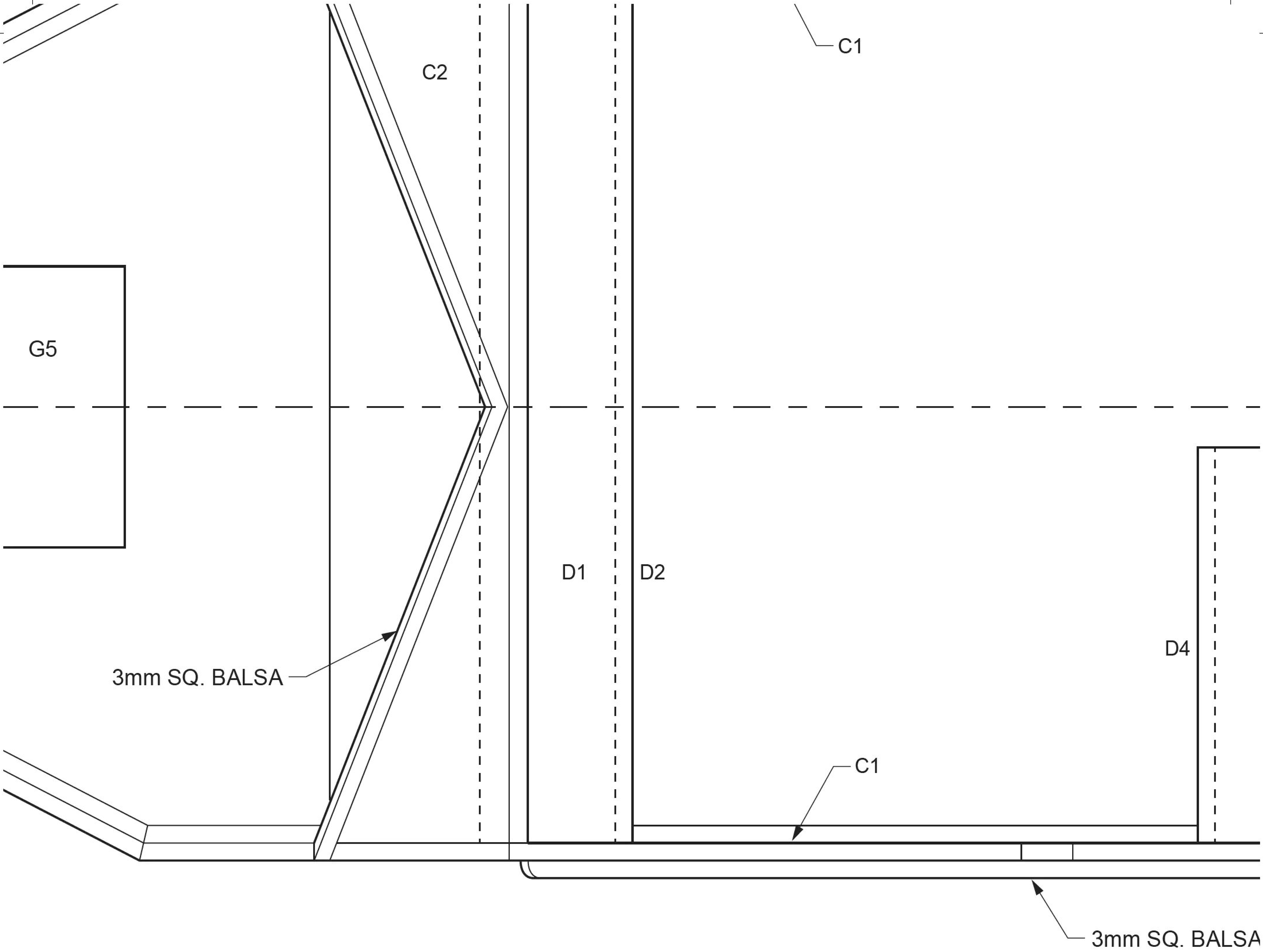

S3
2 OFF
3mm LITE PLY
D2
3mm LITE PLY
SCALE
MM
100
200
200
100



PLAN No: MM2177

RIVER PATRC





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PLAWT

BY HARRY HITCHENES

PLAN No: MM2177	No. OF SHEETS: 2 OF 2	First published in Model Boats November 2024

RIVER PATROL BOAT FROM PLANET VULTAN


C4
3mm LITE PLY
G5
G4
D3
C3
3mm x 20mm
LITE PLY HATCH SURROUND
BALSA
TRANSOM
3mm LITE PLY
12
16
20
600
700