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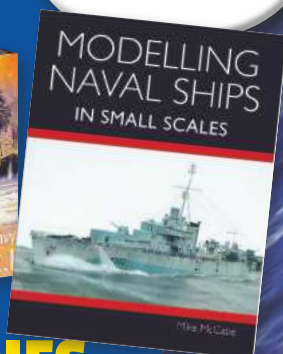


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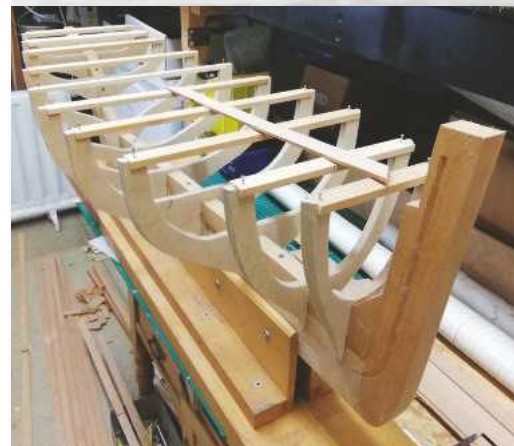
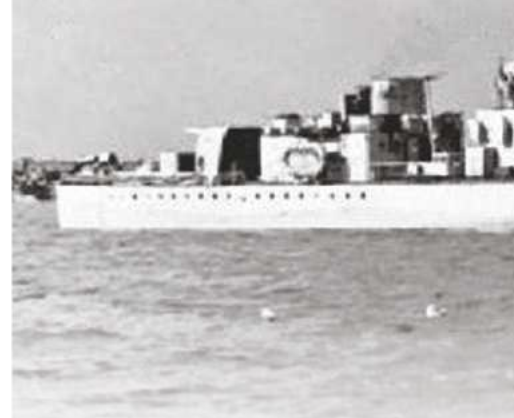
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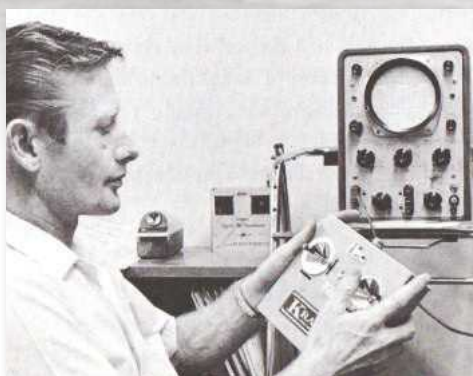
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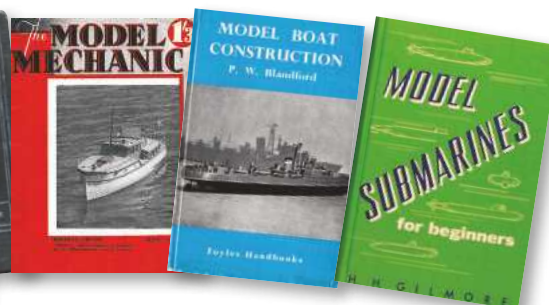
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Just three of the reasons you won't want to miss the September issue of Model Boats revealed

In case any of you are wondering "Really? A UFO on the front cover of Model Boats magazine?",

perhaps I ought to explain the rationale behind the decision... Yes, I know in terms of subject choice it's pretty 'out there' – a very alien concept indeed, but, as pointed out in our qualifying coverline, we are talking an Unidentified Floating Object! Seriously, though, while we of course love seeing this community's incredibly realistic scaled down builds based on actual vessels, I think we also need to celebrate the quirky and one could say damn right brave choices some modellers make, and how successful they are at attracting the attention of the general public with their pondside crowd-pleasers. The thing is, if we want to swell our ranks, then we need to broaden the appeal of 'messing about with model boats' by showing just how much fun it can be and how there are no hard and fast rules when it comes to what is and isn't acceptable thematically.

Naturally, I appreciate that no matter how cleverly they're built, novelty 'boats' aren't going to appeal to everyone. However, a quick glance at the contents listing to the left of this column should quell any fears that we're shying away from the more traditional, and serious, aspects of the hobby.

We've tried keep the topics covered as diverse as possible but, as previously mentioned, future feature suggestions and 'on spec' articles submitted for consideration will always be very welcome.

I've already been totally bowled over by your support in terms of contributions to the 'Your Models' and 'Your Letters' sections; so massive thanks for that and please keep the correspondence coming.

I must also express my gratitude to this month's MB Q&A participant, the Component Shop's Iain Lewis, who took precious time out of his busy schedule for an illuminating chat about the changes and improvements he's made to the Blackpool Model Boat Show since taking over as organiser, the plans for this October's event and his expansion ambitions going forward.

Finally, with three great prizes up for grabs this month, I can't close without saluting the generosity of the kind folks at Mtroniks, Revell and the Crowood Press.

Just as well I'm running out of space as this is starting to sound like an Oscar acceptance speech!

Enjoy your read!

Lindsey

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VM/32FP 32 Foot Pinnace (151mm Long)	£32
VM/34FL 34 Foot Launch (162mm Long)	£35

We have a set of new super detailed and
correctly shaped stern lanterns in 12 and
15mm sizes. These are 3-D printed and
include glazing and brass rod



Vanguard Models next kit almost ready for release - HMS Sphinx - 20 gun 6th
Rate. 1:64th Scale



Our latest main kit development is in progress and should be available end of July/August 2021. The 20 gun frigate HMS Sphinx, 1775. This kit will be one of the most detailed wooden period kits on the market, which will include main gun deck detail, scale quarterdeck and forecastle beams, pre cut top sides, so the only standard planking required will be below main wale level. No less than 35 laser cut sheets and 5 sheets of photo etched parts are included, as well as cast and 3-d printed detail such as cannon barrels, figurehead, lanterns and stern decoration. Laser cut wood is pear, as is the second planking, with the gun deck and upper decks pre cut and laser etched with all planking and treenail detail.

The royal yacht built for The Duchess of Kingston (1778)

This kit has been developed using the original plans, and developed to be as easy to build as it can be, while keeping every detail possible. To achieve this, there are almost 20 separate laser cut sheets, 9 of which are in solid pear wood (Second planking is also pear wood), and 5 photo etched brass sheets. The stern decoration and figurehead are in fine cast resin, and the kit comes with a second stand in acetate, complete with laser engraved nameplate. The decks are also laser engraved and cut in maple veneer. The 81 page full colour instruction manual is the most comprehensive yet, along with 13 full size plan sheets which include all masting and rigging drawings.

All of the area at and above deck level is pre-cut, it is only the area below this that requires planking - even the main wales are pre-cut.

Scale - 1:64
Length overall - 576mm
Width overall - 208mm
Height overall - 480mm

Price - VM/06 Duchess of Kingston - £356.00

VM/06/PB/ Optional machined pear wood block & deadeye set £35.00

UK Postage - £6.50



Vanguard Models is the UK distributor of Master-Korabel kits and fittings, a relatively new manufacture based in Russia. The kits are 1:72 scale and are very pre-fabricated, with some kits, even the hull planking is laser cut and treenail holes etched into each plank, including the decks and inner bulwarks. We also stock the very realistic looking machined pear wood blocks and deadeyes. Visit our website at www.vanguardmodels.co.uk to see the full range of kits and fittings. All Master-Korabel kits are back in stock

MASTER KORABEL



Brigantine PHOENIX 1787, wooden kit

Length: 590 mm.

Height: 440 mm,

Width: 220 mm.

Included Lifeboat MK0101

All hull planking and details are laser cut.

Price - £230 (No Pre sewn sails)

£287 (With pre-sewn sail set)



MASTER KORABEL



NEW

'Morel' - Yefim Nikonov's 'Secret Vessel'

£92.00 (Plus £6.50 UPS Shipping)

Scale 1:36

Museum quality

Assembled dimensions are (LxWxH)
220mm x 140mm x 130mm.

All wooden parts are laser cut to simplify assembly.

All planks are laser cut and pre-shaped.
Highly detailed photo etched brass parts.



Tender AVOS 1806, wooden kit

Length: 420 mm.

Height: 420 mm,

Width: 175 mm.

Included: Lifeboat MK0103

All hull planking and details are laser cut.

Price - £154 without sails and

£199 for the pear wood planking and pre-sewn sails version

HM Brig Sloop Speedy
Lord Cochrane's Command

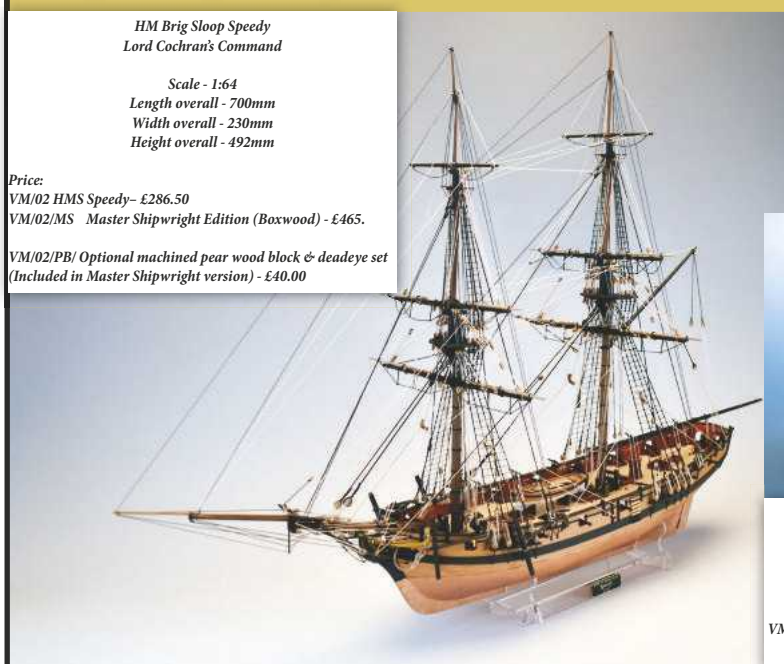
Scale - 1:64
Length overall - 700mm
Width overall - 230mm
Height overall - 492mm

Price:

VM/02 HMS Speedy - £286.50

VM/02/MS Master Shipwright Edition (Boxwood) - £465.

VM/02/PB/ Optional machined pear wood block & deadeye set
(Included in Master Shipwright version) - £40.00



Deck-Boat St. Gabriel 1728, wooden kit

Length: 350 mm.

Height: 300 mm,

Width: 150 mm.

All hull planking and details are laser cut.

Price - £135 without sail set and
£167 with pre-sewn sail set



HM Cutter Alert 1777

Scale - 1:64

Length overall - 637mm

Width overall - 256mm

Height overall - 517mm

Price - VM/01 HM Cutter Alert - £221.50

VM/01/PB/ Optional machined pear wood block & deadeye set £20.00



HM Brig Sloop Flirt - 1782

Scale - 1:64

Length overall - 656mm

Width overall - 230mm

Height overall - 492mm

Price - VM/05 Flirt - £282

Price - VM/05/MS - Master Shipwright Flirt - £450



VANGUARD MODELS
BY CHRIS WATTON

©Vanguard Models Kits are
Designed, developed and made
in the UK

by Chris Watton

Compass 360

Our hobby-related news round-up

If you have a news story for these pages, please contact the Editor, Lindsey Amrani, via e-mail at editor@modelboats.co.uk. Alternatively, pick up the phone and call 01689 869840

WIN!

A COPY OF MODELLING NAVAL SHIPS IN SMALL SCALES!

RRP £16.99!



THE CROWOOD PRESS
estd 1982

Thanks to the kind folks at the Crowood Press, this month we've got a copy of the newly published *Modelling Naval Ships in Small Scales*, which carries an RRP of £16.99, up for grabs!

The book's author, Mike McCabe has been building models for 50 years, has won numerous competition medals and has served as a judge at various international shows. Within the packed pages of this colour illustrated paperback, he provides a wealth of practical guidance on building and painting realistic model naval ships aimed at those of all skill levels, from the novice to the experienced modeller.

MODELLING NAVAL SHIPS IN SMALL SCALES



The more advanced techniques, such as the use of photo-etched parts and creating rough-water effects

Step-by-step photographs demonstrating various techniques

Helpful tips on finishing touches, such as making flags, and additional advice, such as how to take professional-standard photographs of your completed model.

And, by way of example, there's an in-depth look at the creation of four particular models: the Type 45 destroyer *HMS Daring* (Dragon), the pre-war aircraft carrier *USS Wasp* (Aoshima), the River-class frigate *HMS Nadder* (Starling Models) and the 'pocket battleship' *Admiral Graf Spee* (Academy).

To be entered into this prize draw, all you need to do is complete the form included here, cut it out (photocopied entry forms are acceptable should you not wish to deface your magazine) and return it to us at:

Model Boats
Modelling Naval Ships in Small Scales Prize Draw
MyTimeMedia Ltd
Suite 25
Eden House
Enterprise Way,
Edenbridge
Kent TN8 6HF

before the closing date of August 23, 2021.

Good luck, everyone!

CROWOOD PRESS PRIZE DRAW

Name: _____

Address: _____

Postcode: _____

Tel No: _____

Email: _____

With a focus on the popular kit scales of 1:700 and 1:350 in the waterline style, the book features:

The techniques used in building model ships, from the basic to the more complex

The fundamentals, such as building resin kits, painting and weathering, rigging and creating a water effect.

GOT TO HAVE IT?

This book can be purchased directly from the publisher's website www.crowood.com or ordered from your local bookstore quoting ISBN 9781785008504.

Out and about

FENNY STRATFORD CANAL FESTIVAL

- Promising to be great fun, the Fenny Stratford Canal Festival 2021, organised by the Milton Keynes branch of the IWA (International Waterways Association) is scheduled to take place over the weekend of August 7-8, from 11am to 5pm, along the towpath of the Grand Union Canal between Bridge 96 (Watling Street) and Bridge 97.
- Admission to the event is FREE of charge and visitors will be able to enjoy a floating market, model boats, craft stalls, a waterway information point and lots more. For more information/updates, visit www.waterways.org.uk/miltonkeynes



FENNY STRATFORD CANAL FESTIVAL
 7th - 8th AUGUST, 11AM - 5PM
 Towpath, Grand Union Canal,
 between Bridge 96 (Watling Street)
 and Bridge 97

FLOATING MARKET,
 MODEL BOATS, CRAFT STALLS,
 WATERWAY INFO POINT AND LOTS MORE

FREE ADMISSION
 Everyone welcome to join in the fun

ORGANISED BY
 IWA MILTON KEYNES BRANCH
WWW.WATERWAYS.ORG.UK/MILTONKEYNES

WIN!

WIN REVELL'S NEW US NAVY SWIFT BOAT KIT!

RRP £21.49!



This month we're able to offer you the chance to win Revell's newly tooled and imminently due for release 1:72 scale US Navy Swift Boat Mk.1 PCF [Patrol Craft Fast] kit – as previously announced in our June 2021 issue.

The 93-part kit has been categorised a Level 4 build, i.e., best suited to the more experienced modeller (watch out for a box rattle review coming soon!) and will carry an SPR [Suggested Retail Price] of £21.49.



To be entered into this prize draw, all you need to do is complete the form included here, cut it out (photocopied entry forms are acceptable should

you not wish to deface your magazine) and return it to us at:

Model Boats
 Revell Swift Boat Prize Draw
 MyTimeMedia Ltd
 Suite 25
 Eden House
 Enterprise Way,
 Edenbridge
 Kent TN8 6HF

before the closing date of
 August 23, 2021.

Good luck, everyone!

GOT TO HAVE IT?

To order see ads in this magazine or visit Revell's website at www.revell.de for stockist details.

REVELL SWIFT BOAT PRIZE DRAW

Name: _____

Address: _____

Postcode: _____

Tel No: _____

Email: _____

TERMS & CONDITIONS

Entry is open to all UK residents with a permanent UK address, with the exception of employees (and their families) of MyTimeMedia Ltd, its printers and agents, and any other companies associated with the competition. All entrants must be aged 18 or over. Only one entry per household is permissible. No responsibility can be accepted for entries lost, damaged or delayed in the post. Winners will be notified by post. Prizes are not transferable to another individual and no cash or other alternatives will be offered. The promoters reserve the right to amend or alter the terms of the competitions. The winner will be chosen from all correct entries received by the closing date specified. Please note that data will be managed in compliance with GDPR law. Our privacy policy can be found at www.mytimemedia.co.uk/privacy. The decision of the judges is final and no correspondence will be entered into.

Club News

ELLESMERE PORT MODEL BOAT CLUB

Ellesmere Port Model Boat Club has unexpectedly been asked to vacate its sailing area at Hooton Park Trust with immediate effect, so, while it is hoping to have display sailings, such as tug towing and steering competitions, at the Museum

now that the Covid restrictions are being eased, sadly individual sailing is currently not possible. An alternative venue where the club pool can be erected is currently being sought but securing another site may take some time. We hope to bring you an update on this story in the near future. ●



THE BLACKBURN & DISTRICT MODEL CLUB

Chris Taylor, Chairman of the Blackburn & District Model Boat Club, has asked us to point out

that the Club has now resumed sailing and is keen to welcome new members. Chris tells us: "We are a small group, sailing all sorts of boats on a lovely park lake. Anyone in the East

Navarino Models' new Trechantiri

"The kit includes everything you need to build the 550mm static model, but – and we're just putting this out there – we would absolutely love to see someone install the necessary gear to turn the Trechantiri into a fully working R/C model!"



Delightfully Greek, Trechantiris are still a familiar sight throughout the Aegean.

In the June issue of Model Boats we included a sneak peek at the gorgeous 1:20 scale Trechantiri that can be built from Navarino Models' new kit, but we're delighted to now be able to bring you a much more detailed look. The kit (Ref. A203) is priced at €199 and includes everything you need to build the 550mm static model, but – and we're just putting this out there – we would absolutely love to see someone install the necessary gear to turn the Trechantiri into a fully working model! ●



ABOVE: For the assembly of the fishing winch, there is a detailed 14 element plan, and detail includes, for example, a drum made of aluminum, machined on a lathe.



ABOVE: The kit contains everything required to build the 550mm in length model and supporting paperwork includes a 680 x 600mm sheet with two profiles and one bird's eye view, a parts list, three A3 detail plans, four A4 plans and four A4 building instructions (in both Greek and English). BELOW: Two layers of strips are suggested for hull planking: the first being 5 x 1mm lime wood and the second 0.6 x 4mm beech strips.



GOT TO HAVE IT?

To order, or to view all the models in the range, visit www.navarinomodels.com



Lancashire area interested in model boats is invited to contact our Membership Secretary, Les Pollard, by email les29pollard@gmail.com or mobile 07445 879256" ●



LAKE BANK MODEL CLUB

Lake Bank Model Club has now been operating for some 35 years but is always ready to extend a warm welcome to new members.

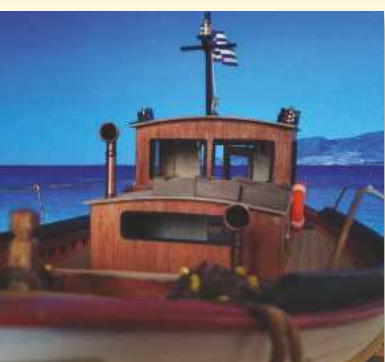
In addition to sailing on the club water (at Little Willow Lake in Milton Keynes) and monthly meetings in a local hostelry, members can enjoy group visits to other venues throughout



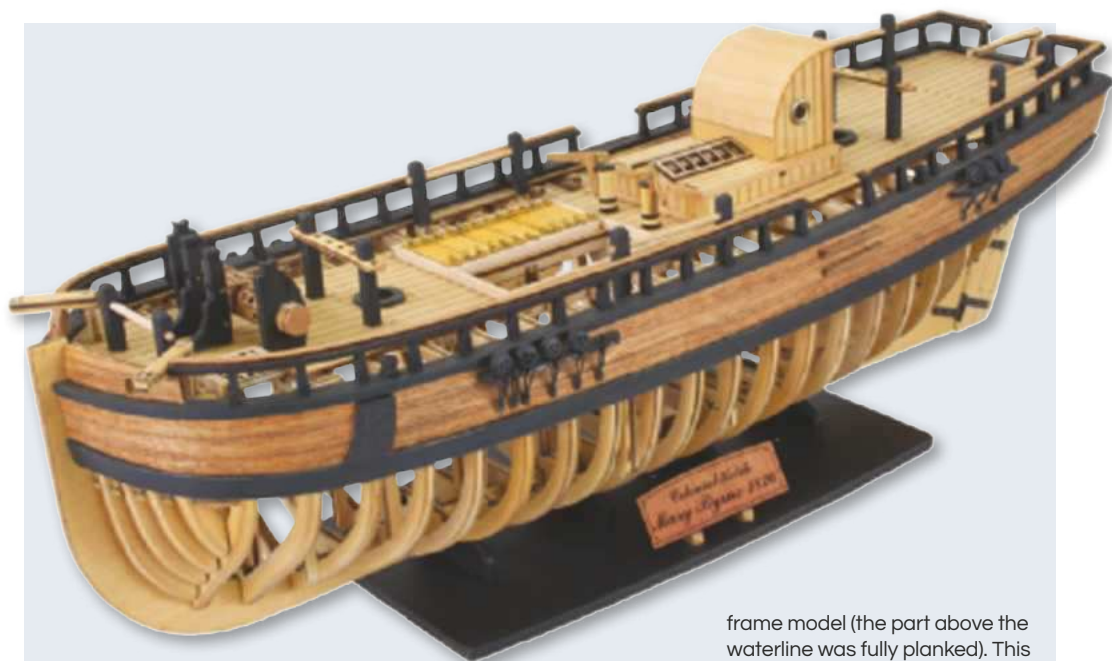
the year. For more information check out the club's website at www.lakebankmodelclub.co.uk or visit the club's stand at the Warwick International Boat Show (this year scheduled for the weekend of November 6/7 at the Warwickshire Event Centre). ●



skill level Fishing Trechantiri "Aretousa"
Hellenic Traditional Hulls
Scale: 1/20 L.O.A. : 550mm



BELOW: The nets are not provided, but you can create your own with simple gauze.



Mary Byrne 1926 Admiralty Model

An interesting and unusual Admiralty 1:48 scale static model of the colonial ketch *Mary Byrne*, 1926, has just been introduced to the range of kits offered by the Model Shipyard. This highly detailed and intricate kit, which will appeal to modellers looking for a challenging and interesting build, has been expertly designed by John Staib, master model ship designer and constructor.

Admiralty models were introduced in the 17th century, when the British Admiralty demanded a model as well as the plans for each new type of ship. The characteristic feature of Admiralty models was that the underwater hull was built as a

frame model (the part above the waterline was fully planked). This characteristic feature allowed the construction of the hull frames and deck beams, along with all supports, to be visible.

The kit (Ref. KTMS 1022) comes complete with quality fittings, clean and accurate laser cut parts and highly detailed written and colour illustrated building instructions. As with all new release model ship kits from Modellers Shipyard, the frames of the kit have laser scored fairing lines that ensure the fairing of the frames is easy, accurate and symmetrical.

The kit is priced at £167, plus shipping. ●



GOT TO HAVE IT?

To order, visit www.modelerscentral.com



MB Q&A Showtime!

Iain Lewis, proprietor of the Component Shop, chats with our Ed, **Lindsey Amrani**, about the improvements and changes he's made to the Blackpool Model Show since taking over its organisation, and what visitors can expect from the 2021 event planned for this October...



Iain and his wife Natasha (who plays an integral part in the smooth running of the Component Shop).

Q Before we start discussing the Blackpool Model Show and this year's event, can I first ask you to tell our readers a little bit about yourself, your background and, for any of those unfamiliar with the Component Shop, your business and what it offers the model boating fraternity?

A I studied electronic Engineering at the University College of North Wales in Bangor, afterwards working in a telecoms manufacturing company as senior new product development engineer. While still in this position I started Component Shop, initially selling redundant components (LEDs) from the company I was working for to raise funds for charity. As there was clearly a demand, I then bought some LEDs directly from the manufacturer and extended the range offered.

The move to batteries happened quite by chance. Looking for some reasonably priced rechargeable batteries for a camera, I'd trawled the listings on eBay, placed auction bids on a number of lots, but kept losing out by just a few pennies. This quickly began to feel like a ridiculous waste of time, so I decided to source some directly from a manufacturer. I therefore ordered a couple of cartons of rechargeable AA batteries and offered the excess on eBay for a fixed 'Buy-It-Now' price. I was pretty much the first to do this

“Having an electronic engineering background gives me a greater understanding of some of the challenges faced by modellers”

and, as you would expect, things went well. It was literally a case of selling two cases, using the cash to buy another three, selling those, buying another five, off-loading those, buying another eight, and so on. It wasn't long before I added AAA batteries, then chargers, to my stock and so the Component Shop was born. By offering quality products that I had fully checked out first and keeping the price competitive, the business grew and grew.

This all started in 2003. Then, in 2006, when manufacturing started moving to China, I was made redundant, so I decided to turn the Component-Shop into a full-time business, rather than the 'hobby'/sideline it had been up until that point. By attending model shows across the country, I was able to promote and grow the business, constantly expanding the range of quality products offered.

Having an electronic engineering background gives me a greater understanding of some of the challenges faced by modellers. I also understand that the 'one size fits all' approach doesn't work; sometimes people need a customised product, even if it is just a different connector on a battery pack. This kind of service isn't broadly offered by others but is standard for us. Too many businesses are simply what I call 'box sellers'; they simply sell you boxes off the shelf with little understanding of the product inside, and they certainly have no ability to offer any customisation. We are the opposite, and I feel this is what modellers like and what sets us above the competition.

Q Without going into detail, I understand that the Blackpool Model Show got into some difficulties a few years ago. When, why and how, then, did you come to take over as organiser?



A In March of 2016 it became known that the organiser of the Blackpool Model Boat Show had disappeared and this show, as well as others he'd run, would not take place unless someone stepped in to take up the challenge. I'd long been of the opinion that even though the Blackpool event seriously underperformed it had great potential, so I decided to pick up the reins

and see what could be done. After all, how hard could it be?

The first challenge quickly became apparent when I started to contact the event's various suppliers (table hire, venue hire, advertising, etc). It turned out their bills had all been left unpaid by the previous organiser. Straight away, therefore, I had my work cut out convincing them that I had nothing to do with him.

Having cleared this up, however, they were still very obviously nervous about getting involved with the show again and all insisted on full payment up front. As a consequence, the run up to the first show under my watch proved a very anxious time for me, as I had to lay out literally thousands of pounds with no real guarantee things would actually work out.



“With an annual event like Blackpool, probably the biggest challenge is putting on a show that’s fresh and exciting... For me, it’s all about ringing the changes and encouraging new and/or different attractions”

Q Since then, you’ve made numerous other changes and improvements. Can you elaborate?

A With an annual event like Blackpool, probably the biggest challenge is putting on a show that’s fresh and exciting. Many modellers tend to take the same models along to shows for a number of years, and I didn’t want a situation to develop where visitors felt they’d seen it all before and so wouldn’t bother to come again. For me, it’s all about ringing the changes and encouraging new and/or different attractions; for example, getting clubs that haven’t exhibited at Blackpool before to attend, increasing the variety of trade stalls and products on offer, etc.

Q Organising a major event like this on top of running a business means taking on a huge workload. So, who helps out?

A Fortunately, my wife, Natasha, is an integral part of the business, and while she doesn’t get involved with the actual show organising, she is very much there on the day, as it were.

Q Having taken on the challenge, which of the issues you were aware of did you feel were the most pressing. And how did you go about addressing and tackling them?

A There were so many aspects of the show that desperately needed to be improved upon. Advertising had always been poor and the event itself had always had a sort of thrown together at the last-minute feel to it. I set about talking to numerous people – those in the hobby and those in the market sector that supports it – and reaching out to as many clubs

as I could find contact details for. The majority didn’t even bother to reply and, amongst those who did, many expressed the view that after a disappointing show in 2015 they weren’t keen repeat the experience. Fortunately, there were some who were prepared to give the show another go. Also, by opening things up to other forms of modelling (e.g. military models, trucks, etc) I was able to attract a whole new crowd of participants and visitors. I firmly believe that is the show is to succeed, then it needs to become more welcoming, inclusive and diverse.





Another person I must mention is Dave (Stavros) Jones. He doesn't do any of the pre-show organising but is kind of my No. 2 over the weekend.

Finally, I have to say a big thank you to the guys from the Blackpool Model Boat Club, as without their help the show wouldn't be possible. In particular, a special mention to Nick should be made, as he works tirelessly over the weekend, helping to keep things running smoothly, assisted by his young daughter, Katie, who stands at the door (on a chair, as she isn't very tall!) checking everyone's wrist bands before letting them in.

Q Due to the COVID-19 pandemic, 2020 saw events cancelled nationwide. I'm sure that many readers will, therefore, be excited to learn that there are plans for the Blackpool Model Show to return this October, Great news, but naturally this will depend on no major changes

"The hotel is being incredibly helpful in terms of planning, and because it runs events all the time has a wealth of experience in dealing with COVID safe practices. Your readers can, therefore, rest assured we will be doing everything possible to ensure everyone's safety at this year's Blackpool Model Show"

being made to the Government's route map out of restrictions. In view of this, how difficult and worrying has it been getting things organised amidst the ongoing uncertainty?

A The reality is it's impossible to make any 'set in stone' plans right now, so it's simply a case of waiting to see what happens and responding accordingly. The government's road map currently states that by October we should be restriction free, and we can but hope that will indeed be the case. But, of course, we'll still be providing hand sanitising stations and following all the other COVID-related safety guidelines to the letter. One option we're looking

into is the possibility of splitting the show around a number of other function rooms at the Norbreck Castle Hotel, thereby expanding the layout space beyond the venue's main halls. Although these are smaller rooms, it would spread things out a lot and therefore make social distancing much easier to observe. The hotel is being incredibly helpful in terms of planning, and because it runs events all the time has a wealth of experience in dealing with COVID safe practices. Your readers can, therefore, rest assured we will be doing everything possible to ensure everyone's safety at this year's Blackpool Model Show.

Q Now we've got that out of the way, what can visitors look forward to at the 2021 show?

A With so much uncertainty it's difficult to do anything too adventurous, so we are keeping reasonably close to the existing format, with the possible exception of using additional function rooms at the hotel. There are certainly going to be exhibitors and traders at the show who've never participated before and, after two years of the event's absence, we're hoping that many people will be showing models for the very first time, so it should be quite interesting.

The usual competitions will again be run. Every model on display is deemed to be entered



Shooting the breeze



website or through Component-Shop (www.componentshop.co.uk/01248719353). I would also like to point out that you don't need to be part of a club, we're more than happy to extend this invitation to all modellers; so, if you feel you have something worth displaying, please get in touch!

As keen supporters of the RNLI, we're offering free space for its stalls, and are doing likewise for the Bring & Buy stand run by the Blackpool Model Boat Club, which will be donating all of its proceeds to the charity. This show is not run for profit; instead, not only is any money made invested into the following year's event but it's also used to top up the donations made and funds raised for the RNLI over the course of the weekend.

unless its owner specifically requests it be excluded. The categories will include: scratch built models; semi-scratch built models; kits; fishing vessels; tugs; rescue & lifesaving boats; pleasure craft; rigged and sail boats; military ships/boats, including subs; work boats; tanks; trucks; construction models; novelties and exhibitors. The best in each category will be awarded with an engraved glass trophy.

This year we are replacing the Best in Show category with the Dave Milbourn Challenge Trophy, in memory of our very good friend Dave, who sadly passed away earlier this year after a battle with cancer. A couple of years ago I asked Dave to judge the Best in Show class and he said to me that rather than judging the models based the level of skill demonstrated, or

“This show is not run for profit; instead, not only is any money made invested into the following year’s event but it’s also used to top up the donations made and funds raised for the RNLI over the course of the weekend”

the complexity of the build, he'd prefer to base his decision on which of the models he most like to take home with him. So, this winner in this category will not necessarily be the best model in terms of proficiency or intricacy, but rather the one that attracts the most interest.

The show website contains lots

of information and will have a list of exhibitors and traders, which will be regularly updated as attendees confirm and/or newcomers are welcomed aboard. Any exhibitors wishing to attend can contact us either via the show's

QHow much will tickets to the show cost? How can our readers obtain these tickets? And, last but not least, I understand you have struck a deal with the Norbreck Castle Hotel (the venue at which the



“To make things even more attractive to those travelling any distance to Blackpool, we’re also able to offer a discounted package of accommodation and show entry”

show itself will taking place) and can therefore offer a special weekend package deal that incorporates accommodation, so please fill us in on the details here, too...

A Tickets can be bought on the show’s website (www.blackpoolmodelshow.co.uk) and there are savings to be made by placing advance bookings rather than paying on the door. For example, a 1-day ticket is £6.50 in advance, or £7 on the door. A 2-day ticket is £10 in advance, £11 on the door.

To make things even more attractive to those travelling any distance to Blackpool, we’re also able to offer a discounted package of accommodation and show entry at £95 for a single room, with B&B on the Friday and Saturday nights and a weekend show pass, or £175 for a double or twin room, again with two nights B&B with two weekend show passes. There are also options for additional nights and dinner at the hotel. I don’t think that any other show offers a full weekend deal like this. Arrive on Friday, check in at the hotel, pick up your show passes, visit the famous Blackpool Illuminations,

then go back to the hotel for the evening entertainment and a few drinks; the following morning, you can enjoy an ‘all you can eat’ breakfast before heading down the corridor and into the show. The perfect chilled out weekend! The show is fully geared up as a family event, but if you suspect two days may be a little too much for the kids, there’s always Blackpool’s famous pleasure beach and everything else the resort has to offer to keep them amused.

Q Finally, what can you reveal, if anything, about your ambitions for the show going forward?

A My hope is that going forward those in the model boating fraternity will come to see the Blackpool Model Show as the must-visit event of the year and that, by embracing a much wider-spectrum of modelling interests, we will further broaden its appeal and the show will continue to grow, thereby eventually fulfilling its true potential. ●



QUICK FIRE QUESTIONS



Q What’s the best thing about running your own business?

A *Not being told by idiots what to do!*

Q What’s the worst thing about running your own business?

A *Government (especially EU) regulations & red tape.*

Q If we weren’t in the middle of a global pandemic and I could grant you both the time and money required for either, would you rather go backpacking for a year or be flown first class to a two week stay at the most luxurious hotel in your dream destination?

A *Backpacking 100%, although my wife would go for the luxury option, so that could cause a problem.*

Q Your cooker has exploded, so your only option is a take-away. What would you be eating?

A *Curry, every time!*

Q Let’s go a bit Walter Mitty... What high level position do you reckon it would be most easy to con people into believing you were fully qualified for?

A *Scientist*

Q Name a commonly used phrase that you find intensely irritating?

A *Adding “yeh” to the end of every sentence or, even more annoying, constantly inserting the word “like” within a sentence.*

Q So, annoying, yeh? So, like, who’s your favourite comedian, or, like, what’s your favourite situation comedy?

A *Only Fools & Horses*

Q If, at the exclusion of everything else, you had to dedicate your entire life to a single cause, what would it be?

A *Finding a cure for cancer*

Q If you could interview one famous person, living or dead, with no topics off the table and completely candid answers guaranteed, who would it be?

A *Prince Philip*

Q What could you give a 30-minute impromptu lecture on?

A *Lighting models with LEDs and other model electronics*



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.....Postcode.....

Account holder.....

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Sort code.....Account number.....

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Wired for Sound

Stan Reffin and the team at Mtroniks explain how the early D.I.Y. circuits and the first commercially available ready-built units gave way to the infinitely superior digital options available today...

ABOVE & BELOW: This early circuit for a D.I.Y. single-cylinder diesel unit built by Stan about 29 years ago by following instructions and diagrams published in a modelling magazine underlines just how much technology has moved on since then!



Many years ago, sound systems for model boats were either ones you built on Vero board or early commercial ones. Features on D.I.Y. circuits published in various magazines included illustrations and a list of the components that would be required. If you were lucky, your completed circuit would work; all too often, however, the outcome was a deafening silence! The first commercial offerings, therefore, seemed a big leap forward. These small compact units were ready built and easy to wire up. The sound quality achieved,



Keen to get a modeller's perspective on a new sound system it was bringing to market, Mtroniks supplied Stan with the system seen fitted here in his lobster boat to install and test.

however, left much to be desired, being little more than white noise.

Fortunately, as electronics advanced, digital sound systems started to come become available. At this point, I was approached by Mtroniks and asked if I'd be willing to fit and test a small diesel digiSOUND unit in one of my model boats. Always keen to try something new, I agreed. Much to my delight, the unit was easy and straightforward to install; the markings on the sound unit made the instructions simple to follow and so wiring up proved a breeze. What's more, the resulting sound effects were infinitely superior to anything I'd previously experienced.

So, how were these digital units developed? I think that's probably best explained by the highly switched-on folks at Mtroniks, so it's over to them...

From white noise to digiSOUND...

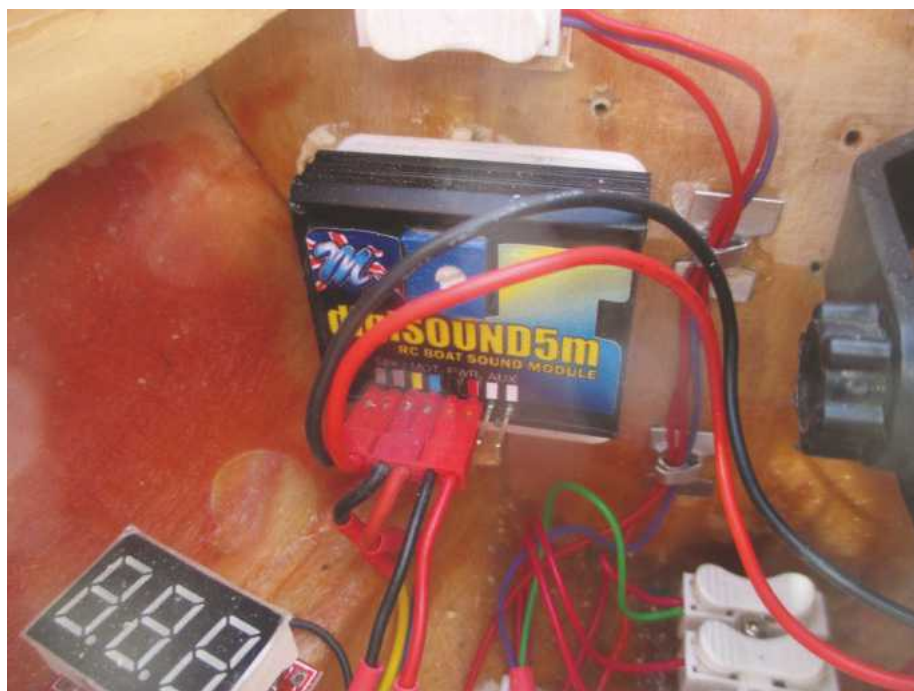
"Over the last 25 years or so we've seen dramatic progress in the capabilities of computer 'chips'. Integration, the process of incorporating computing power into a small square of silicon material, has moved forward in leaps and bounds, allowing ever more transistors to be squeezed in per square millimetre! These tiny electronic switches act as building blocks for electronic memory or for the logical and mathematical operations that are the basis for modern computing.

It doesn't seem so long ago, though, that a sound unit for a model boat was likely to prove either costly, unreliable or be of questionable audio quality – in fact, more often than not you'd have to come to terms with all three of these undesirable traits!

In the past sounds were often achieved by making use of electronic effects like white noise or the rapid switching of oscillators, which in combination with electronic filters would provide an end result that roughly approximated to an engine running. That's not to disrespect what was achieved, the best was done with the tools available; these tools were, however, often quite limited, particularly at the lower-cost end of the market.

At Mtroniks, therefore, we decided not to attempt a sound system until a more authentic result could be achieved. With all the improvements being made in electronics we could see that time approaching, and if we were going to bring a product to market, we wanted it to one we would be genuinely proud of. As anticipated, in the early 2000s it became clear that, at a reasonable cost, we could build a piece of equipment that would offer our customers truly realistic sound.

Firstly, audio from actual vessels/vehicles/locos, etc, needed to be professionally recorded. Obtaining 'clean' sound clips out there in the real world, where other vehicles, birds, the wind, etc, insist on adding their own contributions, isn't an easy task – but obtained they were. Making use of the signal processing facilities of the powerful, compact,

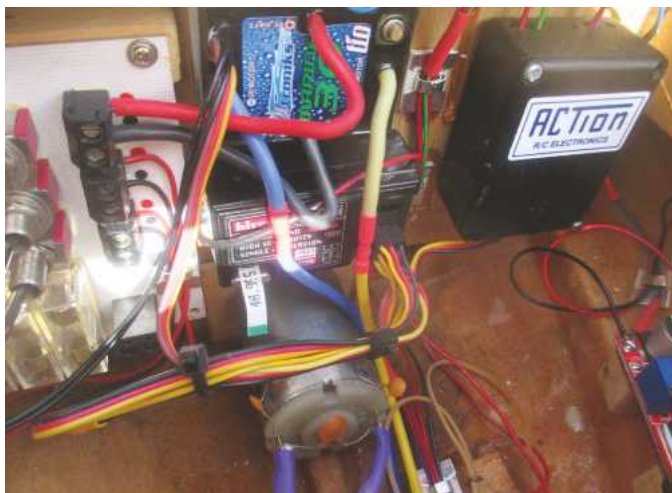


ABOVE: A close up of the Mtroniks digiSOUND unit Stan was supplied with, clearly illustrating the connection points.
BELOW: The sound unit and speaker in situ.



energy-efficient, micro-processors that were becoming available at the time, we were able to faithfully reproduce, seamlessly piece together and suitably process those audio files, thereby allowing us to squeeze the right amount of true audio information into a tiny, but impressively capable, computer memory chip. Engine sounds could be made to convincingly change their tone and behaviour depending on what the hobbyist demanded from a model's motor. We were also able to

The small yellow and blue cables from the motor to the sound unit; these allow the sound system to speed up.



Stan's sound unit is turned on from an action switch. However, you could instead use Mtroniks nifty 'Micro-Switcher' unit. Specifically designed to provide sound on/off operation, with authentic audio start-up and shutdown sequences, this unit functions by using just one channel in your radio system.

incorporate a variety of other desirable audio effects, such as credible horn sounds, etc.

That's how Mtroniks' digiSOUND range of very small true-sounding units for R/C model boats, cars, etc, came about. Also, we were able to produce, using the high capacity of desktop computer portable storage memory cards, units for large ride-on locomotives, giving true-to-life reproduction of many of the different components of sound that make up the behaviour of a huge diesel loco – impressive sounds that can be changed from one style to another just by the simple

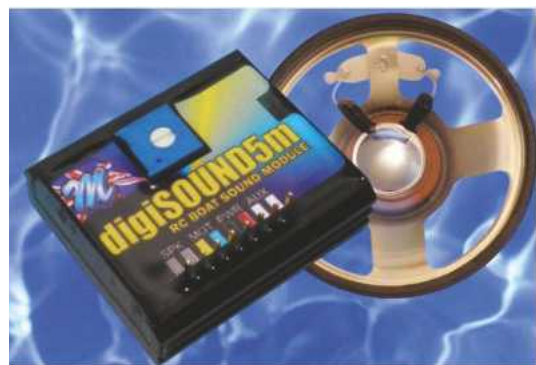
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A digiSOUND5m sound module from Mtroniks

**RRP
£69.99!**

Mtroniks digiSOUND Prize Draw

Want to get Wired for Sound? Well, thanks to the kind folks at Mtroniks, this month we're able to offer you the chance to try out one of the superb digiSOUND5M R/C Model Boat Sound Modules for yourself!



Retailing at £69.99, Mtroniks digiSOUND5m R/C Model Boat Sound Module is the world's first 100% waterproof, 'plug n' play' sound module. Designed to take all the hassle out of adding truly realistic sound effects to your model, this unit requires NO programming or set up. Instead, it comes with realistic sound pre-installed, so all you have to do is install it in your model and you're ready to go!

The unit (suited to 6 to 12V operation) is supplied complete with a built-in amplifier, wiring loom and even a 75.0mm diameter waterproof speaker (N.B. you should always install your speaker in a suitable enclosure (the upper side



of your hull) to ensure the best power handling, frequency and bass response.

To enter this prize draw, all you have to do is complete the form below, cut it out (photocopies are acceptable should you not wish to deface your magazine) and mail it back to us at the address below:

Mtroniks digiSOUND Prize Draw,
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MyTimeMedia Ltd
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Enterprise Way
Edenbridge
Kent TN8 6HF

before the closing date of August 23, 2021.

Good luck, everyone!

swap of a micro-SD card!

For anyone wanting to find out more, our current range can be viewed at www.mtroniks.net, and of course in order to further expand our repertoire, acquisition of sound samples for boats, cars, locos, etc, continues.

In the meantime, the team here at Mtroniks would like to thank our faithful customers for their support over the years, something which has allowed us to incorporate new technologies into our products, thus improve their modelling experience."

More about Mtroniks

Now in its 28th year, Mtroniks is one of the major suppliers of electronic speed controls in the R/C hobby industry worldwide. Not only does Mtroniks design and manufacture several ranges of electronic speed controls (including the world's first 100% waterproof speed control), LED lighting drivers and audio amplifiers for the R/C hobby industry, but it has, over the past ten years, broadened its product base to include electronic speed controls for large industrial brushed or brushless

motors up to and over 10HP, and over the last 5 years, entered the industrial market, too.

All the company's research, design, testing and manufacture is carried out at its own premises, located in the small Yorkshire village of Otley. Dedicating to bringing only the best products to market, these come with unlimited back up and support from the factory over the phone or via email, so that any help needed either with set up or selection for particular applications is just a call away. ●



Mtroniks designs and manufactures the UK's largest range of electronic speed controllers, as well as a host of other innovative products. To find out more visit www.mtroniks.net



Technical Spec

Product Type	Sound System
Model Type	Model Boat
Operating Voltage	Maximum 12.0 Volts
Battery Type	NiCAD/NiMH/Lead Acid/LiPo
Lipo safe	Yes
Digital sound	16-Bit
Speakers included	1
Speaker size	75.0mm diameter
Speaker Impedance	4 to 8 ohms
Motor Type	Brushed/Brushless
Wiring loom included	Yes
Power Output	4W
Waterproof	Yes
Dimensions	L40.0mm x W35.0mm x H15.0mm
Weight	30.0g



Bringing this story right up to date: one of Mtroniks digiSOUND5m R/C Boat Sound Modules. Don't miss your chance to win one of these superb, 100% waterproof, 'plug n' play' units to install in your model boat!

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*“Completed in 1939, during World War II
Hambledon initially operated in home waters
and I’ve modelled her as she served while
carrying out Channel Patrol duties during 1941”*



HMS Hambledon

Ian McFarlane shares the story of how he finally got this 1:72 scale Type 1 Hunt Class Destroyer on the water...

Although this model was not built from a kit, as will be explained, I did incorporate various kit components I had going spare, along with items bought in from 3D printers, so I’m not sure if I can claim she’s truly scratch built. In view of this, perhaps we need a new term for ships not constructed from a kit but which make extensive use of bought in components: semi-scratch, perhaps?

It was a project that took me the best of two years to complete, so why, you may ask, did I decide to build this particular ship? Well, I own its original ship’s wheel, which I purchased as I used to work for the naval engineering company MacTaggart Scott (which made the steering systems for many naval vessels). Each wheel had an individual

serial number on the back, and my wheel (now repurposed as an attractive side table in my conservatory) is confirmed as belonging to HMS Hambledon.

Service history

There were three main types of Hunt Class destroyers. All were small and the first type had some issues due to incorrect stability calculations at the design phase. Some were not only armed with 4-inch guns in twin turrets, multi-barrel pompoms and 20mm cannon with depth charges and small arms.

Completed in 1939, during World War II Hambledon initially operated in home waters and I’ve modelled her as she served while

carrying out Channel Patrol duties during 1941. During this time, however, she was struck by a mine and a large part of her stern was blown off. Following repairs, she then went back into service in the Mediterranean, where she was used for a variety of purposes, participating in convoys, submarine attacks and troop landings (including those in North Africa, Pantelleria, Sicily and Salerno). She also guarded the minesweepers clearing the waters for the Anzio landings. A few weeks before June 6, 1944, she was recalled and anchored off the Isle of Wight, near to Fishbourne, where she awaited the role she was about to play in the D-Day landings.

Out of 50 Hunt Class destroyers, some 20 were lost during the war. Hambledon, however, prevailed and along with two of her fellow survivors escorted the battleship Ohio, carrying President Truman on his post-war voyage to Europe, up the Keil Canal. Along with HMS Cotswold, she was then subsequently used to form an artificial harbour at Harwich.

Research

In my opinion, one of the most enjoyable parts of a project is assembling all the design information, drawings, pictures, technical details, etc, prior to the start of the build allow the build.

I managed to source several books, along with the 1:200 card model book of HMS Cotswold (another of the Type 1 Hunts) from Neptuni <http://neptunia-hobbies.com/gallery.html>. I also acquired digital copies of the original plans for HMS Mendip (a Type 1 Hunt built at Swan Hunters) from the Imperial War Museum, and I have to say the service from the IWM was simply superb! (See **Photo 2**).

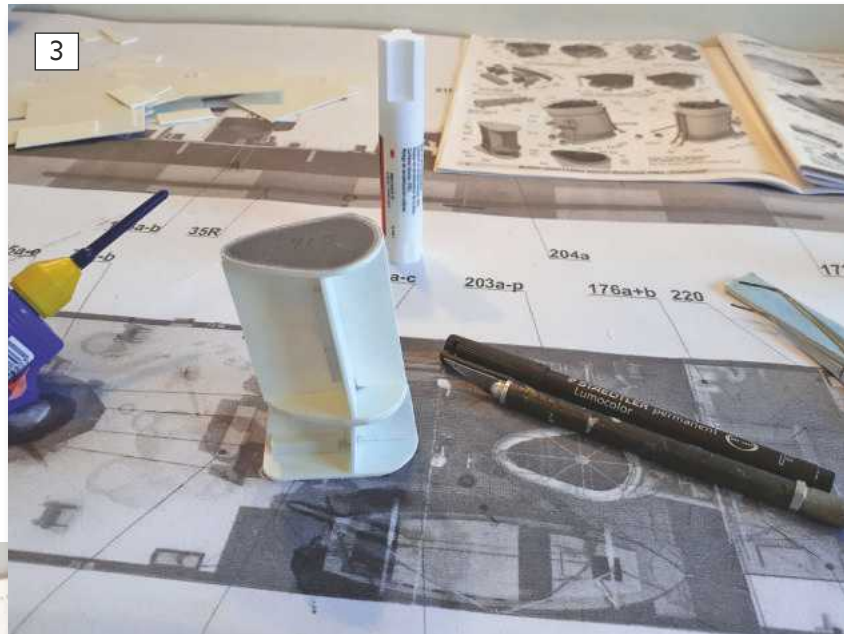
Taking the above-mentioned card model book apart allowed all the pages featuring parts for the Cotswold to be scanned and resized from 1:200 to 1:72. The book also

BELOW: US President Harry Truman and Secretary of State James F. Byrnes wave at HMS Hambledon from aboard the USS Augusta on the River Scheldt as they head to the Potsdam Conference on July 15, 1945.



PHOTO 1: A World War II shot the British Hunt Class Destroyer HMS Hambledon now released into the Public Domain by the Imperial War Museum.

BELOW: Confirmed as being the original ship's wheel from HMS Hambledon this piece of naval history now takes pride of place in the author's conservatory.



included the plan and profile of the ship, which matched up with the IWM's original build digital drawings, which I also resized to 1:72.

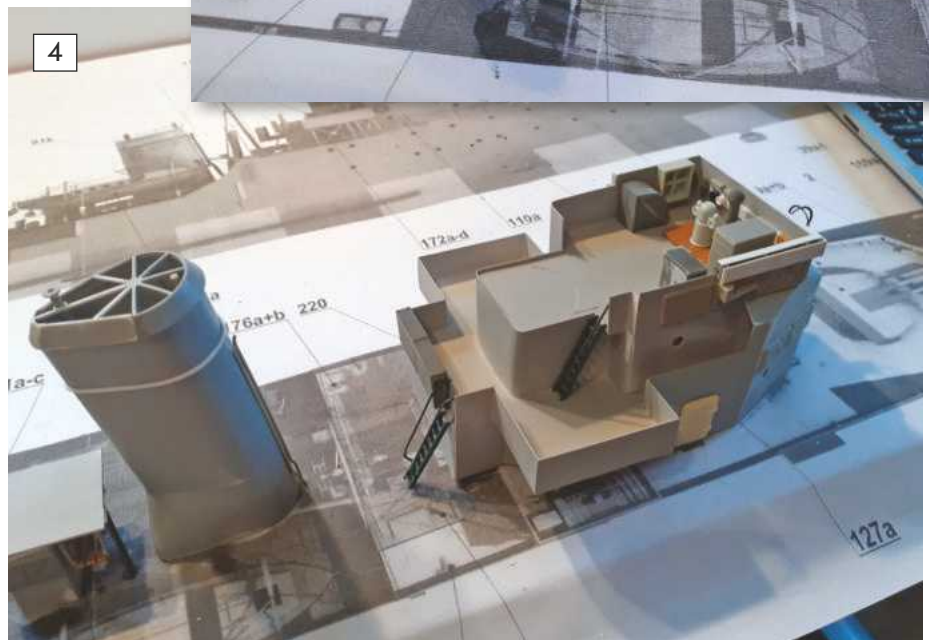
The long build

I tend to favour 1:72 scale – perhaps because I started first modelling with Airfix and Matchbox kits, the latter, admitted, being mostly 1:76, but close enough! This means the hulls can get quite large. I therefore start my builds with smaller modules, such as the superstructure and/or armaments, etc.

Using the Neptunia HMS Cotswold information I was able to cut out the resized and printed parts for the main superstructure and bridge and stick these onto Plasticard (using Pritt Stick) so they could be used as templates. Once the Pritt Stick had dried, the Plasticard could then be cut out to provide the correct size and shape parts to be assembled together.

Before the parts were assembled the paper templates needed to be removed from all the bits; this was easily done in warm soapy water, something which also cleans any glue residue and grease from the Plasticard. The Plasticard was then glued together with standard plastic model cement (I use Revell Contacta for this job). This process needed to be repeated for all of the topside structures.

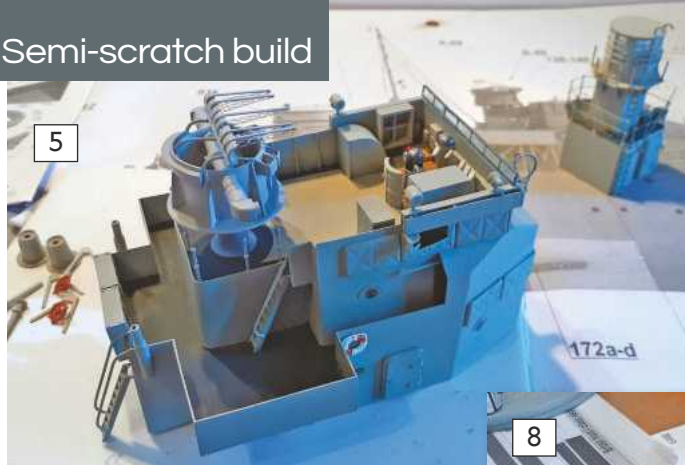
Once the main structures were complete (but not detailed) I was able to lightly sand down and spray prime all structures to ensure the topcoats of paint would take correctly further on down the line.



The funnel was slightly more complex, but the same principles applied. The main internal structure was constructed from 0.5mm Plasticard, and the wrapper round the funnel from 0.2mm Plasticard (see **Photo 3**).

Structures complete, the detailing was started. Many of the detail components were acquired from the Matchbox/Revell 1:72 scale Flower Class Corvette kit (of which I have four examples purchased in various states of build/repair). For example, the funnel top

girder arrangement required half a funnel top from the Revell Flower Class kit, with the other half being scratch built. Much of the bridge detail came from the Revell kit. There were, however, several components that the Revell kit either didn't include or that I'd already used elsewhere (on previous ship builds), so these items were either scratch built from Plasticard, modified from parts left over from other plastic model builds (spares box!) or bought in specifically (see **Photo 4**).



"I am particularly proud of this little sub-assembly"

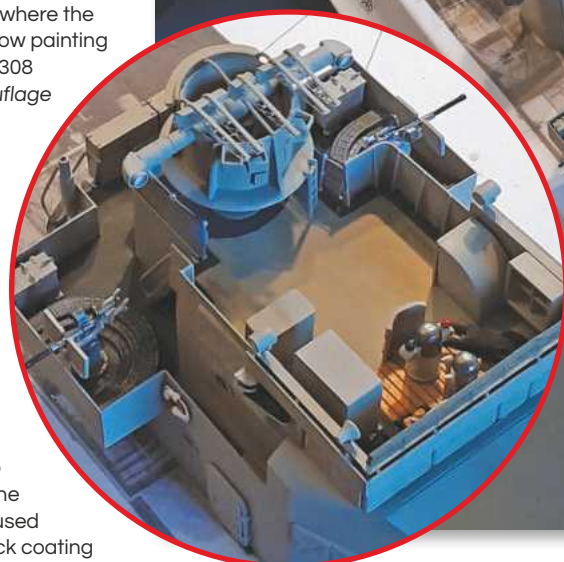
One of the items that posed a significant challenge and had to be built almost entirely from scratch was the MK IV HACS (High Angle Control System) directors and rangefinder. By referring to some of the information from the *Neptunia* book and a lot of pictures from the internet I was able to build up the HACS myself and I'm particularly proud of this little sub-assembly (see **Photo 5**).

This done, I'd reached the point where the components were at a stage to allow painting with the correct colours. I used CB308 from the World War II book *Camouflage at Sea*, which was classified back then but is now available in digital format from Sovereign Hobbies; this is book proves an invaluable point of reference as it allows the modeller to choose the correct colours for the right ship serving in the right location, at the right time (although, would anyone really know apart from the builder?).

I bought Testors' acrylic paint for the grey externals of the superstructures, which appears to be one of the closest matches to the required Royal Navy colour, and I used Tamiya acrylics for the Semtex deck coating and grey deck paint.

Detailing continued with a mix of Revell Flower Class Corvette parts, modified items from the spares box and bought in components (such as RB Model stanchions for edges of the superstructure), etc.

I was building the ship with the same type of radar amidships as fitted to the



Flower Class and so, again, I was able to use components from the Revell kit. *Hambledon* seemed to go through several upgrades and alterations to her profile during service but there is both photographic evidence and written evidence to support the fit of the radar mid-war (see **Photo 6**).



I bought a 4-barrelled pom pom (QF 2-pounder Mk VIII AA gun) from Battlecrafts on eBay but, after some time looking at this and dry fitting it to the aft superstructure, I decided it really wasn't good enough (due to its rough casting and poor detail), so I resolved to some parts from Shapeways, the online 3D printers; this company has an enormous library of components to select from and these can be printed to order. Many of the bits aren't cheap. I think the pom pom was about £35, but it proved so worth it! This arrived about 10 days after being ordered (along with oerlikons and band stand for the bridge wings and some other bits and pieces). The quality is superb, as is the level of detail. You don't really appreciate it all unless you get up really close and personal, but as a model builder it pleases me to know it's all there! (See Photos **7 & 8**).

As is my usual practice, I laid out things out on my bench as the build progressed in order to imagine/envisage the end result. I find this helps enormously with motivation!

More detailing was undertaken on the structures, including the canvas dodgers fitted around some of the stanchions/railings.



The next step was to take the drawings of the frames and backbone (keel) that I'd redrawn on my computer using CAD [Computer Aided Design] software and send them off to Cut-Tec, a firm that provides an excellent component laser cutting service. I know many modellers cut their own frames after having carefully drawn them out on the ply, but for speed and accuracy's sake Cut-Tec is my preferred way to go.

The keel and frames in 4mm ply I'd ordered from Cut-Tec arrived within an impressive three days, and the parts were pushed out, cleaned up and glued into place.

I had to cut the keel to thread the frames in and then obviously make good the keel, but once they were all glued in place with PVA, the joints were strengthened with balsa blocks. Once dry, the whole keel/ribs assembly was locked into the building board to ensure everything remained straight and true when planking commenced.

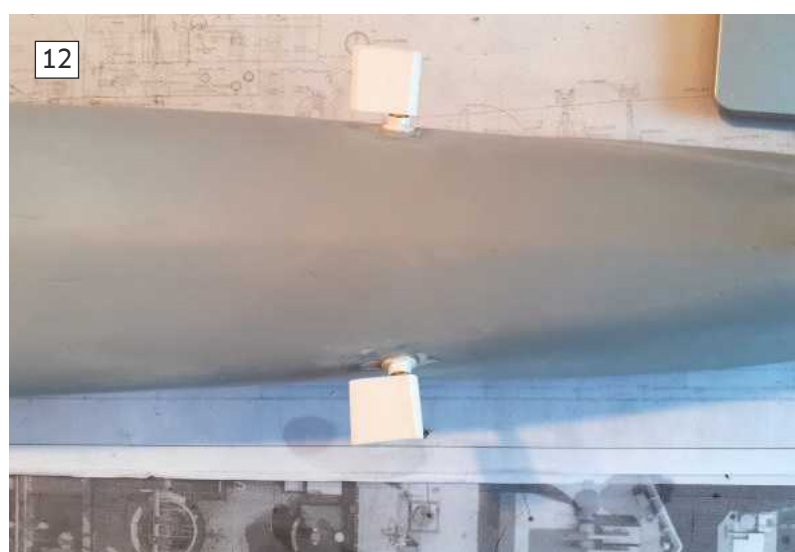
Using 2mm thick lime planks, I worked from the gunwale line towards the keel. Every plank was tacked to its respective frame with superglue (see **Photo 9**). The real strength of the hull would come from the GRP internals, once planking was complete.

With the 2mm thick lime planking taken up to the keel line, the hull was released from the building board and turned over. Before the hull could be faired smooth, the planking needed to be secured to the frames and to each adjoining plank (to stop each plank flexing during sanding). This was achieved with glass fibre tissue cut to fit the inside of the hull between the frames, slightly over the 55mm frame spacing, allowing a lap up each frame. I saturated this glass fibre tissue with polyester resin, which was then absorbed by the planks and

10



11



12

frames, creating a GRP/ wood composite and ensuring a very strong hull (see **Photo 10**).

Once the GRP internals were nice and dry (cured), the hull was sanded to initially fair, taking off any major bumps. Polyester resin was then mixed up again (98% resin, 2% hardener) and painted on the outside to reseal and seep into the planking (Photo 32). Then the next stage was to re-fair. As there were still imperfections, I used P38 car body filler as an extra thin layer over the hull and sanded this back to achieve a nice smooth hull. I did consider plating the hull, in order to mimic the shell plating effect of the real ship, but eventually decided there wasn't any point, as at this size, scale and with the camouflage painting it's unlikely you'd actually be able to see it.

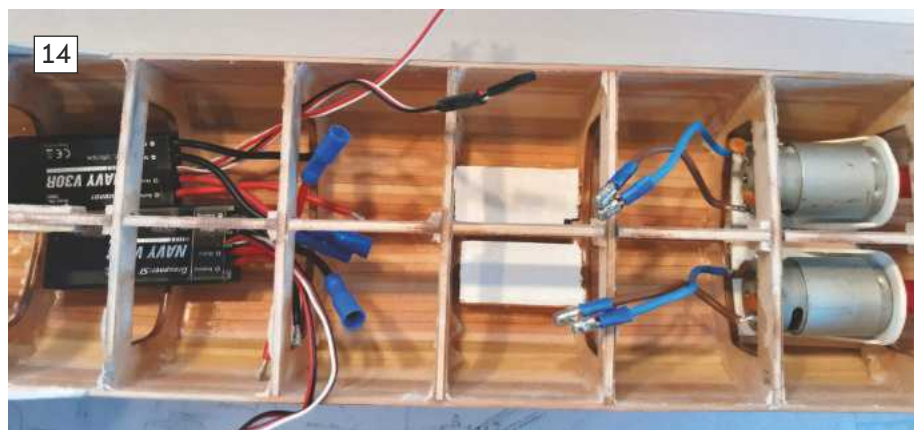
Believing the hull had been suitably faired, it was sprayed up with primer to highlight any final minor defects and imperfections. Whoa, it turns out there were loads! To rectify, therefore, I mixed P38

filler with some polyester resin (to slow the drying time and thin it down a bit) and pasted this onto the hull. After more sanding back, I then resprayed; a process that was repeated again and again (see **Photo 11**).

To break up the sanding monotony, in between bouts I dry fitted the motors, and drilled out the holes for rudder and twin prop shafts. Work then continued with the forward mounted active stabilisers: Raboesch waterproof rudders modified to the right scale size (see **Photo 12**).

The stabilizer servo was linked via a splitter cable to the rudder servo, so that when a port or starboard turn is underway the stabilisers will act to keep the vessel upright – at least that's the way it worked on the real class, but I suspected this would require some fine tuning at pondside.

With the hull faired and primed, work could commence on the aft of the ship, including the installation of the propeller shafts (waterproof Raboesch units), the motors (interestingly, these are in the same location as the engine room on the real ship) and the rudder. The propeller shafts were secured in place by pouring casting resin into the area in which they transit through the hull; this locks everything in and keeps it totally watertight. The speed controllers were mounted via



Velcro to the white pads in the hull base (painted balsa blocks). I did this so that they can be removed if necessary, although I can't recall ever taking them out of any other boat I've ever built (see **Photo 14**). The propellers (purchased from Prop Shop) are inward turning, just as on the real ship (see **Photo 13**)

I installed a mini servo for the rudder, as space was too tight for a full-sized unit. As previously

mentioned, this was electronically linked by a splitter cable to the forward active stabilisers to avoid capsize in high-speed tight turns, as per the original vessels in the class, which had in fact had terrible stability! With the R/C system fitted, everything was tested to ensure motors turned correctly, rudder moved freely and the stabilisers operated in the correct way on port and starboard turns (which they did).

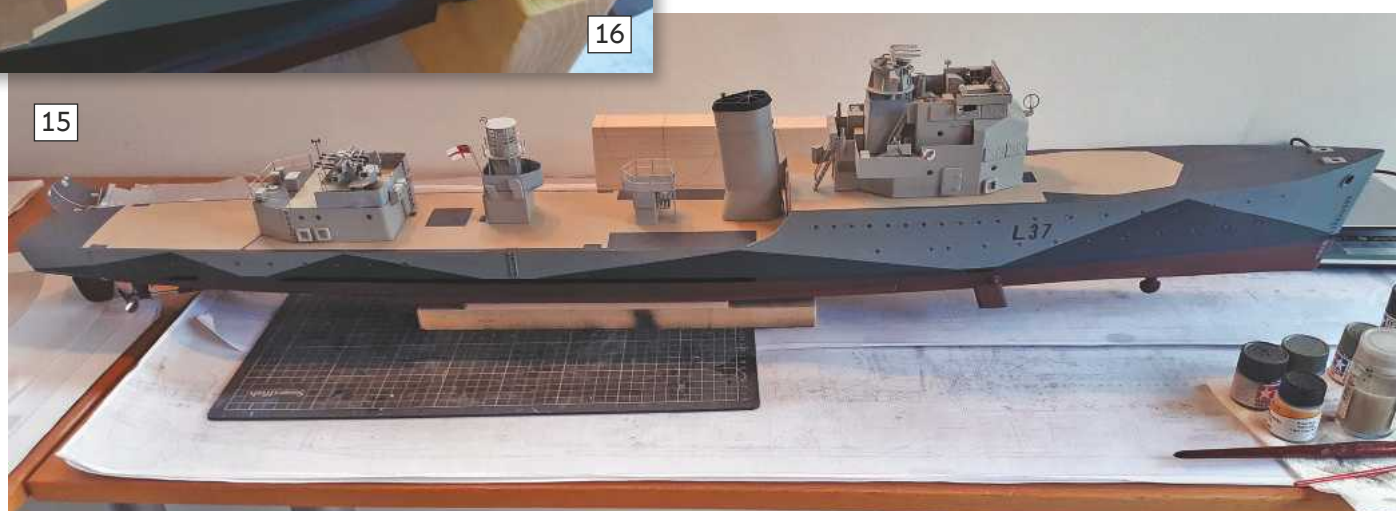
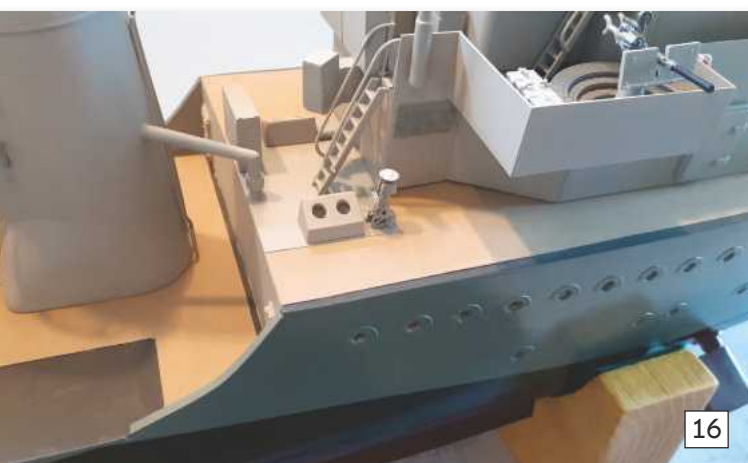
Work on the 82 portholes (41 per side) could then begin. Location of each was marked out and then pilot holed. The pilot holes were enlarged almost to full size (to about 4mm). Both of these operations were done with an electric hobby drill, but the final size was achieved by hand, with a 4.5mm drill bit in a pin. The hull was lightly sanded after the first pass through of the 4.5mm drill, before the drill was run through each one again by hand to finally finish. This is a laborious process, but it does give clean, sharp edges to the portholes.

Each of the porthole eyebrows was fashioned from Scalelink's excellent photo-etched brass fret, cleaned up (attachment points filed back) and superglued into place. The eyebrows were lifted and placed by using a cocktail stick with a small bit of silly putty on the end; this provides just enough 'stick' to lift and place the eyebrows. Portholes would be filled with Microsol Crystal Clear, once the hull was painted up in the 1941 Channel Patrol camouflage scheme.

Next, the decks were fitted from 0.5mm Plasticard. Hatches were cut for the superstructures and the hull was painted up. Finally, she was starting to look like a real ship, and this, and placing the already complete superstructure modules on the hull, provided a shot of much needed motivation to keep going (see **Photo 15**). Onwards...

The capstan unit and the towing bollard with hawse pipes (for the anchor chains) on the fore deck were the next items to be built. The capstan unit features handwheels from Scalelink, which, again, proved simply superb – so fine and perfectly to scale. I was equally satisfied with the chequer plate base, which I found to be just right. In modelling, as in life, it's often the little things that prove the most rewarding!

Working back from the foredeck, the capstan unit was then installed, along with the anchors and anchor chains (of course, I couldn't resist, adding a little bit of rust to the anchors). I referred back to the pictures of ships of this class on the Imperial War Museum's website just to confirm foredeck layout, and that the anchor chains were indeed painted white (even in wartime). Then it was onto the galley skylights and sounding machine, both of which I felt turned out really well (see **Photo 16**).



There are some things I am confident I can make well myself, and there are others that I know are best bought in, and the two ships boats fall into the latter category for me. So, I bought the 25ft Cutter and 27ft Whaler from MicroMaster, New Zealand. The level of detail now available on 3D printed components really is amazing and on arrival I have to say I was mightily impressed. The cutter fuel tank even has the pipe work and vents. Indeed, they're so good I'd say they make impressive stand-alone models in their own right (see **Photo 17**). They couldn't yet be installed on the ship at this stage, though, as I needed to get the boats davits and winches fitted first.

It was then time for ballasting trials in the bath. Fortunately, I found the ship sat almost perfectly in the water on the first attempt, so I was fairly confident that with the rest of the fittings on (which would be mainly aft) she'd only need minor ballasting adjustment. There was a good amount of thrust from the propellers, and the rudder and active stabilizers worked fine.

Further detailing then was undertaken on the ship, with the smoke generator and smoke floats on the aft deck installed. The smoke floats were purchased from Great Little Ships; all they needed was the exhaust/vent holes drilling out slightly on the bases. I did consider using some of the smoke floats supplied in the Matchbox/Revell 1:72 Flower Class Corvette kit (which I have some spares from), but the detail wasn't nearly as good as the Great Little Ships items. The smoke generator (with the valves/ handwheels on the top) was scratch built (see **Photo 18**).

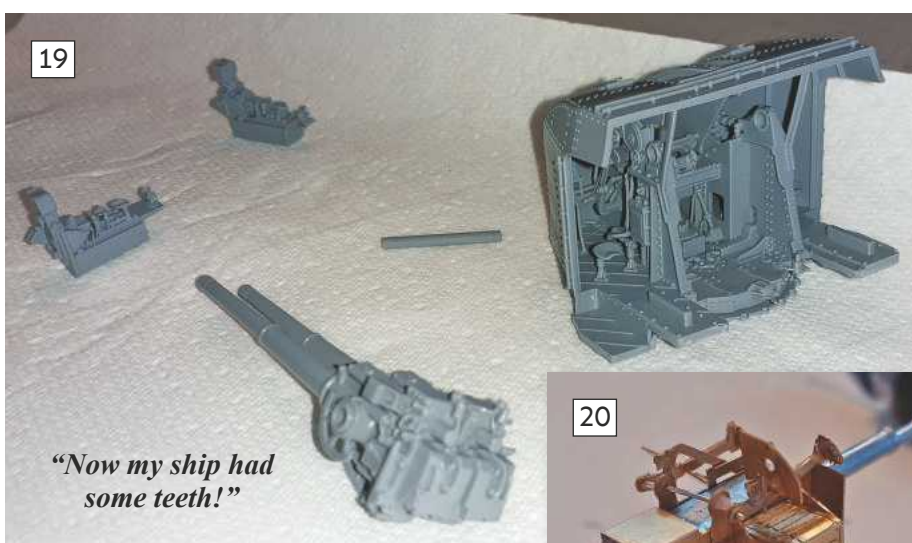
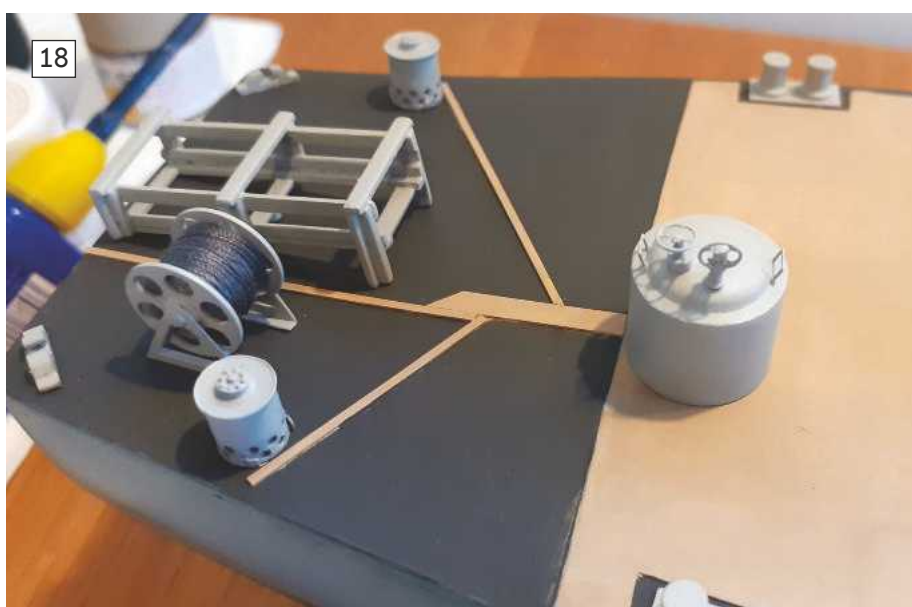
The next detail items to be tackled were the stanchions (proper profile Admiralty pattern, 3 rails). These were primed, painted and then threaded (off the ship) with the 0.4mm rails, allowing easy installation on the decks. With all 120 (-ish) stanchions fitted, painting of the rails could commence.

It was then on to the remainder of the detailing and any necessary final ballasting to adjust the vessel trim with all the fittings on.

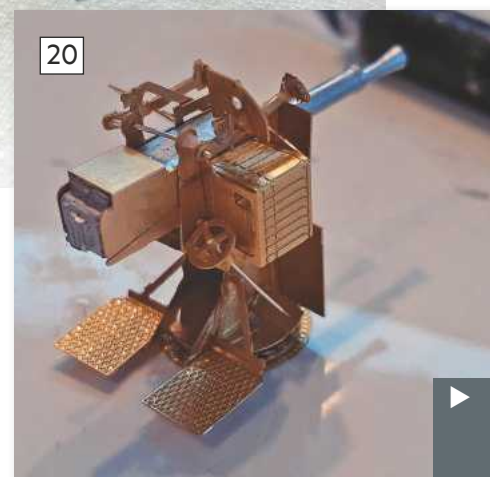
The main armament and some depth charges were also purchased from MicroMaster (see **Photo 19**). Superbly detailed, the 4-inch (10.2cm) QF MKXVI (MKXIX Twin Mount) guns really are, just like the ship's boats, attractive and interesting enough to be displayed as stand-alone models in their own right. The 3D printed parts were duly primed, painted and assembled to exactly match, according to my reference books, the real thing. Now, my ship had some teeth!

The bow chaser 2-Pdr gun kit came from Great Little Ships (see **Photo 20**) and, again, I found it to be a very fine model in its own right. All the brass is photo-etch, which was cut and bent to shape before being primed, painted and installed.

The final parts required were delivered, expertly packed to avoid damage, from



Shapeways and were, as usual, of splendid quality. These depth charge throwers, ammo lockers, davits, vents (square and round) and ammo hand up hatches were



21



22



all cleaned, primed and painted up prior to fitting (see **Photo 21**)

Foredeck and aft deck were now looking more complete, with depth charge throwers and davits installed on the aft deck and ammo lockers and hatches with canvas covers (tissue paper on a soldered brass frame) and vents on the foredeck. The end was in sight! (See **Photo 22**).

With the midships davits installed, the webbing straps to secure the ships boats went on, referring to some original pics (thanks Imperial War Museum!) to make sure the boats were accurately positioned and the

23





“Only about 200 grams of this tiny lead, or lead-like, shot, which is secured in place with some sprayed on thin PVA glue, was needed to bring her to the right waterline”

adding some 1:72 crew figures, but eventually decided this may make her look too toy-like (yes, I know, one of those Marmite debates!).



webbing went in correctly. Now there was just the Carley floats to install, the rigging to put in (davits and masts), plus a few minor details, which probably only I would see, to attend to.

A final bath tub trial

Hambledon was almost ready for her first sail, but before that another bath trial was needed to ensure she'd sit at the right waterline (see **Photo 23**). This revealed she sat ever so slightly (by just a couple of millimetres) stern high, so I poured some *liquid gravity into her stern cavity; only about 200 grams of this tiny lead, or lead-like, shot, which is secured in place with some sprayed on thin PVA glue, was needed to bring her to the right waterline. I also checked stability (rolling her from side to side) and, much to my relief, she'd showed a good righting moment, unlike her full-size counterpart!

Final detail deliberations

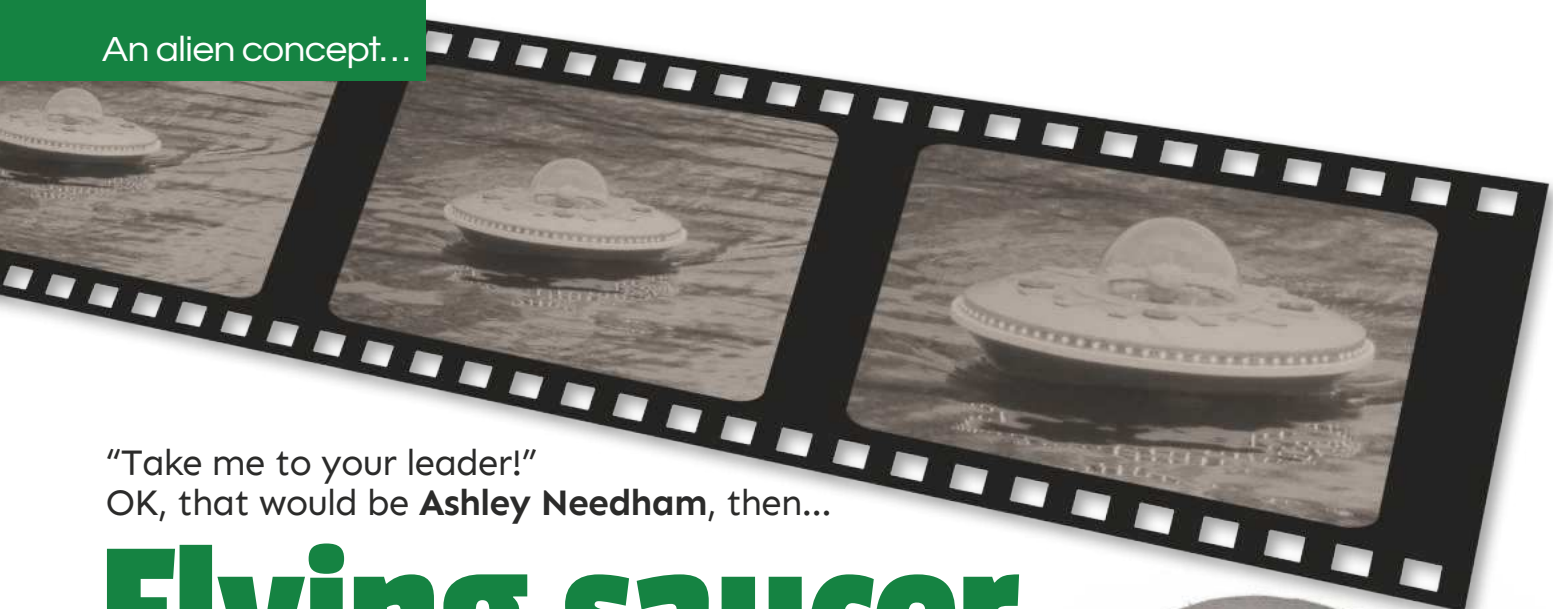
Once rigging was complete and vents grilles had been painted, *Hambledon* was at last finally finished (see **Photo 27**). In case anyone is wondering, I did hum and haw about

Getting her out on Gunknowe Loch

Hambledon's inaugural sail took place at my local club, Borders Model Boat Club (Tweedbank, Scotland) and I couldn't have asked for better conditions on Gunknowe Loch that afternoon. The active stabilisers worked perfectly, keeping the ship upright on an even keel in tight turns, and at and at top speed everything appears about scale (judging by the bow wave). When there was a slight breeze, she did heel, but when I brought her back in there was no water on the decks, so she certainly keeps dry! Each battery lasts about 30 mins, so a most enjoyable hour was spent sailing. My thanks, by the way, to fellow club member Eddie Robertson for taking the pictures of her on the water (see **Photos 24, 25** and **26**).

I'm already looking forward to the next outing in a couple of weeks! ●





"Take me to your leader!"
OK, that would be **Ashley Needham**, then...

Flying saucer on the water



The rings of foam cut ready to be stacked and glued together.

Where to begin with this one? It's not your normal project, to be sure. It all started when Richard, one of our regular Bushy Park boaters, and I for some reason got talking about working rowing boats. He explained he'd built a planked 'Woody' (as in Woody the Marshall from Disney's much-loved animated film *Toy Story*) rower; this featuring a clever rowing mechanism that uses a dog clutch to either engage or disengage the oars either side, allowing steering to be by oar only, no rudder.

Later, while humming a few bars of 'You've got a friend in me', I decided some sort of companion craft to sail alongside Richard's rower might be in order. Unfortunately, though, none of the characters in any of the *Toy Story* series films had a boat (Pixar certainly missed a trick there!). There were, however, those little alien craft and I reckoned the little green men with three eyes would lend themselves nicely to being carried about on the water in a flying saucer, the preferred carriage for extra-terrestrials, as is well known. We all know what a flying saucer looks like, and after all, who hasn't

seen one? It is round, has a big dome on top and has 'sufficient' flashing lights adorning its exterior. I'd probably hardly even need to put pencil to paper. I mean, how hard can it be to build a flying saucer?

Mars attacks!

Absolutely the first thing to be thought about when making anything like this are the character figures. Everything is built around them, so finding the right size figure is paramount. Get the figure first and scale the craft to it/them, as building first and then trying to find figures is asking for trouble. Richard's 'Woody' is about Action Man size, and is cloth, with floppy cloth arms, so well suited to being a rowing figure. As such, he allowed a rowboat of a modest dimensions and subsequently Trevor (see later) purchased a Buzz Lightyear, which inspired his choice of build, giving another convenient boot-friendly craft.

Aliens seemed to be thin on the ground (perhaps I should have been looking

upwards!) and I had to resort to the CLAW to select the chosen one (a well-known galactic auction site). I ended up with a figure approximately 70mm high which I thought would fit well in a saucer of, say, 400mm, or thereabouts, and be of a comparable size to the other pond *Toy Story* boats.

Plan 9 from Outer Space

Hiduminium **A**rgon **R**egulated **D**epleted boron sheet (sometime known as **HARDboard**) is obviously what I would normally choose to make a flying saucer from; however, Styrofoam makes a decent substitute and is easier to shape into the curves required. A pack of ten A3 sized sheets of 20mm thick grey foam was purchased, cut about and glued together to provide material for a space ship about 400mm in diameter. My plan called for five layers of foam; the bottom one would be the base, three on top of this would be the bulk of the body and the top

“You have to be very careful when using this, as it does expand, with some force, and in doing so will push your parts apart unless you have everything well clamped”

one would have a removable section in it for access, surmounted by a dome and an alien.

Construction was relatively straightforward and consisted of gluing rings of foam together on top of the solid base circle, nothing more! Other than the bottom sheet, all the others were made from two sections, as the foam sheets were not wide enough to use singly and were cut into discs with their centres cut out then glued together with expanding Foam Gorilla glue (see image on page 34). You have to be very careful when using this, as it does expand, with some force, and in doing so will push your parts apart unless you have everything well clamped.

Once dry, all these layers had to be shaped into the finished flying saucer shape. This can be done by hand, but the easiest way is to mount the saucer on a lathe and, using coarse sandpaper, sand it to shape. This gives you a nice accurate and smooth finish. But, for this you need a lathe with a capacity to swing the 400mm diameter of the body, and you've guessed it, my woodwork lathe only has a 250mm capacity swing. More expensive woodwork lathes allow you to swivel the motor section and turn larger things over the side, but unfortunately mine is not one of them. What to do? As luck would have it, I do possess a few large industrial electric motors, and one of these was rated at only 1450rpm which I thought I could use as a temporary lathe, bolted to a workmate. Fortunately, it has a screw threaded adaptor on it for a grindstone (or whatever), so, plywood discs were cut and clamped together over the bottom sheet by screwing them together, a 12mm hole was drilled in the outer disc to poke the thread through, and a 30mm hole was cut from the centre of the inner plywood disc to accommodate the nut. Note that the disc assembly, despite being on the large side, was actually very light and any out-of-balance weights were minimal. After giving the assembly (the four bottom layers first and then the top layer) a few turns by hand to ensure the assembly was reasonably central, it was swung to impart some initial movement and power was applied. Once I was happy with the security of both motor and foam layers, sanding commenced using, in this case, a Duragrit file. I stood alongside the spinning disc (and not in line with it) and the Hoover was positioned to catch the crumbs. In addition, I wore a mask and safety goggles. Once I had a good shape, finer grades of paper were used on a block. Finally satisfied with the results, several coats of Eze-Kote acrylic resin were applied to harden the foam, whereupon the saucer base was demounted from the temporary lathe and the top section was turned. All in all, no more than 15 minutes actual lathe work!



ABOVE: Ashley's temporary lathe, well tested before use. BELOW: The bottom hull half on Ashley's temporary lathe, awaiting more clamps for motor?



Now I had the body parts, top and bottom, some filling took place using a tube of fine-surface Polyfiller. This having dried, the centre temporary securing nut hole was plugged, drilling commenced for the pump and holes were made for the body LED lights in the still separate top disc. Topping my saucer is an acrylic dome (see image on p.37), a very nice purchase, crystal clear, of 150mm diameter and having a flange around the edge. I had cut a ring of foam from the top section

centre, the flange of which was slightly smaller than the dome flange so overhung it; this provided not only a stop to support the centre assembly but covered the gap around the plug neatly. Inside, the foam ring was chamfered to act as the aliens 'control panel' and then drilled for some flashing LEDs, which I mounted in acrylic segments. After fitting the propulsion and other internal parts (including the hull LED lights), the top section was stuck to the bottom with clear silicone sealant.

“Anti-Matter Warp engines are not allowed on the pond, so I had to source a Bipolar Integrated Linear Gamma-ray Engine, or BILGE pump, as they are known on Earth”



ABOVE: The bilge pump with silicon sleeve ready for copper reducer.

BELOW: The underwater pump and rudder.



hole up and drill another hole in the correct position(!) and then glue the pump in place with Gorilla glue. In order to increase the propulsive efficiency, I added a copper pipe reducer on the outlet via a bit of silicone tubing; this brought the outlet down to 15mm with a useful increase in water jet speed.

Engine control was achieved via a J. Perkins brushed ESC of 20A capacity, an aircraft style unit with no reverse, which, considering the instructions say that maximum current draw of the pump motor is only 5A, I was confident would be more than capable of handling sustained faster-than-light drive using the power of the Di-Lithium crystal atomic pile (also known as an 8-cell 9.6V Nimh battery). Although the strip lights and motor are rated at 12V, experience has shown that the decrease in brightness at 9.6V is negligible, so I knew I wouldn't need the maximum thrust available from the pump.

It was obvious that I wasn't going to have much directional control, considering the roundness of the hull, so a large rudder was made to try and coerce the ship into holding some sort of course. This was home-made using 5mm brass rod and a nylon tiller, running in a bit of thin-wall brass tube epoxied in a hole, and garden wire push rod.

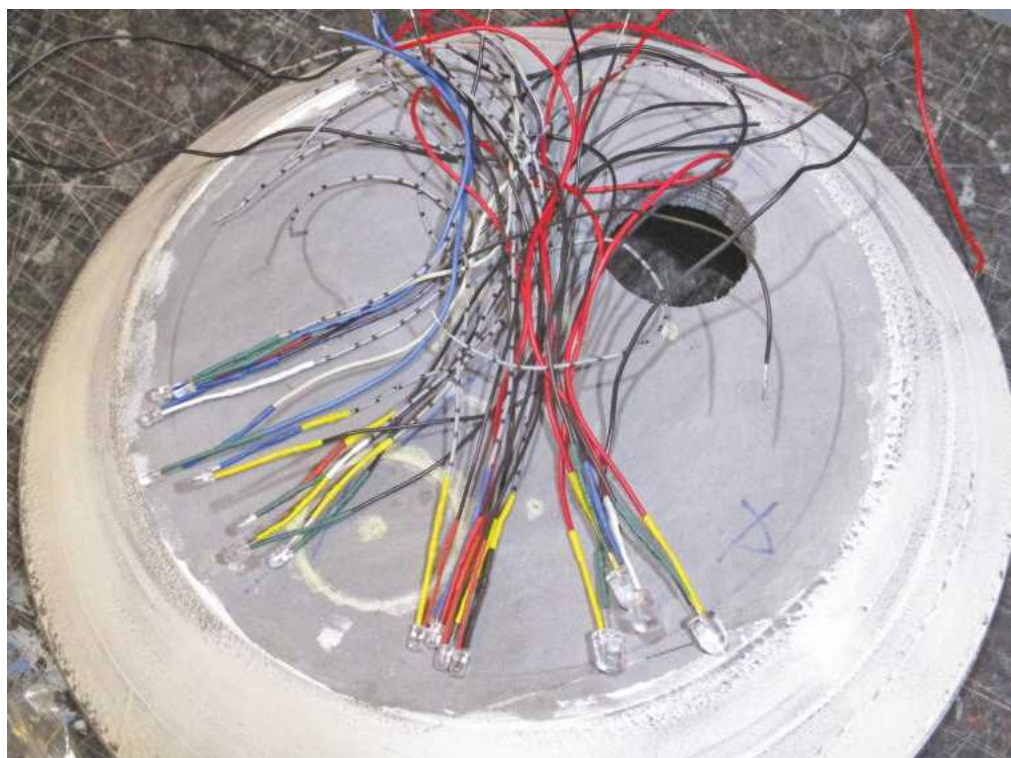
Speaking of directional control and spurred by all this film activity, Trevor, another Bushy stalwart, started to construct a Buzz Lightyear boat. Trevor made a Star Wars-styled craft using two 50mm electric ducted fan units. These are 'handed' (so one turns clockwise, the other anti-clockwise) in order to cancel out gyroscopic forces, are differentially controlled to provide steering and prove surprisingly effective.

The engines can'nae take it, Jim! (Star Trek)

Anti-Matter Warp engines are not allowed on the pond, so I had to source a **B**ipolar **I**ntegrated **L**inear **G**amma-ray **E**ngine, or BILGE pump, as they are known on Earth.

For all of a miserable 12 British Earth pounds, these units, intended for full size yacht bilge water extraction, run on 12V and can be found in versions pumping up to 5,000 litres-per-hour. I have used these before and they're great: smooth, powerful and silent, just the job for a spaceship. The down-side is the relatively large size of them, 60mm diameter by 110mm high, and the considerable space required for the plumbing to get the water from the units 29mm spigot out to an external nozzle. However, if you're not worried about getting a clean hull line and can't be bothered with all that pipe work, you can simply let them stick out from the bottom of the hull! They are completely waterproof, and, in my case, there was no need to worry about a clean hydrodynamic shape. In addition, this looks kind of fitting underneath my saucer, something odd and (possibly) futuristic.

Mounting is simplicity itself. You select a hole-cutter about the right size, bash a hole through the bottom sheet (off-centre, so the outlet spigot is on the centre line, fill this



The saucer bottom with pump hole and cabin leads.

“On a less than sunny day all these LEDs light up the acrylic dome and alien really well for that authentic surreal experience”

Close Encounters of the Third Kind (all those lights)!

Any self-respecting alien obviously needs his craft to be suitably illuminated in order to let everyone know he/she/it are out there. To this end then, I glued a ring of sticky-strip 12v LEDs around the rim and furnished both the dome control panels and body with flashing LEDs. These sticky strip lights are commonly used for under-cabinet lighting and so on in kitchens and take the form of a tape with sections of the LEDs joined together by a copper run. The individual groups can be cut off in threes if required as the sets have a built-in resistor, but the entire reel will run on any battery supply between about 7v to 12v. Flashing LEDs of differing colours were used to light up the saucer. If you're going to attempt a similar project, for this you have to do a bit of easy maths to determine how large a resistor you will need for your LED/ voltage combination.

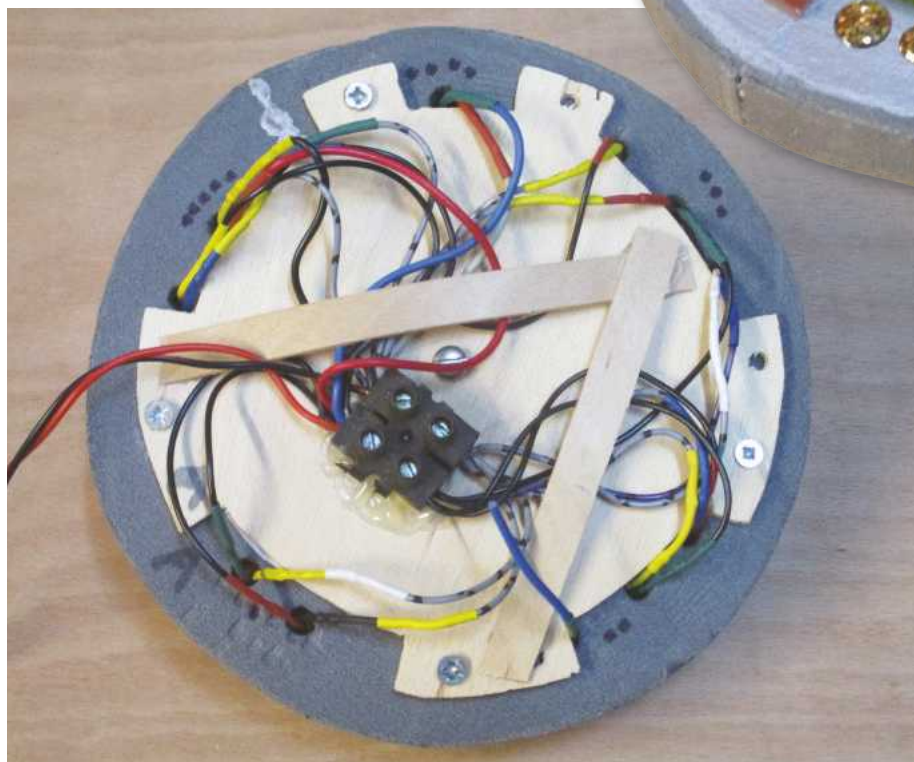
Each of my LEDs had the appropriate resistor soldered to one leg, wires attached and joints shrink-wrapped before the assemblies were poked through holes in the foam and into curved acrylic 'consoles'. These had been painted on top, but left unpainted at the sides, and these edges glow from the light of the LEDs, enhancing the visual effect. After the epoxy holding the consoles on the dashboard had set, the wires were bunched up and connected to the ESC battery lead, and a similar method was used for the larger yellow flashing body lights. Yes, I know it's not very neat...

My 70mm alien stands in the control dome, and underfoot he/she/it has been provided



ABOVE: The acrylic dome with its flange painted.

RIGHT: Ashley's fierce alien positioned in the cabin section. The outside chamfer seen in this shot would later be hidden by the dome flange.



The wires squashed in under the cabin section.

with gold prismatic floor covering, courtesy of a gift bag found in a newsagent. This adds a bit of 'bling' to the cabin and contrasts nicely with the overall silver colour.

On a less than sunny day all these LEDs light up the acrylic dome and alien really well for that authentic surreal experience.

A few screws held the floor to the cabin torus and on testing it was found beneficial to drill a small 4mm hole in the top centre of the dome, and a few more around the sides, to ventilate the interior. I was aware the cabin needed to be able to 'breathe' a bit so it wouldn't mist up, which it did, and, despite several more holes and external vents having also added, still unfortunately does. It looks as if I will have to arrange some through-ventilation using a small computer fan, one day...

I elected to paint the entire saucer in a nice bright aluminium silver, as most pictures of saucers indicate this is the most common



Tripping the light fantastic: the LEDs being tested prior to the top being stuck in place.



All gear in situ, ready for the top to be glued down.

finish. Initially I was going to use car spray cans, but the difficulty of sealing this amount of foam sufficiently (the spray attacks the foam and softens or melts it) and the relative thinness of the coverage led me to using Rustin's quick drying acrylic paints: grey primer and aluminium silver. Both are nice and thick; the primer acts very well as a liquid filler and the aluminium is external grade and needs no protective lacquer.

Journey to Mars ('B' movie)

Pond, I meant pond! No ballast was be needed, other than for trim adjustment, and, as the craft was hardly likely to leak, it was transported by the mother ship to Bushy Park and then levitated (by hand) onto the water. Having checked the controls were working OK, we were finally ready for launch...

My fears of straight-line stability proved to be wrong. The saucer has no difficulty in holding a steady(ish) course. Turns? No problem, it turns on a pin-head – although the style is 'shoot and scoot' as you can't hold a curving course, you just turn to point to the direction you want to go and head forwards.

Spinning is easy and fun. The lights around the circumference look great at speed and the water makes them twinkle nicely, while up in the dome the flashing console lights are a blur of action. Actual spinning on the spot doesn't appear to be possible, but the saucer will rotate within about one diameter, giving the right effect, and exiting a spin is as easy as centring the rudder and hoping that you caught it facing the right way. My alien is facing the front, in as far as the power unit is one side of the saucer and the rudder is the other side, and this is an aide to seeing where you are about to go.

Full speed, which it's actually a bit quicker than you might expect, is obtained at about ½ throttle. Pushing the stick fully forward doesn't seem to make much difference, however full power does make it spin better.

Total draught amounts to approximately 95mm and most of this is the pump sticking out from the bottom.



ABOVE: In a spin: Ashley's flying saucer is great fun on the water.

***“The Toy Story trio
(Woody, Buzz and the Alien Craft)
look great on the water together...
Certainly, they’re a massive hit with
the public at the pond-side. They
bring a smile to everyone’s face”***

Battery life is considerable, as running on half throttle the pump only takes about 2A and the lights consume very little power: it's more likely that the servo uses the most power as it's constant use trying to control the machine!

I was worried about the possible wild change in trim, due to the circular design and the fact that the pump exits only just aft of centre, but I needn't have. There's a tendency for the bow to dig in slightly, I suppose due to the resistance of the pump hanging down, but a few pieces of Depleted Uranium ballast easily corrects this and, in reality, you don't really spend much time going in any one direction to notice a change in deportment.

Lastly, I had the forethought to put a step in the rim of the saucer to inset the LED strip for its protection, and a 5mm thick by 9mm wide length of sticky-backed draught excluder foam runs around the outer rim to absorb the knocks and bumps that are a fact of life with this design.

Thus far it seems to have coped with weed on the pond very well. The pump doesn't jam and the rudder is kept clear by the bulk of the pump ahead of it. If weed does collect on the pump filter, just stopping the motor lets the weed fall free and you are clear to motor on. There is no reverse, and to be honest, it hardly matters!



The crowd-pleasing Toy Story trio!

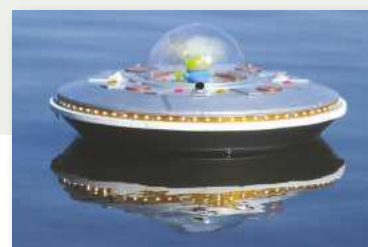
The truth is out there (The X-Files)

An alien on the pond? Surely not! Unfortunately, the flashing lights are difficult to capture on camera, so some of the spectacle is lost in the accompanying photographs. In addition, regardless of which angle you shoot from, the saucer looks pretty much the same.

The Toy Story trio (Woody, Buzz and the Alien Craft) look great on the water together, though – whether going sedately, quite fast or round and round, depending on the craft. Certainly, they're a massive hit with the public at the pond-side. They bring a smile to everyone's face, and you can't say fairer than that! ●

Enough space in your toy-box?

The Flying Saucer's overall diameter:	400mm
Height (bottom of pump to top of dome):	250mm
Weight (excluding battery):	1400gm





LEFT: The skeleton of the boat viewed from the stern.

Hail Mary!

John Mileson confesses all...

Up until this wretched plague struck some 18 months or so ago, I believe I was considered by all those who know me to be fairly normal – save for my wife of over 50 years, who even back then would probably have heartily disagreed! Most of my days I spent in my workshop (well, alright, if we are going to be picky, the shed) tackling model railway projects, only reappearing for meals, domestic duties and for any necessary heavy lifting required. Eventually I feigned a hernia to get dispensation from

*“Feeling very misunderstood,
I sulked off back to my shed,
where I sat down and pondered
what to do next”*

the latter, but that’s another story. Anyway, all of this I more or less got away with until, I’m informed, I started to display more worrying symptoms. In no particular order these were: increased grumpiness (apparently, albeit to a lesser degree, I had always suffered from

this); lack of sleep; loss of speech (except when talking to suppliers); moodiness; not washing or shaving, and, probably worst of all, the continual humming of sea shanties! While personally I still don’t see any of this as unreasonable behaviour, I perhaps ought to disclose how this newly developed condition first began ...

Track and trace

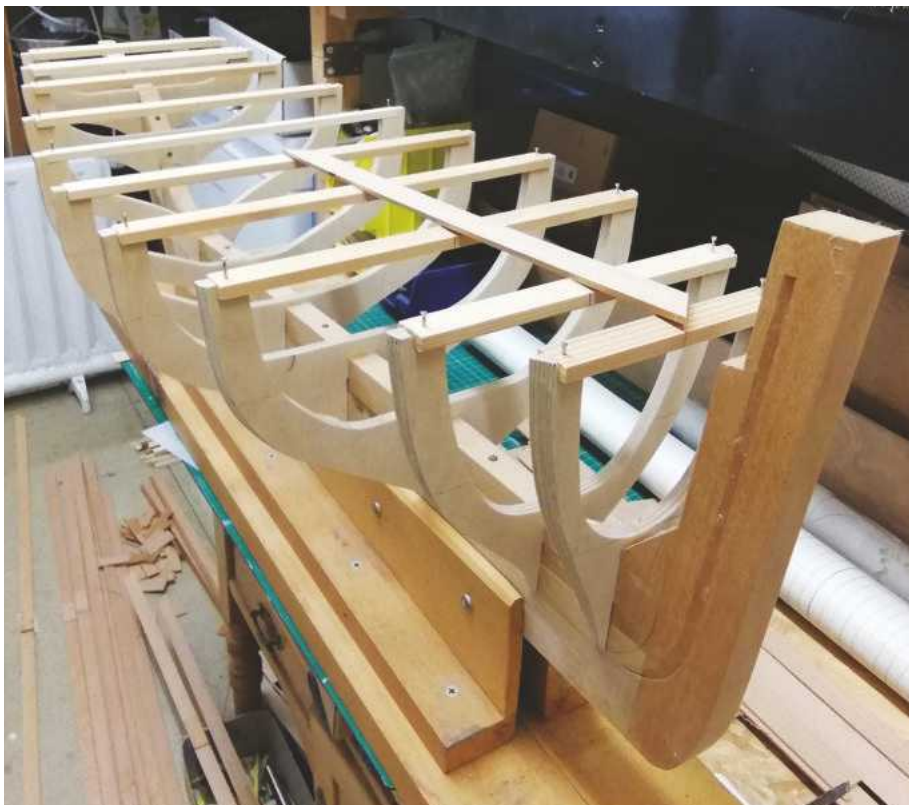
I’d been in the process of completing a number of Gauge 1 live steam locomotives when lockdown first began, so once I’d finished these kits I was, naturally, at a bit of loss. Feeling increasingly unsettled, as a last resort I confided in my wife. Very unreasonably, she pointed out that I already had over 30 Gauge 1 and 16mm locomotives and as far as she was concerned enough really was enough. With much gusto she then launched into various suggestions for alternative therapy, such as taking up philately or starting a modest collection of some kind. Worst still, when I didn’t show any enthusiasm, she reminded me that better use of my time could be made by to doing some decorating. This last option I quickly quashed by reminding her of my hernia!

Feeling very misunderstood, I sulked off back to my shed, where I sat down and pondered what to do next. It was then it struck me that some time earlier, Les Pace, a fellow G1 modeller from Northampton, who is also a model boat builder, had given me some plans for a French fishing boat, the *Louis Heloise*. With that, I began an immediate and frantic search and found these ancient plans mouldering in a corner of the shed. Having duly pinned them up around the shed walls, however, I began to seriously question whether or not scratch building this boat, using an unfamiliar material, wood, was really for me. Contacting Les by phone proved a big mistake. He insisted that, as I’d left school with an ‘O’ Level in woodwork, it would be an absolute ‘doddle’. Well, at least I can blame what followed on someone else being a bad influence!

Desperate times call for desperate measures

With no way of being able to purchase any supplies due to the lockdown, the idea of a little cannibalism started to kick in. I began eyeing up four teak shelves that I had about 500 railway books stacked on. Inevitably, before long said books had been piled knee deep on the ‘workshop’ floor and the shelves removed from their brackets. So far, so good!

Knowing little about boats, it appeared the plan involved a ‘plank on plank’ hull, and so would require me to cut several hundred planks, along with various other bits and pieces, from these shelves. I quickly realised, however, that I didn’t have any means of cutting them. I did have a chain saw, but even I could see that would be a tad extreme. There was, therefore, no other choice but to give the old credit card an airing, and I



Checking the alignment of the bulkheads, which, John, freely admits was more down to luck than skill.

"With no way of being able to purchase any supplies due to the lockdown, the idea of a little cannibalism started to kick in"

ABOVE: As can be witnessed from the number of nails, the teak took some persuading!

RIGHT: Planking complete, awaiting filling and sanding down.

BELOW: The inside of the hull was just as rough as the outer skin.



promptly ordered a Proxxon table saw and a couple of tungsten carbide saw blades.

These arrived the following day and, as luck would have it, I was able to intercept the Fed-Ex man and sneak the parcel in unseen. What I hadn't envisaged, however, was the inordinate amount of dust cutting up several hundred planks would generate. Not only was the shed, books and everything else covered in fine orange dust, but so was I. I knew I'd have to find some excuse for appearing indoors in this state. This was going to be a tricky one... I waited, then, until I knew my wife was busy elsewhere indoors before swiftly sneaking the Dyson vacuum cleaner out to the shed. Unfortunately, what I hadn't noticed was the trail of footprints I'd left across our cottage floor, and just to make things a thousand times worse, the Dyson decided it didn't actually like this particular dust and duly expired. Oh boy, the shed was about to become 'the dog house'! As already



ABOVE: Gunwales added and the inside of the hull coated with Isopon resin.

RIGHT: The finished hull and the decking added.

explained, Les, who cunningly lured me onto this very slippery and treacherous slope, has an awful lot to answer for.

Things start to get sticky...

For the purposes of this article, though, let's move on to the construction itself, details of which I will sketch over since most of you will be far more worldly wise than I when it comes to the building of a model boat.

Once the transom, bulkheads and the bit at the front had been set up and glued to the keel using a new glue to me, Aliphatic resin, I spotted I had one bulkhead out of place. Never mind I thought, just pull out the offending components and swap them over. A light tug and nothing moved. Further effort produced no better results. At this juncture it began to dawn on me that you can't mess about with this adhesive. Sweat and panic set in, and so next I resorted to the hammer, lightly at first and then with more zeal. Nothing! Except that now the bruised and split wood was no longer resembling bulkheads. Ultimately, therefore, the offending remains of the bulkheads had to be cut out and new ones made.

Call me a plank!

Time then to proceed with the task of planking. Initially, I'd foreseen few problems with this. Now, however, I found myself asking why it hadn't occurred to me that teak doesn't bend very easily? The planks were 20mm wide (the thickness of the original shelves) and had been cut 3mm thick. OK, OK, I know what you are thinking: how on earth did you



expect to bend them to shape? Shamefully, I don't really have an answer to that. However, with a bit of brute force, brass nails and my trusted Aliphatic resin, I did manage to get the hull looking something like, well, a hull – not perfect, but with small gaps filled with Isopon P38 no-one would ever know just how traumatic an exercise it had been.

On the other hand, the decking had to be good as it was to be varnished; trying to disguise a botch job with P38 and thick paint wasn't going to wash it here!

I was able to scale all the fittings and cabins, etc, from the plans, which made the construction of these relatively easy. The capping rail around the top of the bulwark planking and stanchions was a different matter. I cut six 4ft lengths of teak to 5mm x 5mm and, to make them more pliable, soaked them overnight in the bath – something that turned out to be a complete waste of time and water.

I decided to mark out the outline of the upturned hull around the bulwark on the shed



Detail of bowsprit fittings, and the top rail added.

ABOVE: Extensive use of P38 filler ensured a smooth finish to the hull. The bowsprit appears somewhat longer than it is.

“This was a difficult job that involved crawling about the floor, with blood rushing to my head and my arthritic knees sorely complaining”

Not exactly plain sailing

Next came the mast, bowsprit and booms, etc. The mast was laminated up from strips of teak and then carved using a craft knife. I only had one chance at getting this right as stocks of the long lengths of teak had been used up.

floor, so Cellophane was laid down and nails driven in following the pencil line contour. Three of the 5mm x 5mm strips were glued together and then, with great haste, before the glue could cure, the strips were forced around the nails. More nails were added to force the teak against the original ones. This was a difficult job that involved crawling about the floor, with blood rushing to my head and my arthritic knees sorely complaining. But, the following morning, much to my surprise, this had worked and the rails were glued and pinned to the stanchions. What a relief!



The build almost ready for painting.

RIGHT: The front cabin was initially just varnished, but as John felt it just didn't look right it was eventually painted.

BELOW: The rear cabin is not quite to plan but does covers the steering servo unit.

"How exactly do you plan on getting it through the shed door?"



It was at this stage, however, that a cunning plan was hatched. I would name the boat *Mary* after my wife. Brilliant strategic planning! With some additional sweet talk, my charm offensive worked and she kindly agreed to 'run up' the edges of the sails for me.

Not wanting to push it too far, though, sewing in the bolt ropes to the edge of the sails by hand was down to me. This was a long, hard and painful task, but the end result could be termed as, let's just say, adequate.

The big reveal

At last, after about three weeks of intensive work, the *Mary* was complete, and I invited my wife into the shed to share my excitement and show her my 'masterpiece'. Always a mistake to seek praise! Her first comment was "How exactly do you plan on getting it through the shed door?". I could only scratch my head, staring at the leviathan I had created and mentally acknowledging, albeit with some reluctance, that she always has been the brains as well as the beauty in this partnership. The next objection was the weight. I had of course realised the model was getting a bit heavy, thanks to the incorporation of 8 lbs of lead ballast, four large teak shelves, batteries, radio control gear, etc. It was going to take at least two strong men to lift it. Other comments and questions centred around it probably not being able to fit in the Land Rover and whether I had given any thought to where I was going to sail it. Apart from those minor setbacks, though, it seemed to have gone down pretty well.



ABOVE: The steering servo fitted. The steep angle matched the angle of the rudder shaft.

RIGHT: The deck area finished, painted and varnished.

The sails presented a different set of problems. These were made from bed sheets, which I had discovered quite by accident(?) at the bottom of the linen cupboard. Not possessing a sewing machine myself meant I had to own up to this 'find' and grovel to my wife in the hope she'd let me use hers. Some battles you win, some you don't. In fairness, perhaps the aforementioned disaster with the Dyson didn't instil much trust here.





ABOVE: The hull brush painted dark grey using Phoenix enamel paint.

BELOW: 'Mary' in the bath!



ABOVE & BELOW: The rigging. RIGHT: Hail Mary! The finished boat.



Permanent lockdown?

Having dived (or perhaps more accurately belly flopped) right in to my new- found addiction, I have since built seven more model boats, including a tug, a trawler and five yachts.

Occasionally, while sitting in the corner of my shed on a pile of books, gently humming sea shanties, it occurs to me that I should perhaps be on look out, just in case the men in white coats suddenly turn up at the garden gate. Still, if the worst comes to worst and they do come to take me away, I'm sure I'll be amongst friends. No doubt, I'll find Les in the room next to me. I will, of course, let you know the visiting times; just, please, bring supplies! ●



Glynn Guest's plan for this paddle tug model appeared in the June 2014 issue of Model Boats.

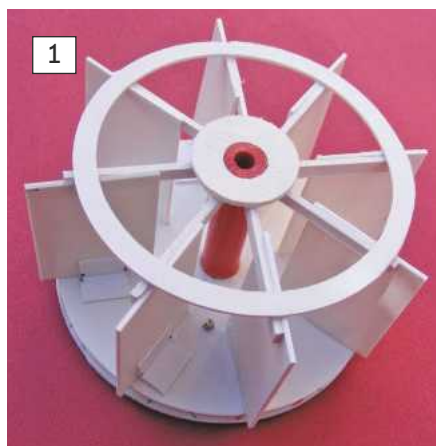
Paddle wheels & performance

Glynn Guest tackles this little documented topic by sharing the results of his own recent trials and experiments...

Before building my first model to be propelled by paddle wheels, I tried to read up on this subject. Alas, while there was plenty of information on how to build scale types, nothing could be found on how to match paddle size and design to meet a working model's required performance. Luckily, following a bit of experimentation, my first and subsequent three models worked out OK and gave me a few rough ideas on how to build and operate them that I feel are worth sharing...

One idea was to relate the 'rim speed' of the paddle wheels to the model's speed. This worked reasonably well, provided you allowed for something like 50% slip between the wheels and the water. In other words, if the rims of the paddle wheels have a tangential speed of 1 m/s then the best model speed is likely to be 0.5 m/s.

Another discovery during sailing trials was that paddle wheels can suffer from 'diminishing returns' – that is, when increasing rotational speeds of the wheels fail to increase the model's speed. This I learnt when raising the paddle speed to around 200 rpm only increased the noise generated by the model, not its speed.



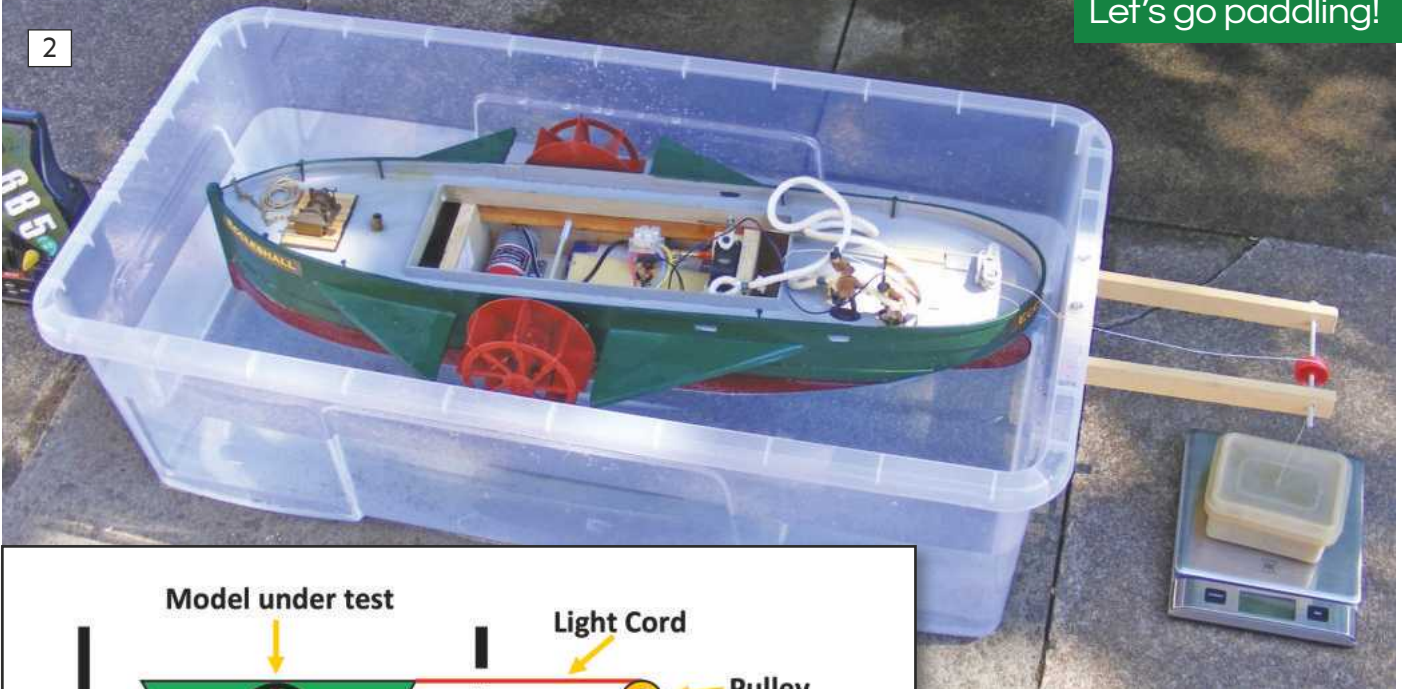
Practical testing

After building my first couple of paddlers, I did find an article about the theory and design of model paddle wheels. Unfortunately, it was written in a way that was difficult to understand and follow and nothing of any value could be learnt from it. This prompted me to conduct some quantitative testing of my own on the subject.

Let me now admit that my paddle wheels are all simple fixed blade types, which feature a solid disc on the inner, i.e., hull, side (see **Photo 1**). This design was chosen to make construction easy yet tough enough for any on-the-water accidents. I also felt that with wheel diameters of 3.5- to 4-inches (90-100 mm) the theoretically more efficient Feathering types would show little advantage to justify the extra work involved and might also be more vulnerable to damage. Plus, these simple fixed type blades seem to look just as good when the model is thrashing about on the water.

My initial thought was that I could time the model passing between two fixed points, with the paddles rotating at different speeds during each run. I realised, of course, that a successful trial would be totally dependent on the weather, as any wind and waves could seriously affect these relatively slow-moving models. This consideration, however, proved immaterial, as the Covid19 'lock-down' was to rule out any such outdoor activities. Instead, the more controlled method of putting the model into a suitable water filled container and measuring the paddles rpm and the thrust produced was chosen. While this

2



"This method proved to be very sensitive and reliable"

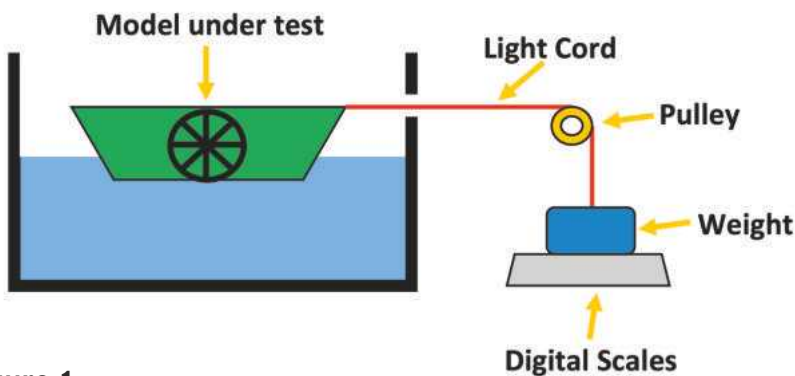


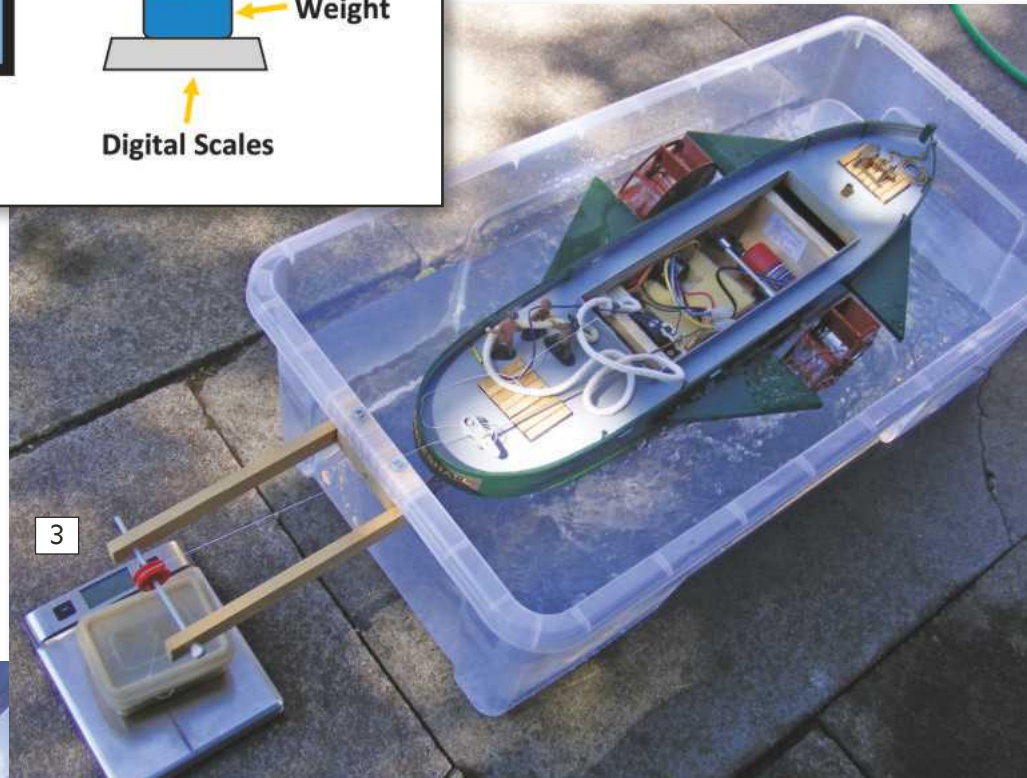
Figure 1

wouldn't exactly replicate the same conditions as when a model is being actually sailed, the paddles would cause the water to circulate in the container and mimic the effect.

Equipment

A big plastic box, the type usually sold for storage purposes, was used (see **Photo 2**). Measuring the rpm of the paddles was carried out with an optical tachometer, using a patch of reflective tape on the drive shaft. The thrust was not so easy to measure, and my first efforts failed, until I remembered the small digital scales I had stored under the workbench.

3



Any attempt to have the thrust measured by having the model push against the scales would have involved some sort of mechanical linkage, with attendant frictional losses. I came up with the much better solution, therefore, of tying a lightweight cord to the stern of the model and passing it horizontally through the side of the container. The cord was lead over a pulley supported by a simple outrigger secured to the end of the container and down to a weighted box on the scales (see **Figure 1** and **Photo 3**). If the scales were zeroed with the box in place and no tension in the cord, then any paddle wheel thrust would be recorded as a loss in weight by the scales. This method proved to be very sensitive and reliable.

"This work has, admittedly, only scratched the surface of the subject of model paddle wheels... So, let's hear about your experiments. Well, provided you don't mind wet trousers, that is!"

A free plan for this simple to construct approximately 1:32 semi-scale stern wheel paddle tug designed by Glynn Guest was included in the October 2012 issue of Model Boats.

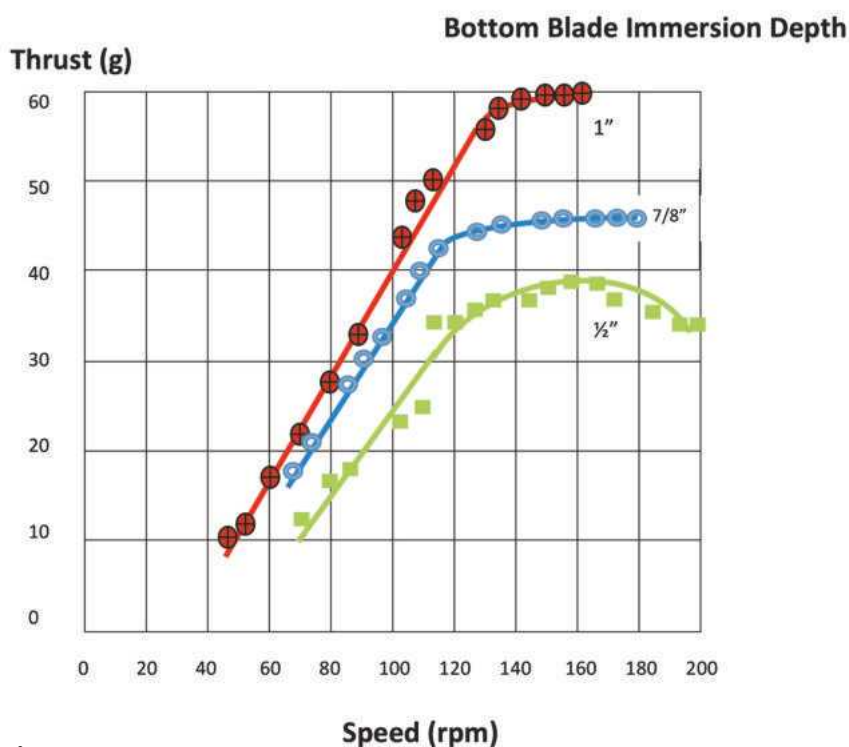


Figure 2

Testing time

The model tested has 4-inch (100 mm) diameter wheels, each sporting eight blades that are 1.5 inches (38 mm) wide and 1-inch (25 mm) in depth. The usual trim is to have the blades when at the bottom position to be just submerged. This was the starting condition for the tests.

I found that the digital scale and rpm readings would fluctuate somewhat when the speed was changed to a new value, but after a minute or so they would settle down to steady values that I could then record. The onboard six cell battery pack couldn't raise the paddle speed much above 130 rpm, so power was supplied from a 12-volt auto battery via flexible leads for the higher speeds.

The model was then rebalanced to see what effect a shallower blade immersion would have. These trials were conducted with the top 1/8 inch (3 mm) of the bottom blade out of the water and with the blade half immersed. I had forgotten, though, that with the model floating

higher in the water, some of the H₂O needed to be removed in order to restore the cord to a horizontal attitude where it passed out of the container. As a consequence, I ended up getting my trousers soaked!

Results

The results are plotted out on my graph (see **Figure 2**) and despite the simplicity of the test rig they show reasonable consistency. With the bottom paddle wheel blade fully immersed (i.e., 1-inch) my records show a linear relationship with thrust and rpm up to 140 rpm, above which no significant increase occurs; neither does this line pass through the zero/zero point on the graph.

Reducing the bottom blades immersion by 1/8 inch (3 mm) does reduce the thrust value but only by around 3 to 5g. The linear thrust-rpm relationship does, however, stop at a lower speed of 120 rpm.

As might be expected, with the bottom blade only being half immersed, the thrust was significantly less. Again, once 120 rpm is exceeded there is little gain in thrust; in fact, the results suggest speeds above 160 rpm reduce the thrust.

Conclusions

It has to be remembered that these limited results were obtained in a simple fashion and cannot be expected to exactly match the normal conditions under which models driven by paddle wheels operate. They do, however, fit in well with my experience from sailing four such models.

1) None of the lines on the thrust-rpm graph pass through the zero-zero point and suggest that the wheels must be turning at a noticeable speed before significant thrust is produced. This could be similar to models driven by propellers where 'dead slow' rotational speeds don't move the model significantly.

2) All the results show a linear relationship between thrust and rpm.

3) The deeper the blade is immersed, the greater the thrust is at any speed.

4) An upper speed limit exists, beyond which no further increase in thrust occurs.

Over to you...

This work has, admittedly, only scratched the surface of the subject of model paddle wheels. The shape of the individual blades is likely to be important and I've a sneaky feeling that wider is better than deeper? So, let's hear about your experiments. Well, provided you don't mind wet trousers, that is! ●

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"Think Newton's Third Law: i.e., every action has an equal and opposite reaction"



Waterjet propulsion – Part 1

Dave Wooley provides an introduction to the installation and operation of waterjet drives...

In this brief two-part series, I will be venturing into waterjet propulsion, which to be fair isn't a new topic – indeed over the years there have been a number of excellent articles involving models with waterjet installations. But, and there is always a but, there's been very little published on

how to install these drives, on the nuances of their installation and on what to watch out for when venturing into waterjet propulsion. So, by approaching the subject from the perspective of a complete beginner, a raw recruit if you will, here I will be exploring how to install these drives by documenting my own experiences, errors and successes...

A little background history...

In the April 1998 instalment of my Range Finder series, I documented the history of hydraulic propulsion, having researched the type of drive

used in the experiments that were carried out by the Royal Navy off Shoeburyness 154 years ago and delved into the archives to uncover the original 1849 patent.

It was in 1866 that trials were undertaken to assess and compare the relative performance merits of HMS Viper and Vixen, both of which were propeller driven vessels, and HMS Watwitch, using the Ruthervan-designed hydraulic centrifugal pump. At that time there were strong differences of opinion within the Admiralty as to which direction future development should take. The subject was hotly contested and opposing views on the matter even appeared in the prestigious Letters columns of *The Times* newspaper. But while experiments in various forms of waterjet propulsion were to continue on and off until 1883, performance remained consistently below that of propeller driven vessels.

By the 1890s the Admiralty had abandoned its efforts to develop a fully functional hydraulic drive for warships. The RNLI, however, for good practical reasons, built three steam-powered hydraulic lifeboats: the Queen (stationed at New Brighton), the Duke of Northumberland (stationed at Harwich) and the City of Glasgow 1. (A fully working hydraulic scale replica of the Duke of Northumberland based on the original Ruthervan design built by model maker Les Jones from Holyhead is displayed at Holyhead Maritime Museum – see **Photo 1**).

So, what, you may ask, is waterjet propulsion? Well, in simple terms a waterjet generates propulsive thrust from the reaction created when water is forced in a rearward direction. Newton's Third Law: i.e., every action has an equal and opposite reaction.

The type of waterjet drive I'll be focusing on here, often referred to as a ducted propeller but more accurately known as an axial flow pump, was first developed in the 1950s by Sir William Hamilton.

In a modelling context, the first commercial waterjet drive was known as the Taplin-Baker Hydrojet. This was illustrated in an



*The hydraulic waterjet-powered working model of the RNLI steam lifeboat *The Duke of Northumberland* by Les Jones, former cox of the Holyhead lifeboat, seen here on display at the Holyhead Maritime Museum.*

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LEFT: An advert featured in the 1967 January edition of *Model Boats* magazine for the Taplin Baker Hydrojet.

The Axial flow waterjet drive

Essentially, waterjet drives for ships and power boats, both civilian and military, will fall into one of two distinct categories, these relating to the type of system used for reverse thrust.

The first, shown here fitted to the Finnish Hamina missile boat (see **Photo 3**), uses a reverse bucket with an internal reversing plate; this directs the flow of water downwards in a forward motion. A better understanding of this reversing bucket type can be appreciated in the technical drawing shown in **Photo 4**.

The second features a single one-piece bucket with no reverse plate; this covers the steering nozzle and directs the flow of water in a forward direction. As examples I've included photos of this as fitted to the experimental lifeboat FBC2 (see **Photo 5**) and to a Royal Marine offshore raiding craft (see **Photo 6**).

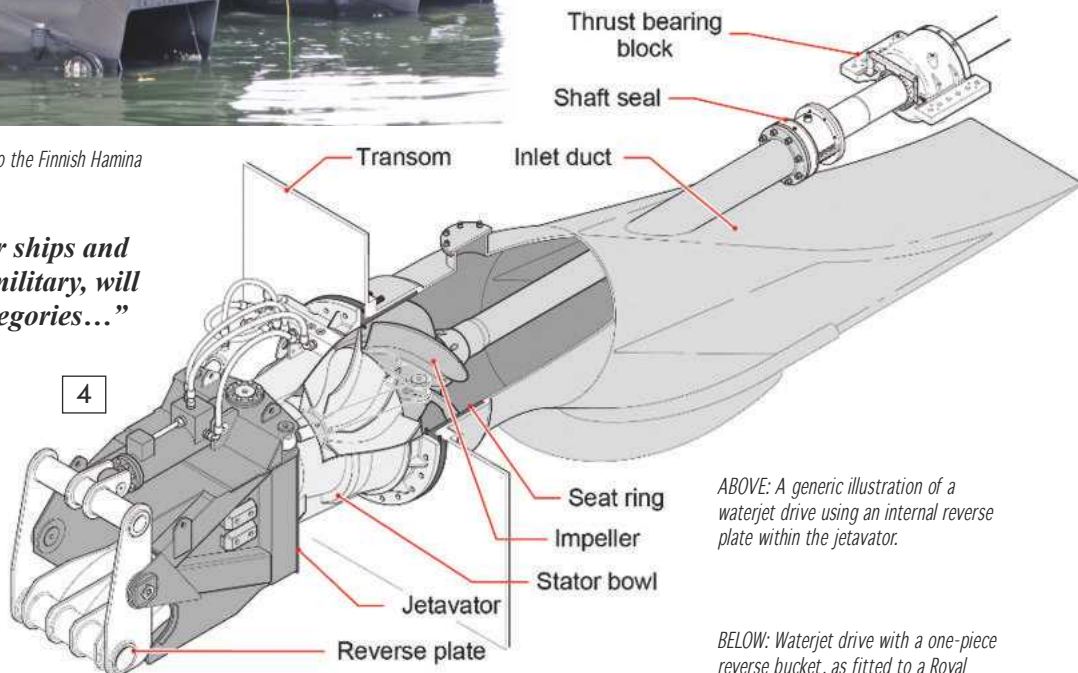


ABOVE: The RR Kamewa S11 waterjet drives, as fitted to the Finnish Hamina class fast missile boats.

"Essentially, waterjet drives for ships and power boats, both civilian and military, will fall into one of two distinct categories..."

advertisement in the January 1967 edition of *Model Boats* magazine for the princely sum of three pounds, sixteen shillings and six pence. Described as being suitable for model diesel engines from 2.5 to 8ccs, with a typical flow rate of 700 gallons per hour, the impressive list of technical details, something not repeated for subsequent waterjet drives, is quite astonishing (see **Photo 2**).

BELOW: The experimental FBC2 lifeboat fitted with the Hamilton HJ364 jet drive units.

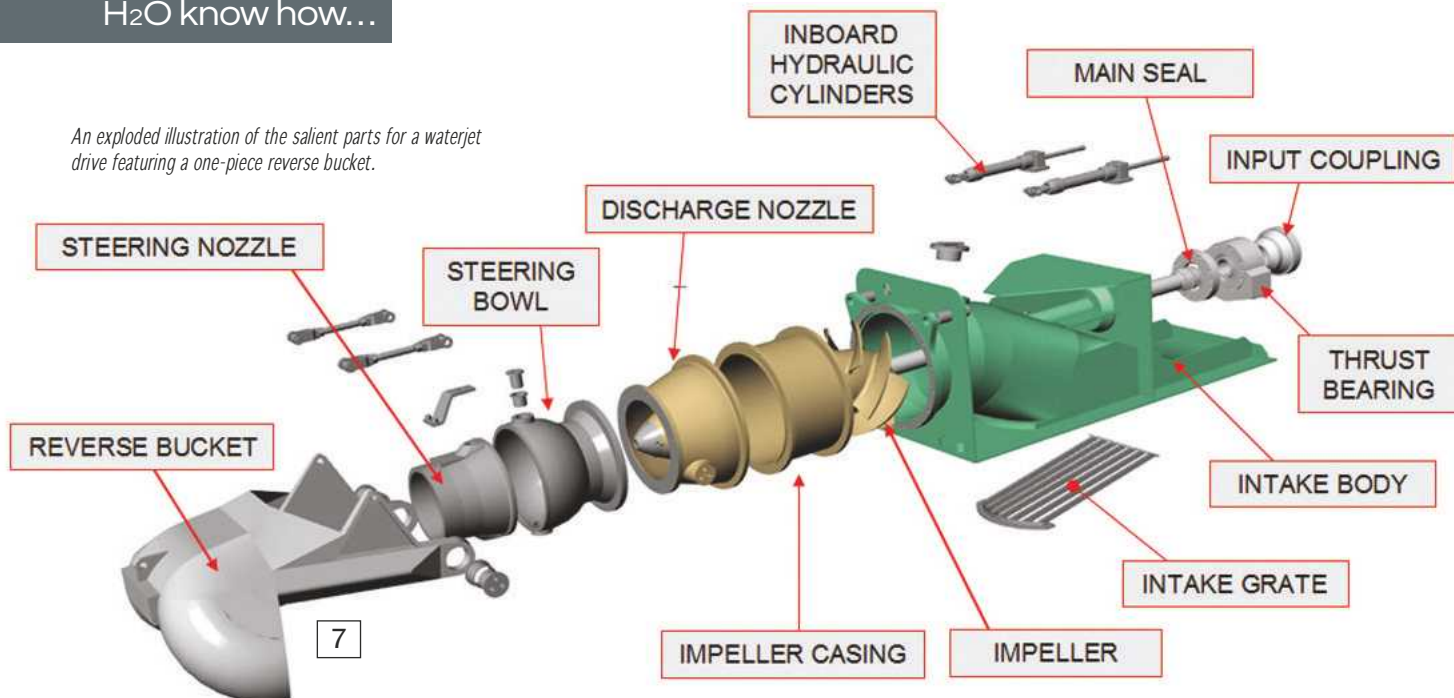


ABOVE: A generic illustration of a waterjet drive using an internal reverse plate within the jetavator.

BELOW: Waterjet drive with a one-piece reverse bucket, as fitted to a Royal Marine offshore raiding craft.



An exploded illustration of the salient parts for a waterjet drive featuring a one-piece reverse bucket.



but the accompanying exploded view (see **Photo 7**) best illustrates this arrangement.

Both differ mechanically but perform the same function.

Model waterjet drives

There are a number of manufacturers that offer these two types of jet drive. For example, Bauer (based in Wendingen, Germany) markets a moulded reverse bucket type complete with brushless motors for around €60, which has an impellor of 19mm (see **Photo 8**), while on eBay you'll find a wide selection of drives, with or without (brushless or brushed) motors, at very competitive prices.

Because as a design the Finish missile boat, which is fitted with the internal reversing plate, is attractive, straightforward and waterjet powered, I felt it ticked all the right boxes for my warship modelling purposes (see **Photo 9**). I therefore purchased on a jet drive that was a suitable match from a Hong Kong-based eBay vendor. This came equipped with two 28mm drives and two brushed 540 motors, so once I'd armed myself with a suitable drawing and a hull, work could begin.



The Bower waterjet drive with the reverse bucket attached to the stator bowl.

The hull and drawings

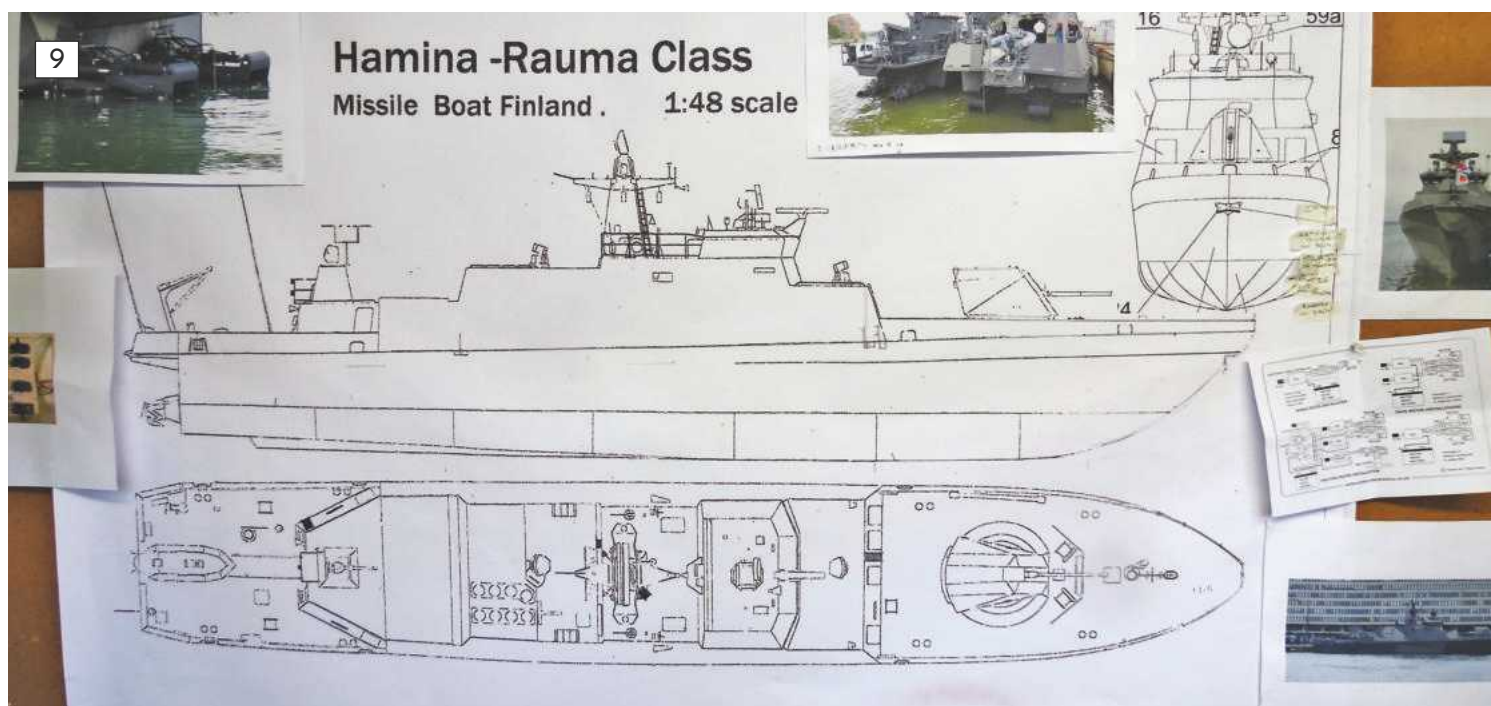
For me this project would be more about experimentation than exact scale, and I knew I'd need a considerable amount of room inside the hull in which to position all the hardware. My original intention had been to build entirely from scratch, until I realised a suitably sized hull form that with some minor modifications would closely match that of the Hamina missile boat was available from

GRP hull specialist Christian Caparro. This expedient option tied in well with the scale I'd decided upon (1:48) and the drawing was therefore adjusted accordingly.

Preparation for installation

First off, I sanded down the interior gunwale and fitted a strip of .50 marine ply along the edge to provide a good surface to which the

BELOW: A simple 1:48 scale drawing of the Hamina class fast missile boat used for developing the hull and installation of the waterjet drive units.



10



ABOVE: As delivered, Dave's waterjet units, which included the intake body, 540 motors, motor cooling rings, Jetavator (which required assembling), bowl only a steering nozzle (discarded) and fixing screws.

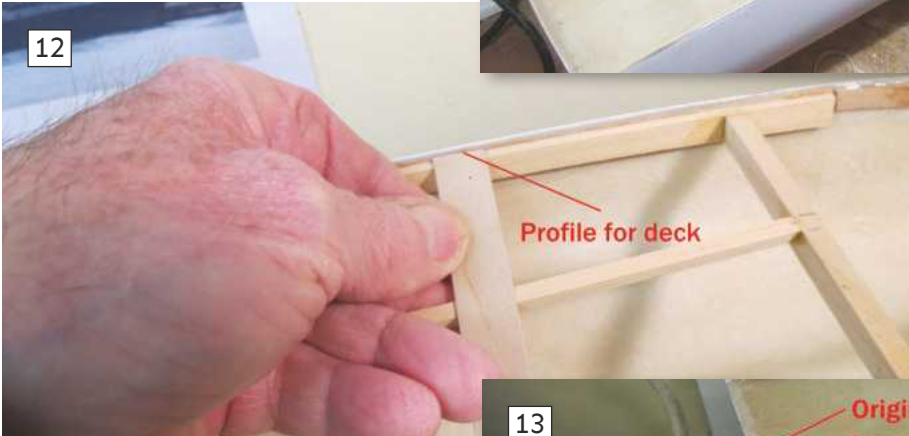
RIGHT: Framing up the hull with deck and gunwale bearers.

BELOW: Ensuring that the depth below the edge of the hull matches the thickness of the deck.

11



12



Profile for deck

internal timber bearers could be fixed. I then set about positioning the drives and also the areas that would provide access to the hull's interior. After all, nothing is more annoying than the realisation, having successfully installed all the internals, that those below deck are impossible to reach (see **Photos 10 and 11**).

Worth pointing out is that I prefer fitting my 1mm timber deck within the hull. It's not as easy as just placing the timber on the top of the hull but this approach helps avoid stress cracking along the deck edge, being that everything is held much more firmly in place. It's also beneficial while fixing the deck edge bearers to have a strip of the deck that can be used to determine the correct depth of the bearer below the top edge of the GRP hull. This ensures the deck when fitted has a flush finish with the top edge of the hull (see **Photo 12**).

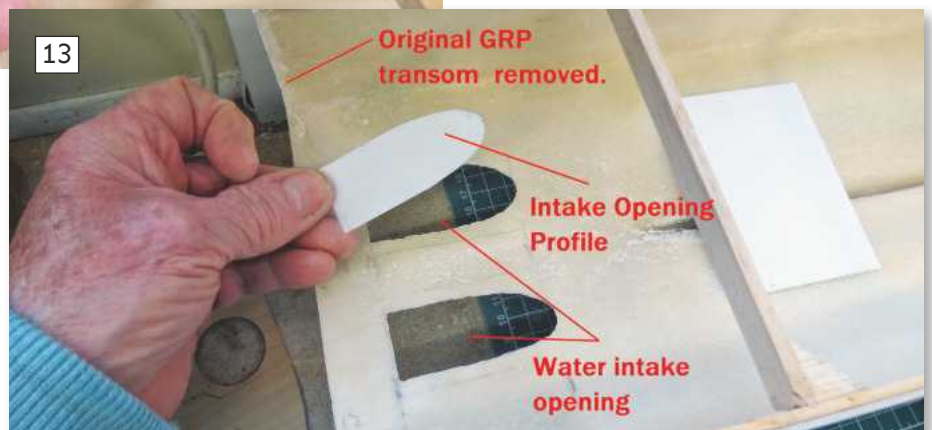
Using a profile, the location of the water intake can be marked on the bottom of the hull. Then, taking a small drill bit, a series of closely connected holes can be made along the inside edge of the marking and the area carefully removed (see **Photo 13**). Being position critical, it's always best to check and double check while filing to the correct shape.

Once my drive inlet had been made, attention then shifted to fixing the new flat

transom (which I formed from 1mm marine ply) and adding the gunwale deck timber support. Note how my drive outlet was marked onto the inside of the transom and was cut to form a tight fit for the flange on the drive outlet (see **Photo 14**).

With the inlet and outlet locations corresponding precisely, the intake body could then be placed into position and a

13



Original GRP transom removed.

Intake Opening Profile

Water intake opening

ABOVE: Removing the existing GRP transom and preparing the water intake openings.

BELOW: Replacing the GRP curved transom with a flat 1mm marine ply transom.

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1mm marine ply transom

“On chatting with others who’ve fitted these drives, I learnt the single most annoying problem seems to be leakage of water from the seal around the drive, so I knew any additional action I could take to stop this happening would be a wise move...”

trough formed around the edges. This helped to ensure a good seal when the drive was eventually bonded into position (see **Photo 15**). On chatting with others who’ve fitted these drives, I learnt the single most annoying problem seems to be leakage of water from the seal around the drive, so I knew any additional action I could take to stop this happening would be a wise move. You will also note (see Photo 16) that at each end of the duct there is a timber seating, used so that the drive could be firmly secured into place with the screws provided.

Fixing and sealing the duct, however, remained one of the last jobs on my list, as the intake body and the motors would, for



ABOVE: Preparing the seating into which the intake body would be fitted. BELOW: The seating for the intake body looking towards the transom.



ABOVE: Motor mounting plate and motors were added to the intake body and coupled to the drive shaft. Also, the stator was combined with the intake body via the transom. BELOW: A tray was fitted forward to house the electronic speed controllers and radio receiver.



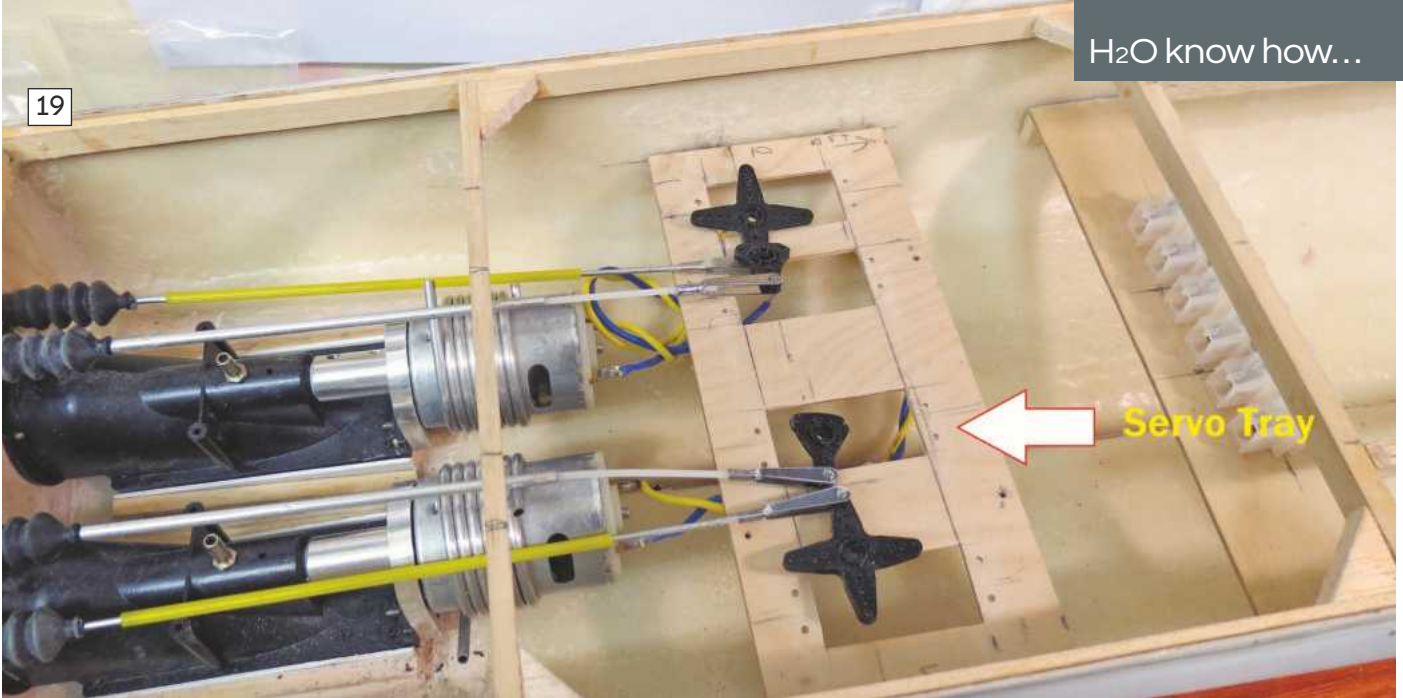
the time being, need to stay removable. With that in mind, the motor mounts and motors were added to the intake body. The drive and motor were then positioned, while the flange on the outlet of the duct was inserted into the transom opening and the stator onto which the jetavator (steering nozzle) was fixed with the special screws supplied through the transom and into the face of the inlet duct. This isn't as difficult as it sounds, as the holes in both the stator and duct are pre-positioned (see **Photo 17**).

As with all internal installations, planning and tidiness go hand in hand. I made sure I kept the ESC and RX nice and clear of the motors, i.e., well forward of them but within the hatch opening. Also, much of this installation was made removable for two good reasons: one, if something goes wrong then the defective part can be easily removed – and Sod's law dictates that when this does happen it will invariably involve a part that presents the most difficulties in terms of access (see **Photo 18**) and, two, if a full relocation is required then the entire section can be lifted clear.

Installing the control servos

When installing servo and linkages in a conventional drive, often all that's required is just one servo linked to the rudder tiller arm, or arms (if the model has two rudders). Waterjet drives require a completely different approach and need careful thought and preparation.

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ABOVE: A platform was fitted to support the four servos (which control direction and reverse thrust) for the jetavator. BELOW: The servos were bolted to the platform. As Dave points out, it's advisable to include the rubber seating.

20



On a conventional propellor drive directional control is generally achieved by moving the rudder left or right, which interferes with the flow of water from the propellor. Alternatively, direction can be managed by the adjusting the revolutions of either propeller or, for going astern, reversing the direction of the motors. Most of these actions can be performed by one servo to the rudder and an electronic speed control unit for the motors.

When using the waterjet drive, change in direction is achieved by moving the jetavator, thus altering the direction of the flow of water. Each jetavator requires a servo. Going astern, as explained earlier, requires the flow of water to be changed by moving a plate within the jetavator; this forces the water flow forwards, acting in part as a brake, thereby driving direction backwards. It's worth mentioning

at this juncture that the ESC for waterjet drives can be forward only, thus avoiding the problem of inadvertently putting the motors into reverse (something I'll be focusing on in more depth next month). To activate the reverse plate in the jetavator another servo is required, therefore two servos per jetavator are necessary.

The jet drive came complete with connecting arms and their specific ball connectors, their location being pre-moulded into the unit. In order to establish how the servos should be arranged to give the best results I once again consulted fellow modellers for advice and viewed some of their own efforts. Amongst those that provided assistance was lifeboat enthusiast Stan Parkinson, who has fitted out models of the Shannon and the experimental Shannon;

here the near ideal arrangement was having the servos mounted on a tray across the hull (see **Photo 19**).

The connecting rod supplies, I discovered, were too short, but fortunately alternative linkage rods are readily available and so replacements were sourced and fitted. The metal linkage rod went to the two outer servos for directional control, while the two inner servos would provide reverse and brake control. Here, the original metal flexible wire was replaced with a nylon inner core from a model aircraft Bowden linkage cable (see **Photo 20**).

As can be seen in the **Photo 20**, holes were made in the transom to accommodate linkages corresponding to those on the intake body. I realised, however, that linkages through these holes to the directional servos would foul on the motor water cooling tubes,

21



LEFT: Using the screws provided, the stator bowl was secured to the intake body via the transom.

BELOW: The assembled jetavator, ready to be fitted to the Stator bowl.

so consequently they were filled in. The circular section I'm holding in my photograph (see **Photo 21**) forms part of the alternative directional-only bowl-like fixture, which was later disregarded as the model required the reverse Jetavator. The nipples visible on the top of the stator in the photo provide the inlet for water cooling to the motors.

The assembly instructions my unit came with were supplied purely in illustrated format but turned out to be pretty easy to follow, making the assembly of jetavator fairly straightforward (see **Photo 22**). Using the screws provided, the two jetavator buckets were fitted to the stator. I did, however, make a few minor modifications of my own. There were linkage points on the jetavator for the control rods but, as I considered these inadequate in terms of throw and location, I added extension arms and secured them to the existing pivot points on my jetavator (see **Photo 23**). For the operation of the reversing arm, the original ball joint connector supplied was fitted, and here you'll see I've fitted both directional and reverse connectors to the jetavator. It's also worth noting that the outlet holes on the transom for the control rod have been relocated (see **Photo 24**).

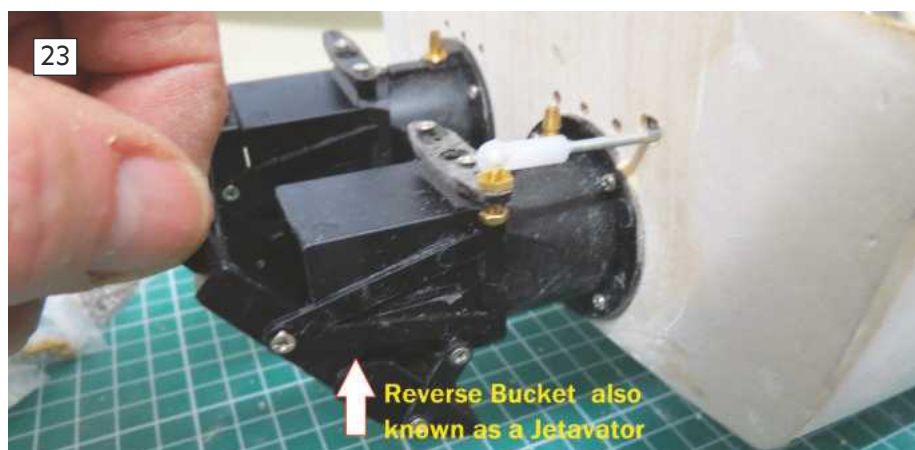
Part 2

Next month I'll be covering the remainder of the preparation and installation, I'll be sharing the results of my nerve tingling first on the water trials and I'll be taking a look at just what can actually be achieved with waterjet drive. ●

22

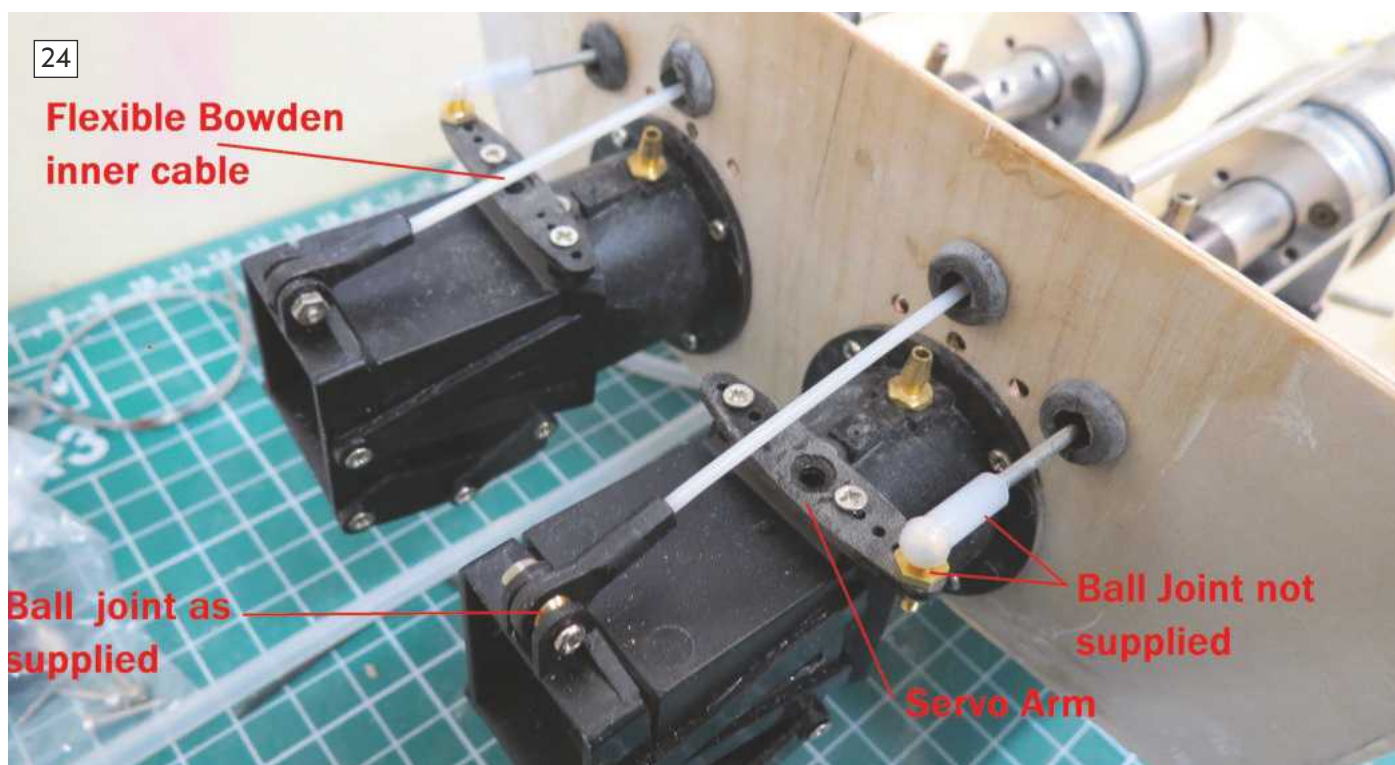


23



ABOVE: Testing the reverse plate for altering the flow of water forward. BELOW: Connecting up the various linkages to the jetavator from the servos.

24



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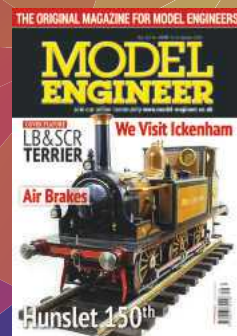
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Boiler Room

Richard Simpson shares some very valuable boiler buying advice...

I think the one thing I've come to be concerned about more than anything else while testing boilers over the years is when someone approaches me with a second-hand boiler. My questioning as regards its origins, history and manufacture then starts, and all too often with every answer my heart sinks a little further.

Frequently there's no paperwork, and sometimes it's not even known whether what I am being presented with is a manufactured boiler or a homemade one, so I find myself with nothing to go on. Sadly, many such conversations end in disappointment, with any high hopes of the boiler in question being able to power the modeller's boat around the pond in the very near future shattered, only to be replaced by the very unwelcome prospect

of extracting the boiler from the boat, completely stripping it of all fittings, removing the lagging, fitting plugs to all the bushes and preparing it for a pressure test.

Even boilers I've been confidently informed were produced by reliable manufacturers have, on closer inspection, become tales of the unexpected; a good example of this being the supposed Stuart Turner example illustrated here (see **Photo 1**). After a strip down for cleaning and restoration purposes, it quickly became clear this boiler was certainly not the work of Stuart Turner and instead needed to be dealt with as home-made.

Consequently, I think it's worth sharing some advice on the potential pitfalls of second-hand boilers and how prospective buyers might be able to avoid them...

Be prepared

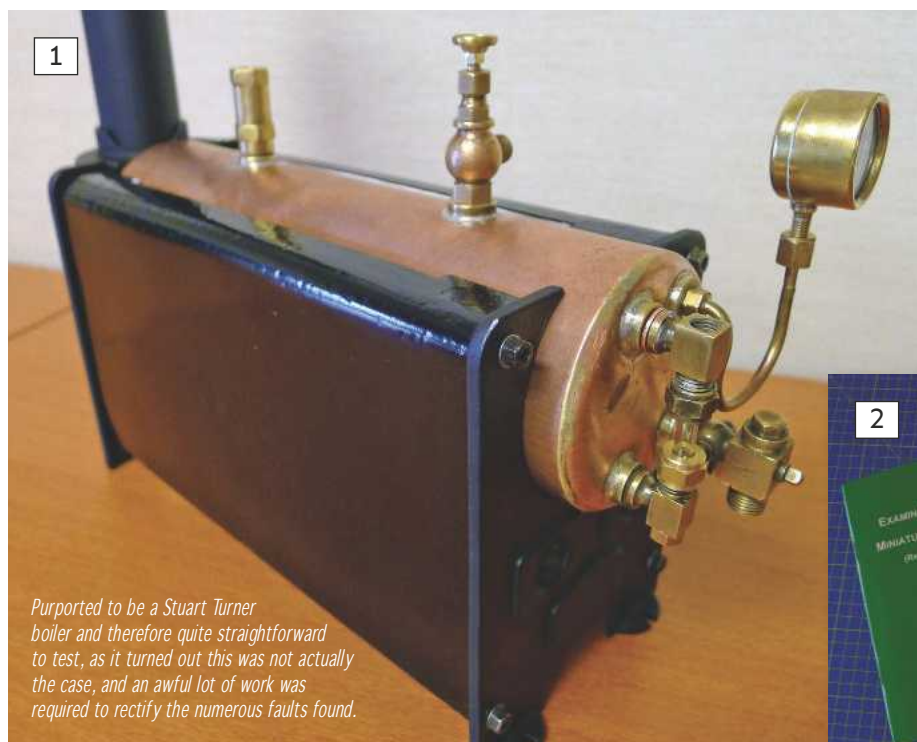
The first thing you should always do before buying a boiler is a little bit of homework. While there are plenty of good books out there to assist with selecting a boiler that meets your requirements in terms of capacity and working pressure, there is not so much coverage of the rules and regulations, possibly as a result of them changing so frequently. I would, therefore, thoroughly recommend that you get hold of a copy of the current rules and read them through. The current set of rules is contained in what is colloquially known as the 'Orange Book', or more properly 'The Boiler Test Code 2018'. This is available from any of the organisations that signed up to it and is even available to download from a number of websites – The Southern Federation of Model Engineering Societies, <https://www.sfmes.co.uk/public/>, being just one of the organisations that provides digital access. The 'Orange Book' has now taken over from the older 'Green Book', which should now be discarded (see **Photo 2**).

My main reason for recommending you read through this book is because not only does it contain guidance for what you must do before presenting your boiler for testing, but it also explains what a boiler tester is going to be looking for when he conducts a test. If you are considering buying a second-hand boiler, this book provides a much better idea of what is going to be required of you in order to achieve a pass.

I would strongly advise against buying a second-hand boiler without first having had a good look at it. If you're inexperienced when it comes to steam boilers, try and take a more knowledgeable modeller, who knows all the right questions to ask, along with you when you go to view a prospective purchase. Alternatively, you could ask the seller if he'd be willing to meet up at a local model boat club so the club's inspector could take a look at the boiler and offer you some guidance.

Be extremely aware of the potential pitfalls of buying online. If you do decide to take this route, make sure you establish whether the boiler you're interested in has suitable

BELOW: The 2018 'Orange Book', which superseded the 2012 'Green Book', will provide you with the current steam test rules. A tester should be able to provide you with a hard copy, but you will find easily downloadable digital copies available online.



Purported to be a Stuart Turner boiler and therefore quite straightforward to test, as it turned out this was not actually the case, and an awful lot of work was required to rectify the numerous faults found.



accompanying test paperwork and whether it is a manufactured or a home-made boiler before proceeding. Likewise, make sure you reserve the right to cancel any transaction entered into should you feel less than convinced everything is as it should be or as described when you turn up to collect it.

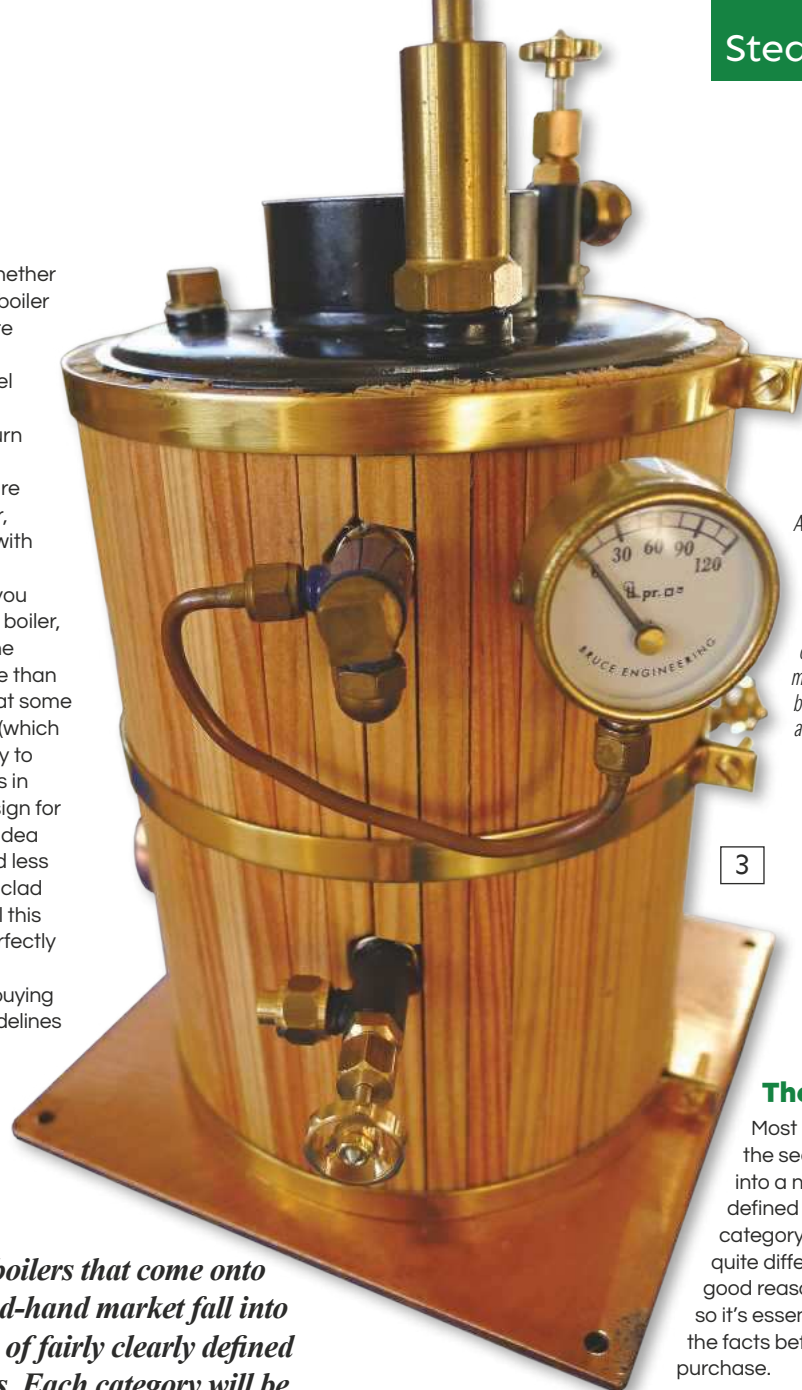
You will need to balance what you are seeing against the cost of a new boiler, which will obviously come ready to fit with all suitable certificates in place. When compared to some of the challenges you might experience with a second-hand boiler, sometimes the cost of a brand new one might seem a little bit more reasonable than you first thought. Also, bear in mind that some boiler manufacturers, such as Pendle (which advertises in this magazine), are happy to make you a bespoke boiler with fittings in threads and locations of your own design for very little extra cost, which makes the idea of a second-hand boiler seem less and less attractive. You also have the option to clad it and paint it exactly how you want. All this will give you a very individual boiler perfectly fitted out for your plant (see **Photo 3**).

If, however, you are still considering buying a second-hand boiler, the following guidelines might just help you along the way...

“Most boilers that come onto the second-hand market fall into a number of fairly clearly defined categories. Each category will be considered quite differently by the tester (for good reason, as will be explained), so it’s essential you are aware of all the facts before committing to any purchase”

Expect to pay top end for a boiler that comes with all original paperwork, as this comes with the assurance that it has been well made and properly tested by the manufacturer.

4



Always weigh up the option of a new boiler when looking at a second hand one. Sometimes the hassle of a complete strip down along with the cost of any necessary repairs may make the expense of a new boiler suddenly seem a lot more attractive.

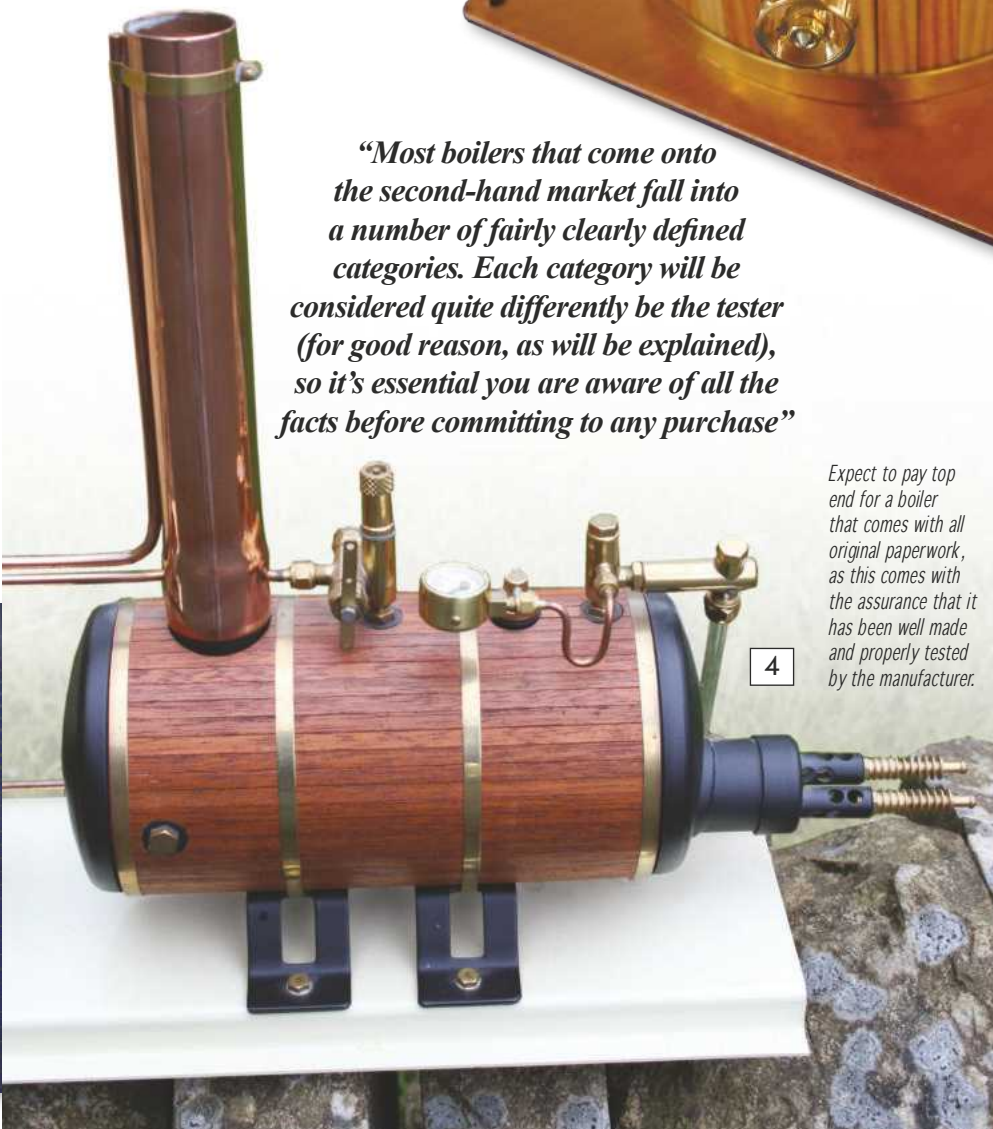
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The boiler types

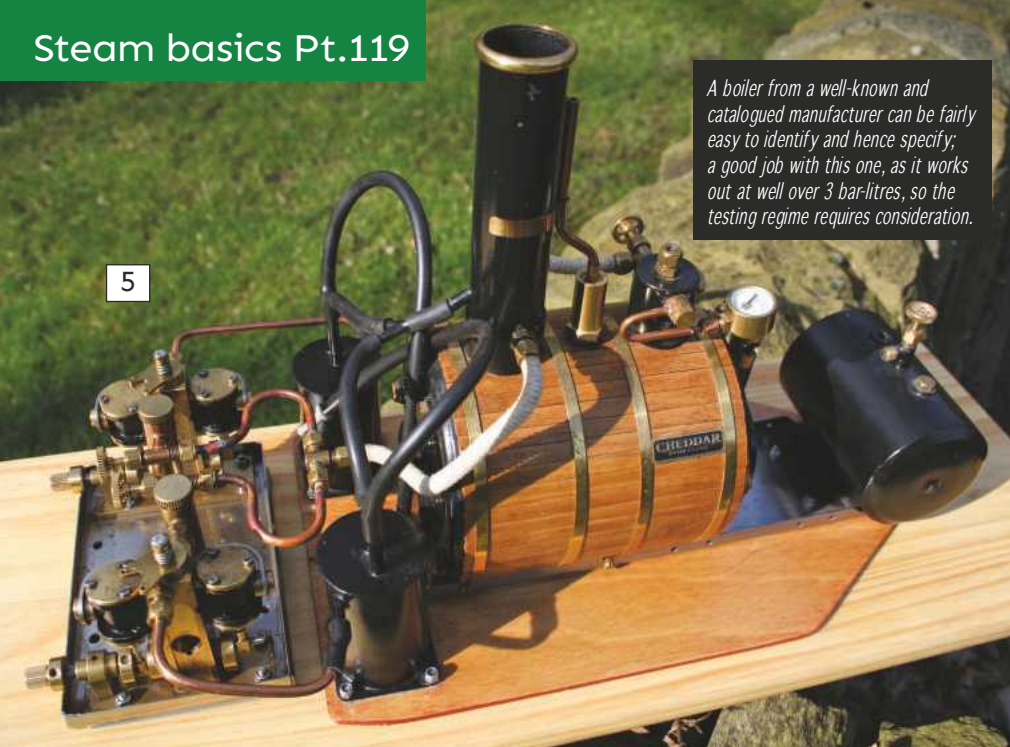
Most boilers that come onto the second-hand market fall into a number of fairly clearly defined categories. Each category will be considered quite differently by the tester (for good reason, as will be explained), so it’s essential you are aware of all the facts before committing to any purchase.

A)

First up, and by far the easiest to deal with, is a manufactured boiler with all original pressure test and subsequent test paperwork. It should still be pressure tested even if below the 3 bar-litre limit but having the original paperwork will make this a quick and easy process. For instance, if all bushes and joints are visible with the lagging in place, the inspector may decide that the lagging does not need to be removed so, consequently, buying a second-hand manufactured boiler with paperwork is definitely the preferred option. Some caution is still required here, as you will need to check the paperwork does indeed appear to match the boiler; this is not always easy with old boilers, particularly as in the past some manufacturers did not actually identify their boilers with an individual number. But buying a boiler with all test paperwork included from a well-known manufacturer is by far the best option. The Hemmens Caton boiler illustrated (see **Photo 4**) came complete with all original paperwork, including the instruction manual, so a test was easy and straightforward.



5



A boiler from a well-known and catalogued manufacturer can be fairly easy to identify and hence specify; a good job with this one, as it works out at well over 3 bar-litres, so the testing regime requires consideration.



6

LEFT: Below 3 bar-litres, this Cheddar plant is capable of pushing a model of up to around 4ft in length around easily and indeed makes for a compact and reliable plant for a huge number of models. Lack of paperwork is not the end of the world if the manufacturer is beyond doubt.

BELOW: Hemmens still produces steam plant today, so asking this manufacturer to assist with the identification of one of its products may be worthwhile.

B)
Next up is a manufactured boiler without paperwork. Frequently, such models have been passed down as family heirlooms. The likelihood here is that because the significance of the paperwork wasn't realised, it was then either separated from the model/boiler and subsequently lost, or it may simply have been discarded. At least with a manufactured boiler, however, there is the possibility that its specifications will be known by the boiler tester. As an example, I have a table documenting the specifications for all of the Cheddar boilers ever made; so, if your boiler is one of these, I will have details of the designed working pressure and capacity to refer to. This was precisely the case with the Cheddar boiler and twin-engine plant illustrated (see **Photo 5**). This was likewise the situation with the complete Cheddar plant pictured (see **Photo 6**), which also came without paperwork but being so easily identifiable, proved very straightforward to test.

Again, a pressure test will be required, for all size boilers, but again, if all bushes and joints are visible, then the tester may be happy to leave any lagging in place.

There may be some good quality boilers offered on the secondary market in this category, but not having any paperwork



7

“Don't be taken in by a seller advising you that: “You don't have to worry; testing isn't required for this”. I can assure you it is!”

should be reflected in the price you are paying. A seller who is asking a hefty price for a boiler without any form of test certificate or paperwork might just be being a little unrealistic. Don't be taken in by a seller advising you that: “You don't have to worry; testing isn't required for this”. I can assure you it is!

Also worth bearing in mind is whether the boiler manufacturer is still in business and can assist with both identifying your boiler and supplying you with its correct specifications: fortunately, the case with this vertical Hemmens boiler (see **Photo 7**).

C)

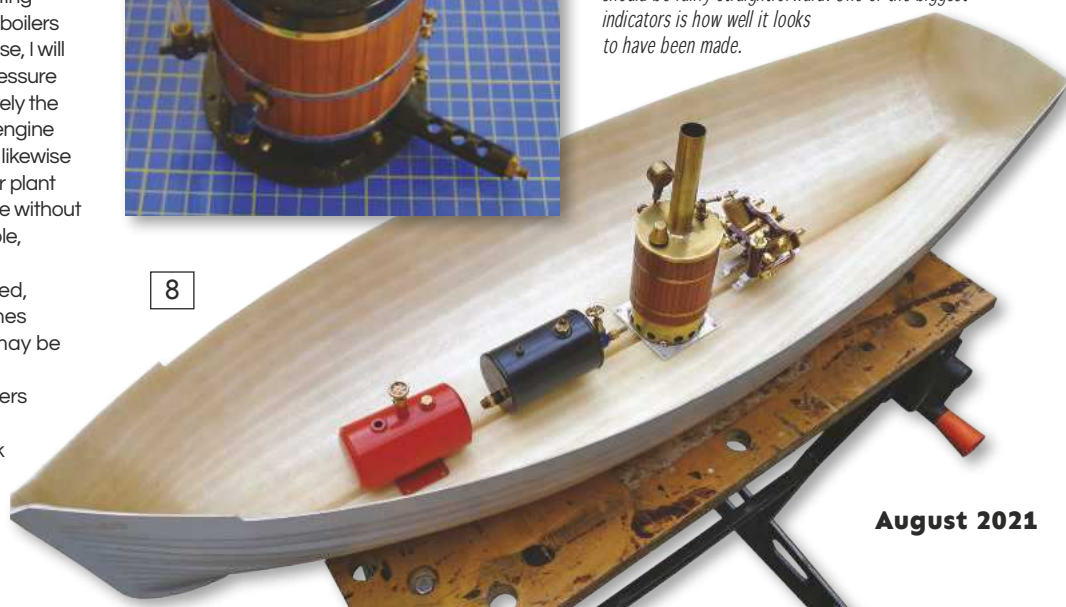
Next up are the slightly greyer areas of homemade boilers with test paperwork. From a tester's point of view, while home-made boilers present a little uncertainty about just what we might be dealing with, paperwork will be a huge bonus. The tester may well want to see the original drawing used by whoever made the boiler in order to determine whether it was accurately followed, and this should include the designed working pressure. If previous tests have been carried out, though, this may not be necessary.

An initial pressure test will be required; however, with supporting test paperwork, again, this should be a fairly straightforward process as all information should have already been recorded.

The tester will be paying attention to the quality of the build, particularly in terms of the silver soldered joints, as well as whether the boiler does appear to actually match the paperwork. A 5-inch diameter boiler with a stated capacity of 250 ml, for instance, might just raise one or two eyebrows! A few years ago, I was helping a fellow club member sort out the best arrangement for the internal layout of his proposed model and learnt he was proposing to use a homemade boiler (see **Photo 8**). He had, however, built it according to a plan that incorporated all of the details, such as proposed working pressure, etc. All I had to do, therefore, was to check that the build had actually followed that plan.

BELOW: A home-made boiler that can be checked as conforming to a drawing which incorporates its specifications should be fairly straightforward. One of the biggest indicators is how well it looks to have been made.

8



“All too often, I’ve seen homemade boilers fail the pressure test, usually at a silver soldered joint, meaning they’ll usually prove either impossible or certainly very expensive to repair... There are a couple of people in the country who will attempt a repair, but it has to be understood they’re unable to offer any guarantees”

D)

Finally, we enter the dark and murky world in which a disappointingly high percentage of second-hand boilers reside: the home-made boilers with no paperwork category. Here, with nothing to go on from the start, a tester may well state he’s simply unable to conduct the necessary tests.

Sometimes there are possible ways forward, but these all necessitate venturing into difficult terrain and involve a considerable amount of work. The tester will, for instance, want to satisfy himself that the quality of the silver soldering is up to standard, with clearly visible fillets outside and clear penetration inside. The boiler will definitely have to be removed from a model, stripped down, cleaned thoroughly and plugs prepared for all bushes. It may be that the tester will have a very small camera that can be inserted into one of the bushes, thereby allowing sight of at least some of the joints and an idea of the quality of the soldering, but even so a boiler like this will almost certainly require pickling (see Boiler Room Instalment No. 61 in the January 2016 edition of Model Boats) first to thoroughly clean its internal surfaces.

The dimensions of the boiler can be measured to obtain a figure for maximum pressure so that an agreed working pressure can be decided upon, thus providing a suitably comfortable ‘Factor of Safety’. The boiler will then be tested to twice this agreed working pressure. All too often, I’ve seen homemade boilers fail the pressure test, usually at a silver soldered joint, meaning they’ll usually prove either impossible or certainly very expensive to repair.

There are a couple of people in the country who will attempt a repair, but it has to be understood they’re unable to offer any guarantees. This is mainly due to the fact that with a home-made boiler they will have no idea of what the melting point of the original silver solder is, and therefore there’s always the possibility of disturbing it during the process.

Having explored all other avenues, the only remaining option is to accept that the boiler cannot be tested and simply view it as a display piece. Illustrated is a plant which was purchased for no other reason than the fact its engine, a fascinating radial three-cylinder oscillator, can still be run on compressed air (see **Photo 9**).

If you are considering a second-hand home-made boiler with no paperwork, a thorough examination is the very least you should do. Frequently leaks tend to manifest themselves in tell-tale signs such as green (verdigris) or white (calcium) stains. You will,



however, be running a very real risk of the inspector saying that he is unable to test the boiler, something not only very disappointing but potentially very expensive as well. Just to give you an idea, the last time I had a second-hand boiler repaired the cost came to around £100: a fee I’d still have had to pay even if the repair had proved unsuccessful.

Conclusion

I’ll admit I’ve bought second-hand home-made boilers from a certain online auction site in the past. Invariably, though, this was to secure a very unusual engine rather than the boiler itself. In doing so, I accepted the fact that these boilers would probably never be

given a test certificate, therefore ruling them out of ever being used in a public space, but, of course, I wouldn’t have even considered making the purchase unless the price asked had reflected that fact.

Wherever possible, I would recommend buying new, certainly for your own build. If, however, you are considering second-hand, hopefully the above may help you avoid some of the possible pitfalls. I totally appreciate the temptation of a beautiful plant featuring an old boiler (see **Photo 10**) and a superbly made engine but take care. Manufactured boilers complete with the correct paperwork should be a fairly secure purchase; anything else might just turn out to be a hard and expensive lesson learnt! ●

In the beginning...

Dave Wiggins reflects back on 'The Golden Box'...



"Like all the early proportionals, this first Kraft set was eye-wateringly expensive, but it proved to be reliable and accurate, and it won Phil Kraft a world championship event"

The very first Kraft digital

Jerry Pullen was this early radio's lead design engineer, although there had been previous attempts at creating a 'sort of digital' R/C to compete with the first few analogue sets (e.g., Space Control, Orbit) then coming into use as replacements for the vibrating reed/multi-channel R/C sets.

Respectfully disregarding Doug' Spreng's influential but limited production Digicon (possibly the first PPM 'digital' to actually fly), Bonner's 'Digimite', Elliot's first 'Logictrol' and Hoover's F&M 'Digital Five' had all been serial produced and offered, at the most exorbitant prices, on the world market (including UK availability of the Bonner and F&M sets). Enter Philip Kraft – a savvy business manager, aerobatic pilot and keen experimenter, who had previously built and sold his own 'Kraft Custom' sets from a home garage. Kraft decided, with backing from his family, to purchase a small factory unit and attempt to dominate the market with this very successful design sold under the Kraft and Pullen (KP appeared on all Kraft radios sold) trademark. A very similar set built by Kraft but rebranded as PCS (Proportional Control System) was also offered at a slight reduction in price.

Like all the early proportionals, this first Kraft set was eye-wateringly expensive, but

As we're currently slap bang in the middle of summer, now seems the perfect time to whisk you back to sunny California in about 1965 or so by featuring my own example of the most significant of the first few successful digital guidance systems to grace the world stage: Jerry Pullen and Philip Kraft's influential KRAFT KP4/6, better known to modern collectors simply as 'The Gold Box'.

ABOVE: Dave's own, as yet unrestored, example of Jerry Pullen & Phil Kraft's famous Kraft digital – a thoroughly modern and hyper expensive bit of high-tech kit c.1965.



LEFT & BELOW: This is the first Kraft radio airborne outfit – receiver, battery and KPS7 servos all metal cased (Image courtesy of Bucher, USA).

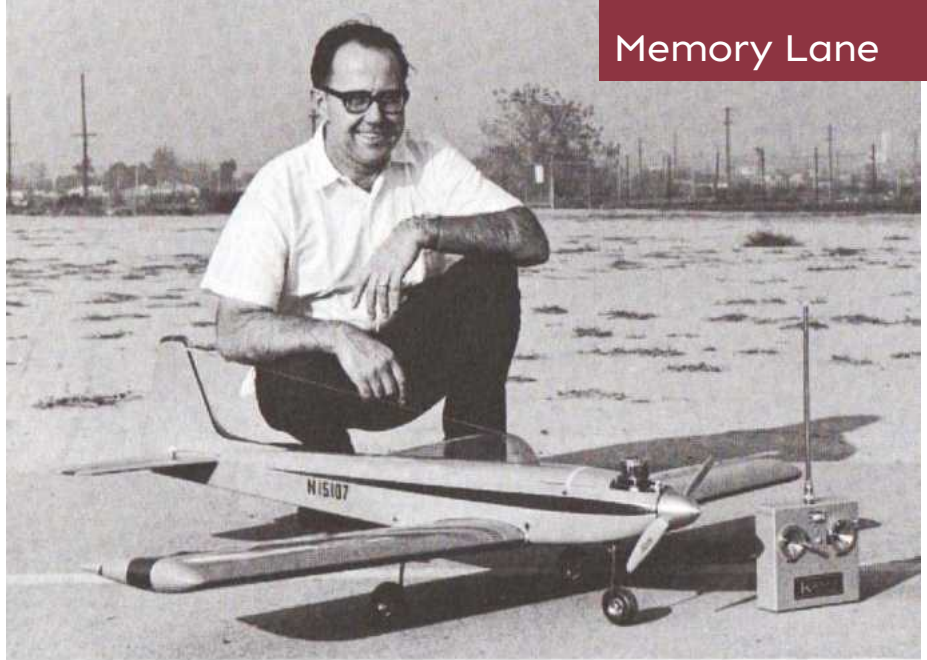


it proved to be reliable and accurate, and it won Phil Kraft a world championship event; this successfully launched the brand, which went on to mature with offerings such as the famous 'Gold Medal Series', and indeed many subsequent models, enabling Kraft to become the world's best-selling brand for some decades.

A choice of early proportional control sticks

Given a bit of persistence and some cash, today's collector can find examples of this famous old radio in a number of stick variations. The first few were made with hand engineered metal control columns (used by Mr Kraft to win his World Champions' gold medal). This was quickly followed up by versions employing less expensive moulded plastic sticks, sold to Kraft by both Bonner and Orbit. At this point in time, Bob Dunham's Orbit brand was still just about holding on as a leader in R/C technology, but 'the times they were a-changin'' and Mr Dunham, who had mistakenly backed the analogue proportional concept after his long domination of 'reeds', knew that evolution was inevitable. All of this was long before Mr Kraft set up an in-house plastics division under Chuck Hayes to mould his own control columns and servos.

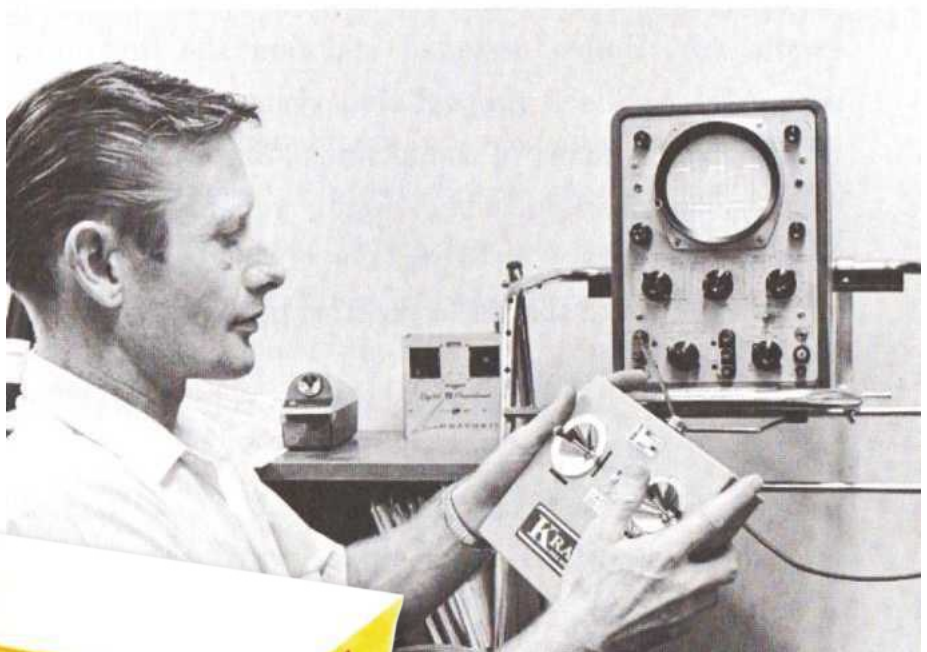
My own example has the Orbit supplied sticks. I am very familiar with these, having serviced Orbit radios in the UK when young and therefore keen to have them on any set to be owned by myself. Like all



PHIL KRAFT, president

The pivotal people responsible for this radio were Philip Kraft (owner, Kraft Systems Inc) and Jerry Pullen (designer).

JERRY PULLEN, chief engineer



plastic mechanisms, Orbits can have age related problems but these are insignificant compared to the Bonner design, which I never liked. In fairness, Howard Bonner's design was the very first dual-axis control column to be mass produced anywhere in the world and it was employed by many other manufacturers, including RCS and Skyleader here in the UK.

Modernisation options

Going into the basics of Jerry Pullen's original Kraft transmitter design, as featured here the circuitry, really is quite straightforward, seeing as it's assembled onto one, very neat, printed circuit board.

Mr Pullen's circuit (schematic Stateside) comprises of a simple twin-transistor/crystal controlled R.F. (Radio Frequency) section radiating via a lengthy antenna rod, and this is modulated by a pulse encoder strip comprising of a 2-transistor 'clock' and of 4 to 6 monostable (a.k.a. 'half shot')

'Even when bought 'used' these sets were never cheap and today it's just the same as they are so desired by collectors'

pulse generator transistors set to give 1.4 millisecond centres (the Kraft standard for many years), the end result of which is the PPM (Pulse Position Modulation) 'pulse train' still used in many of today's radios.

The long antenna rod, with its co-axial base (only the outer is used), fitted to all of the first-generation American proportional brands mark out any such set as 'early', even to the non-expert. I own just one such rod still in good order and share it between the few early transmitters in my possession. The antenna was long in order to, in so far as it could, compensate for the very low output of the first-generation high-frequency output transistors (example – Texas 2N706). Other manufacturers (Orbit for one) used centre-loaded antennae and doubled up (bootstrapped), output transistors to the same end.

The first Kraft receiver and servo

The first generation Kraft receiving set, pictured here courtesy of Bob Bucher in the USA (thanks indeed Bob!), comprised a medium-sized metal can receiver with a fixed frequency/crystal controlled Superhet' (5 spots on 27 megs were available in UK), and a discrete decoder using early SCS (Silicon Controlled Switch) devices, with the latter feeding both pulse and power to a set of four Kraft model KPS-7 metal-cased/linear (push-pull) servos via 5-pole silver plated connectors.

Power and distribution

Power, in both the transmitter and receiver, was supplied by button-cell Nickel Cadmium rechargeable battery packs made by G.E. of America that for the receiver and servos were multi-tapped to suit the first-generation servo amp' design.

The first few Kraft sets entered the UK via various routes. Early importers included Ed Johnson of Larkhill and Geoff Franklin of Leicester (see his featured advertisement), with other hobby dealers or rich tourists bringing in a set one or two at a time. With the introduction of the vastly more modern 'Gold Medal' of 1968/69, Geoff' Franklin secured sole importation rights to the UK via his Brother Maurice who worked as a technician at Kraft's new Vista California factory. Before that, just about anyone with enough money could import a Kraft direct from West Coast, USA. These early radios really were terrifically

RIGHT: Just a few years on from our featured radio, Kraft & Pullen (K-P) designed and marketed the revolutionary and modern set that made Kraft Systems Inc. into the biggest R/C manufacturing concern in the world: the lightweight 'Gold-Medal Series' of 1968.

BELOW: In Dave's text he refers to 'eye-watering' early digital prices. Just absorb the UK cost of a KP6B from importer Geoff Franklin in 1965! Note how the importance of service is correctly stressed, as all digital radios required regular skilled repair services well into the 1970s.

RADIO CONTROL MANUAL No. 2

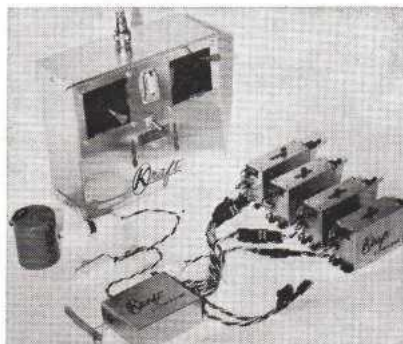
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- CONTEST PROVEN

KP3B PRICE £137: 10: 0
KP4B PRICE £231: 0: 0
KP6B PRICE £258: 0: 0

expensive to buy and the few 'club' people I knew who owned one bought their sets second-hand as previous owners upgraded to a new Gold Medal. Even when bought 'used' these sets were never cheap and today it's just the same as they are so desired by collectors.

Again, I am indebted to Bob Bucher of the USA for the photographs of his own,

first generation, Kraft airborne pack, and to Pete Waters of Michigan for technical and upgrade advice on this radio.

In my next column I'll be leaving vintage R/C alone for a bit in order to briefly describe my rebuild of a classic British two-stroke: a MERCo 35/6cc/glow-plug engine. Until then, I'll say adieu for yet another month. ●



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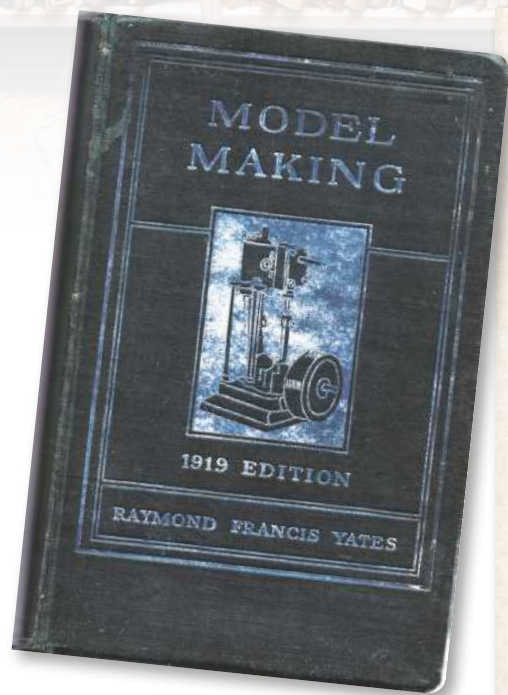
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Back to the Bookshelf

Part 2

John Parker reflects on the content of yet more of the classic titles in his collection



ABOVE: The cover of *Model Making*.
RIGHT: An RC model submarine, 1919 style!

This month the browse through my library of modelling books continues with a few more selected volumes. Not included are books that have previously received mention in other instalments of this series; for example, Adam Harvey's *Model Boat Construction* (April 2014 issue), Walt Musciano's *Building and Operating Model Boats* (April 2015 issue) and some beginners' books (January 2016 issue). Most can still readily be purchased from second-hand book dealers and are not expensive, unless you insist on a first edition in excellent condition and complete with its dust jacket. Unfortunately, it was once common practice to throw away the dust jacket once you got the book safely home, and many of my books are without them, making a scan of their cover an unrewarding exercise for the purpose of illustrating this article. Once again, they are listed chronologically.

Model Making

by Raymond Francis Yates,
Norman W. Henley Publishing Co.,
New York, 1919

Raymond Francis Yates was the editor of *Everyday Engineering* magazine and presents in this work of some 400 pages and 300 illustrations his choice of the best articles that appeared in that journal over the preceding two years. They are not limited to marine subjects but within that

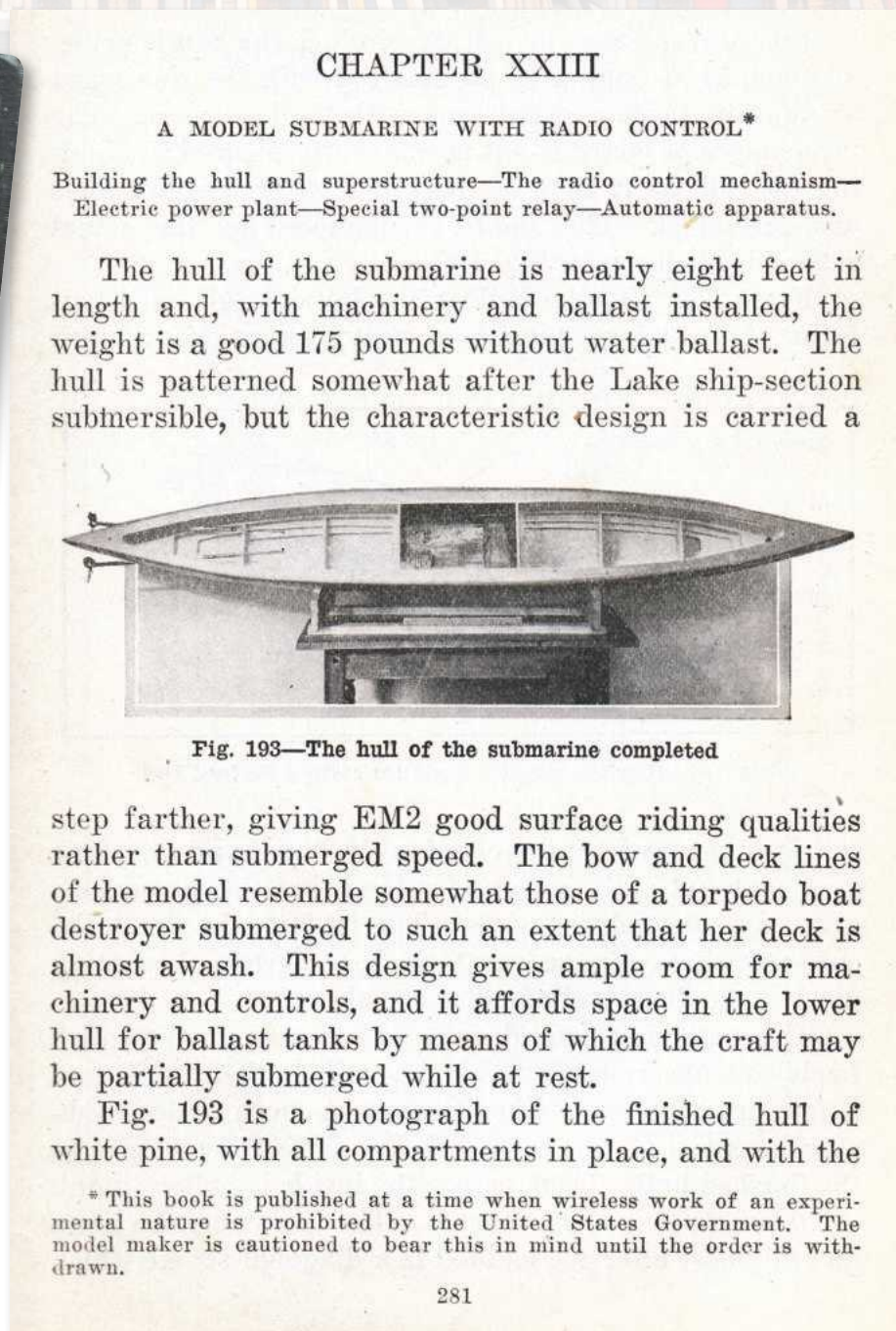


Fig. 193—The hull of the submarine completed

step farther, giving EM2 good surface riding qualities rather than submerged speed. The bow and deck lines of the model resemble somewhat those of a torpedo boat destroyer submerged to such an extent that her deck is almost awash. This design gives ample room for machinery and controls, and it affords space in the lower hull for ballast tanks by means of which the craft may be partially submerged while at rest.

Fig. 193 is a photograph of the finished hull of white pine, with all compartments in place, and with the

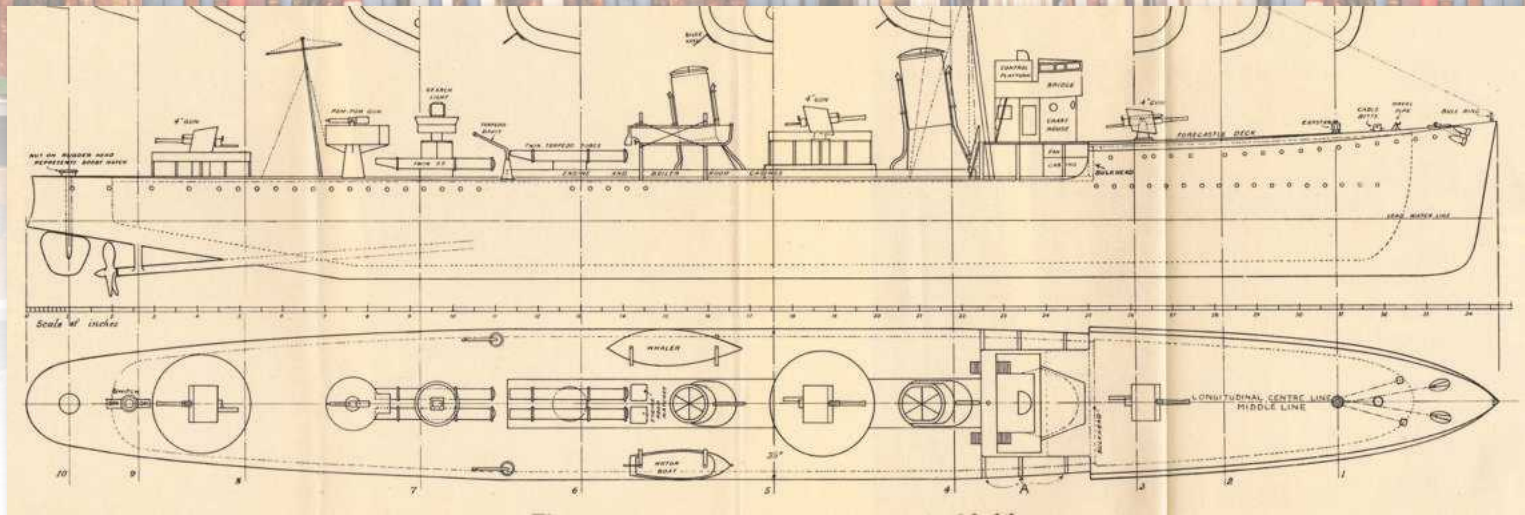
* This book is published at a time when wireless work of an experimental nature is prohibited by the United States Government. The model maker is cautioned to bear this in mind until the order is withdrawn.

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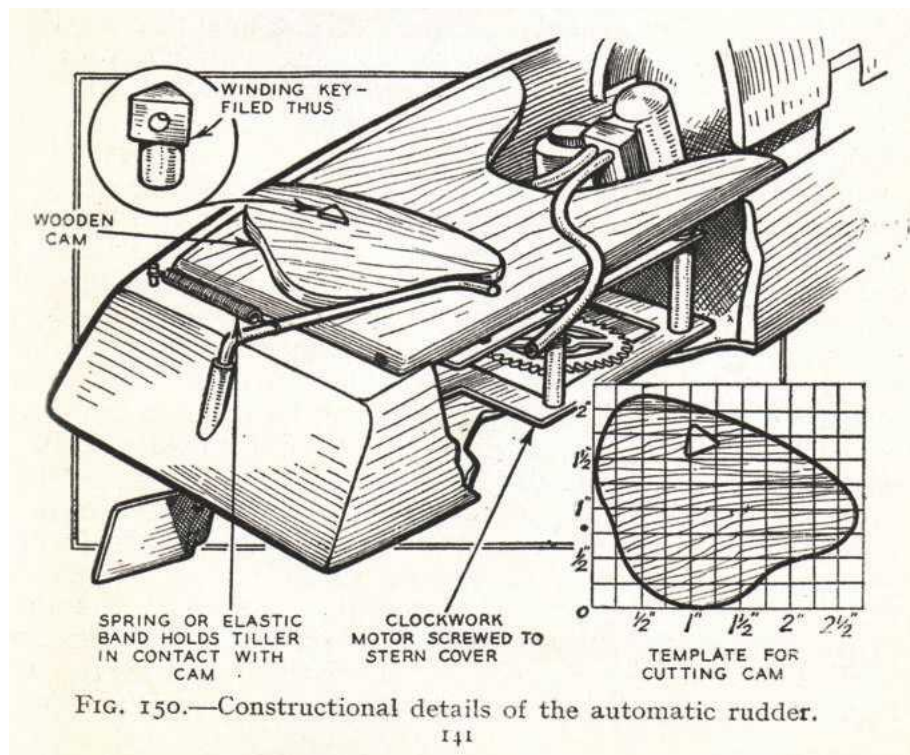
category include a twin cylinder marine engine, flash steam plants (plus a couple for model aircraft!), a steam turbine, hydroplane, 'sharpie' type model boat, submarine chaser and, most notably, a model submarine with radio control. Being 1919, this required the making of a coherer detector, a motorised sequential function selector, gearboxes, relay switches and a rudder actuator in what would have to be the most remarkable example

of a project ahead of its time. The project section is preceded by a thorough treatise on workshop practice including pattern making, electro-plating, silver soldering and lathe work.

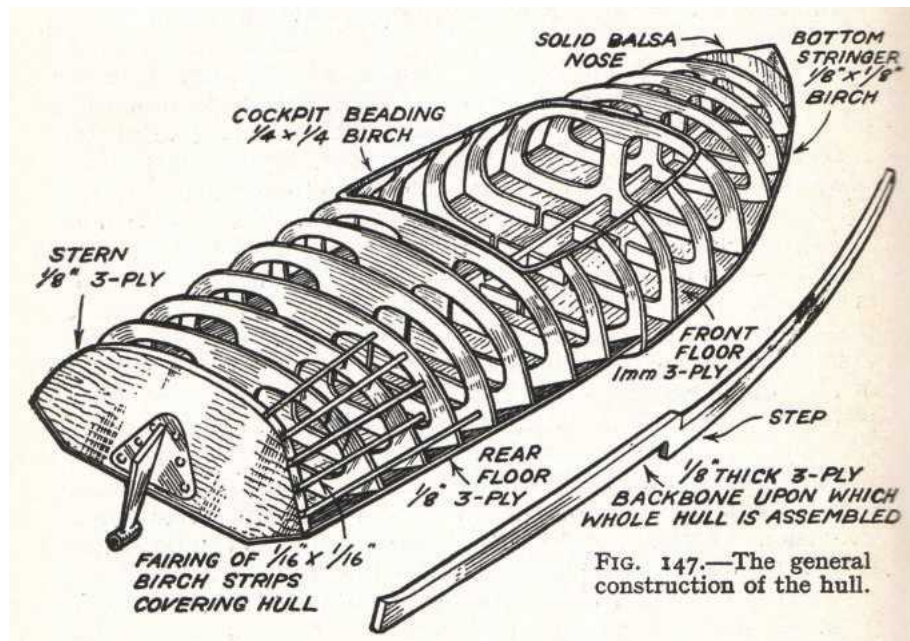
It is for another work that the name Raymond Francis Yates is better known though, and that is *The Boy's Book of Model Boats* of 1920. According to the preface, it came about because he could find no



ABOVE: An S-class destroyer drawing from *The Model Shipbuilder*. BELOW: Automatic rudder detail from *Model Boat Building*.



BELOW: Hydroplane construction from *Model Boat Building*.



suitable books on building model boats in the children's department of his local library and vowed to write one of his own. The result has become something of a classic.

As it is out of copyright there are now many reprinted and print-on-demand versions available, but there's no need to buy one as it is available as a freely downloadable e-book from the Project Gutenberg library at: <https://www.gutenberg.org/files/29064/29064-h/29064-h.htm> The hand-drawn illustrations may make it look a little simple, but the theory and advice is sound, with the making of fittings described because: "It is practically impossible to buy such things in this country".

Model Boat Building

edited by F.J. Camm, George Newnes Ltd., London, 1940

Another compilation of articles, this time from the man behind *Practical Mechanics* and its many related publications. A small volume of 145 pages, it has a few chapters on building methods and the practicalities of sailing a model yacht; it then goes on to describe the building of a sloop, schooner and two display galleons, a flat-bottomed steam boat, the well-known Streamlinia steamer and steam or petrol engine hydroplanes with all the necessary drawings. An example of a schooner built from the book appeared in *A Brief History of Model Yachts* in the November 2020 issue of *Model Boats*, while Streamlinia appeared in the March 2015 issue.

The usual disadvantages of a compilation are evident: there is little consistency or natural flow to the chapters, but there is quite a bit of useful information for anyone with a particular interest in the subjects covered.

The Model Shipbuilder

by J.K.D. Hutchison and Gerald C. Portch, G. Bell and Sons Ltd., London, 1949

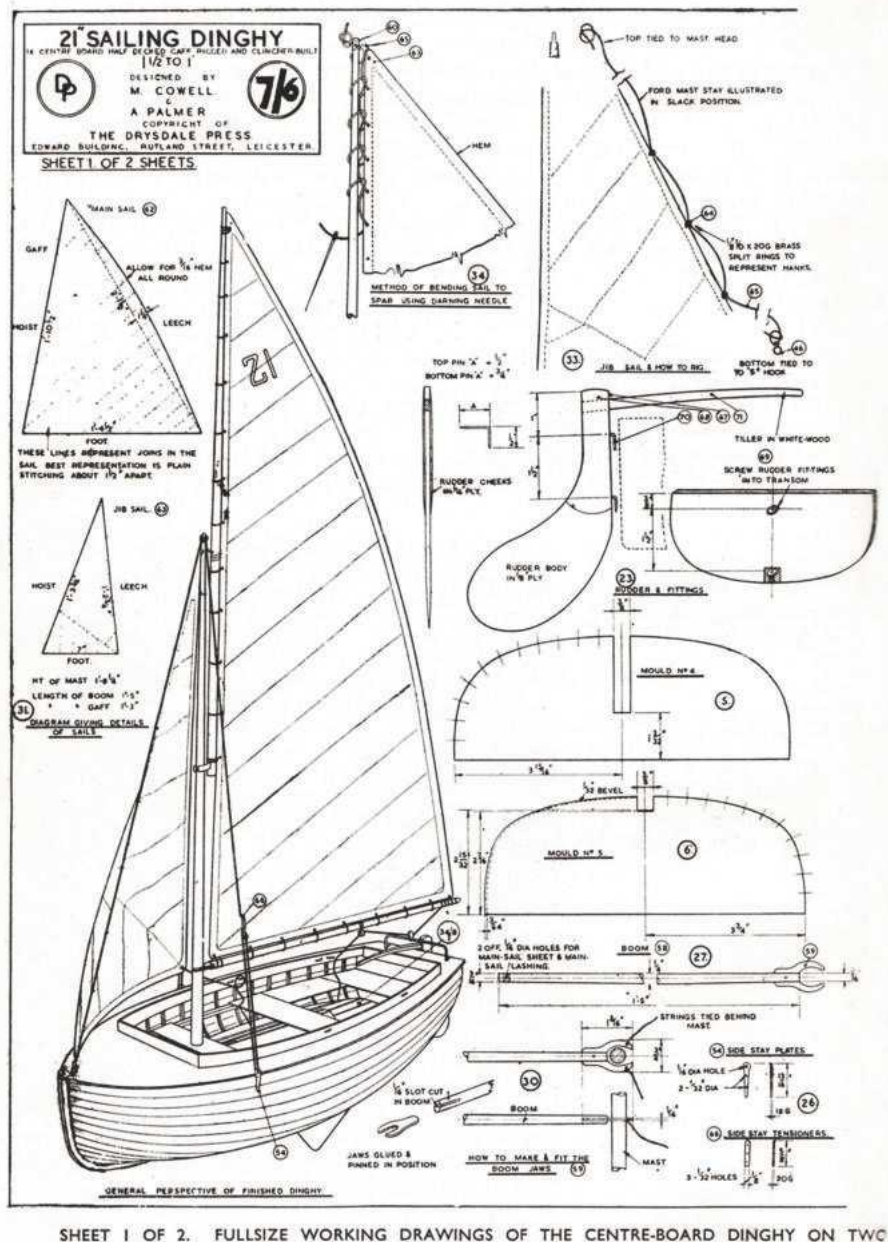
Completed by Portch after the passing of Hutchison, both naval commanders, this book is a practical guide to the making of working scale model ships using traditional carved and laminated wooden (bread and butter) construction. Pull-out plans and instructions are provided for an S-class Destroyer, Fast Motor Boat and Coaster cargo vessel and

there are some fine photographs, but there is little sense of progression from one project to the next. The opportunity was lost, for example, to introduce built-up construction for the Fast Motor Boat, which has to make do with a hull carved from a single block of wood in the same manner as the previous S-class Destroyer model. Electric is the only source of power considered (clockwork is "not recommended") in keeping with the strictly traditional, old-fashioned approach that I'm afraid even the beginner, at whom the book is aimed, would have found somewhat dull.

The Model Boat Book

compiled by G.H. Deason, The Drysdale Press, Bedfordshire, 1950

Published just one year after *The Model Shipbuilder*, *The Model Boat Book* is a far more up to date and absorbing book. The Drysdale Press was at that time publishing *The Model Mechanic* magazine and most, if not all, of the 15 projects featured in the book originally appeared in the pages of that magazine. Each has a chapter devoted to it that includes instructions and a reproduction of the first sheet of the plans to reduced size – a complete set of full-size plans was available separately from the publishers. One year later

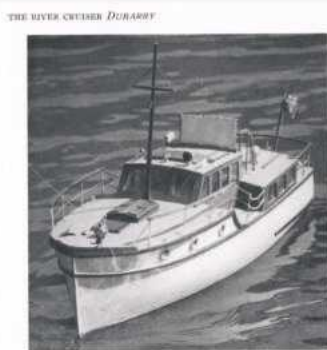


SHEET 1 OF 2. FULLSIZE WORKING DRAWINGS OF THE CENTRE-BOARD DINGHY ON TWO

The MODEL MECHANIC 1/3



DUBARRY CRUISER
Dubarry's River Cruiser, an elegant 16 ft. 100hp-powered scale model



The decks can now be fitted. Firstly, fit the stringers into the jugs as shown on the drawing and cut the decking to shape. The forward deck can be split up into three sections to economise in plywood, but if the builder has sufficient material it can be put on in one piece. To avoid various fittings being knocked off at a later date, it is a good idea to fit them before the deck goes on. The nails can then be riveted over underneath the deck.

Fit the deck, that is the forward section, the after section, and also the two side mid-pieces. Carefully sandpaper round the edges, and fit the top rubber, making it a neat fit against the mid-section (fairing pieces).

Make up the cabin sides complete with their windows and celluloid. Erect them in position, and glue and nail them. It will be found that one frame lends a window. Cut this neatly away. As with the deck, most of the cabin top fittings can be completed and fitted, so that the nails can be clenched inside. Before finally fitting the top, remember to varnish or stain the inside of the cabin, and glue some small curtains to the windows.

The wheel house is a separate unit and the "exploded" perspective gives a good idea how to assemble the various parts. In making up the sides, instead of using 4 in. ply and gluing the celluloid

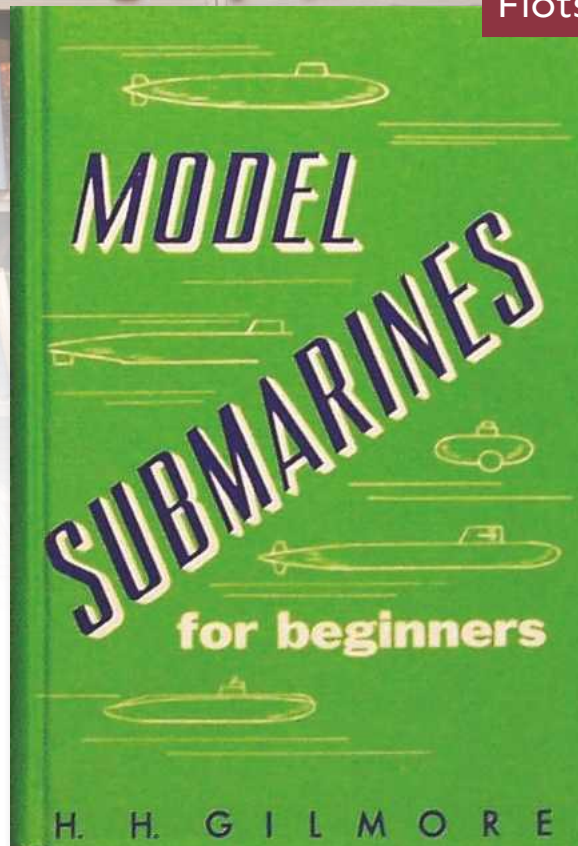
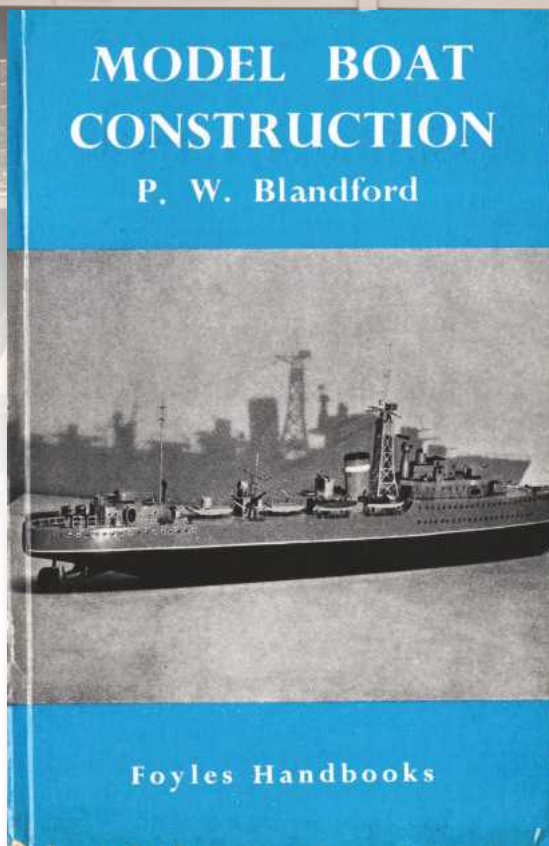
ABOVE: A sailing dinghy model from *The Model Boat Book*.

The Drysdale Press amalgamated its *Model Mechanic* and *Model Car* magazines to form *Model Maker*, which by 1966 had evolved into *Model Boats*, the magazine you are reading now. These early plans of the Drysdale Plans Service formed the nucleus of the *Model Maker* plans service and a few (e.g., MM101-MM104) are still listed as available from Sarik Hobbies.

The book has retained a fresh appearance despite its 70 years of age as it is printed on art paper and the reproduction of photographs and drawings is first-rate. Four sailing craft, a decorative galleon, Jetex and diesel-powered hydroplanes, cabin cruisers and a brace of RAF air-sea rescue launches powered by a choice of rubber, clockwork, electric, diesel or petrol engines make up the projects. Most would fall into the 'advanced' category, but one or two would suit careful beginners prepared to follow the construction guide. There are no general chapters on tools or theory, but two short concluding chapters cover steam engines and electric and diesel installations.

On reflection, it is surprising how little coverage there is of electric motors and how

The Dubarry river cruiser featured in *The Model Mechanic* and *The Model Boat Book*.



ABOVE: The cover of *Model Boat Construction*. ABOVE RIGHT: *Model Submarines for Beginners*. BELOW: *Model Submarine Technology*.

much there is of clockwork and multi-strand geared rubber motors. A reflection of the supply and prosperity situation of the times I suppose, for the notes for one of the projects, a simple electric launch, state that the original launch "was powered by a small 6-volt electric motor, but there should be no difficulty in converting it to clockwork propulsion if such a motor is more readily available."

Model Boat Construction

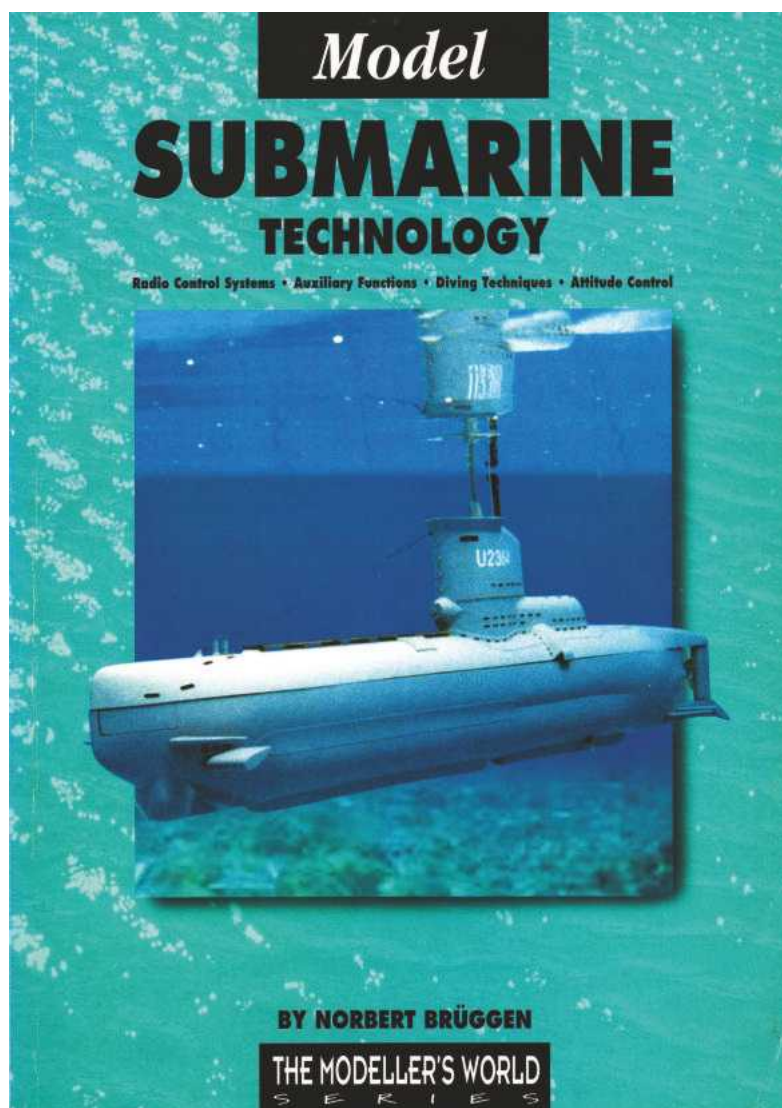
by Percy W. Blandford, W&G Foyle Ltd., London, 1954

This slim volume of 95 pages in the low cost (2s 6d) Foyle's Handbook series provides a general guide to the making of sail and power boats, with chapters such as Types of Models, Ship Modeller's Workshop, Drawings, Hull Construction and Fittings and Finishes. Constrained by the book's small format and reliance on the author's own simple line work illustrations, the information looks sound but is inevitably basic in nature, there being no projects or specific examples of model boats.

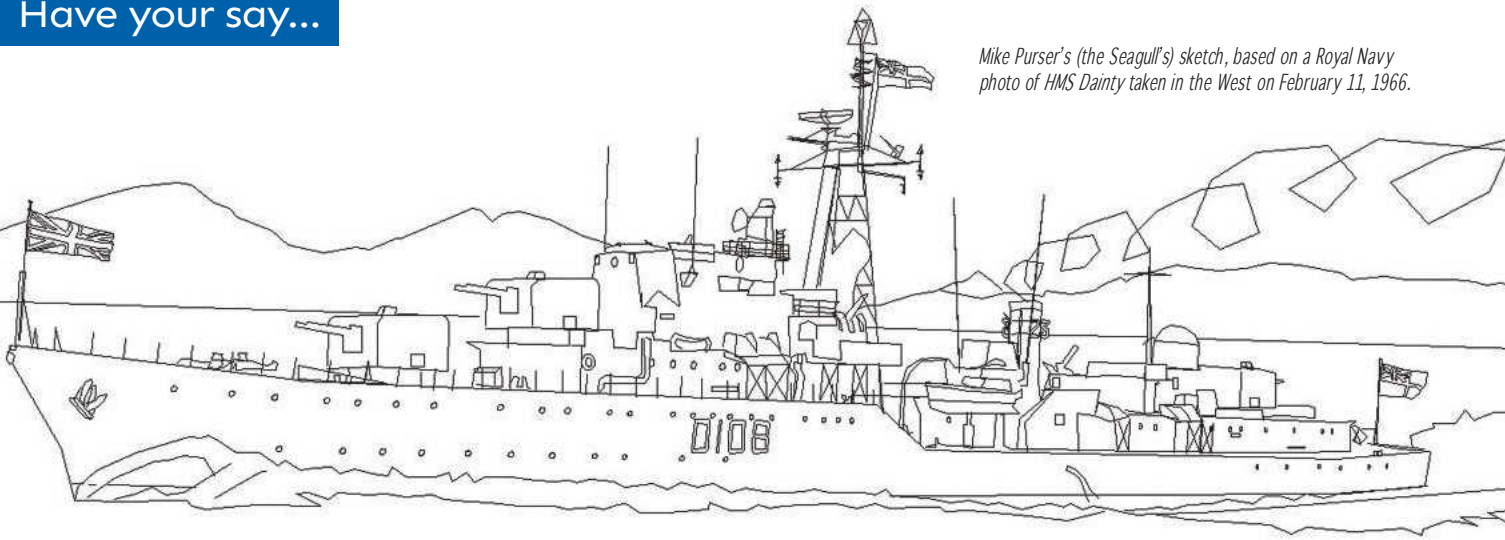
Model Submarines for Beginners

by Horace H. Gilmore, Harper & Rowe Ltd., New York, 1962

I pounced on this book when, as a youth, I came across it in a library! At last, I thought, a book that would explain all the mysteries of ballast systems and control of a model submarine. Imagine my disappointment when I discovered the model submarines consisted of simple non-working display models whittled from pieces of wood! I had to wait until 1993 for the first thorough treatment of the subject, Norbert Bruggen's *Model Submarine Technology*, published by Traplett. ●



Mike Purser's (the Seagull's) sketch, based on a Royal Navy photo of HMS Dainty taken in the West on February 11, 1966.



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, Models Boats, MyTimeMedia Ltd, Suite 25, Eden Hse, Enterprise Way, Edenbridge, Kent TN8 6HR.**



HMS Dainty in Admiralty Floating Dock 9, Singapore, April 1969, in the middle of the forenoon, in commission and clearly not underway – so why no Jack?

LET'S TALK VEXILLOLOGISM!

Today, flag etiquette might seem trivial, but a 100 years ago, before radio, communication between ships was possible only with megaphones and gunshots by way of sound and flashing lights and flags for visual codes. Essentially, flags had as much meaning as words on a page. Flying the wrong flags on a warship model, therefore, makes it as toy-like as painting it in red and white polka dots!

Hack Mason was quite correct in the May issue. Please note also, though, that the Jack and Ensign are flown only between 'Colours' (normally 0800) and 'Sunset' from HM ships when attached to the ground – the instant the last line drops, or the anchor is 'a-weigh' (the ship is 'underway'), down comes the Jack and the ship wears just the White Ensign, usually day and night at the masthead, but certainly when passing other ships and land. A warship never flies a Jack whilst at sea.

During the first week in the Royal Navy, they taught us all this really important stuff. So, a ship at anchor or alongside during the day always wears the Union Jack, whereas a moving Royal Navy model should fly the White Ensign, and never fly a Jack.

Except, sometimes there are exceptions... On joining my first ship, I bought an impressive but disconcerting photo of the Daring class destroyer HMS Dainty (D-108), taken two years earlier in the West Indies by a Royal Navy photographer on February 11, 1966. Unfortunately, this can't be shared in print due to copyright issues, so you'll have to make do with a sketch by an artistic seagull which happened to be passing at the time! It wasn't, however, until 30 years later, by flying low

around every Caribbean island (on Google Earth), and trawling internet records, I learnt why *Dainty* inexplicably wore the Union Jack at sea that day. I'd always known there had to be an explanation, as no captain would risk keelhauling, flogging around the fleet and then hanging from his own yardarm (the mandatory penalty for flag abuse) just for a photo-op! The clues? Broadside sun, horizontal gun shadows, camera height, clean paint (shiny funnel top!), scruffy sailors locked below, and that volcano, finally placed her a mile east of Grenada, steaming southwards in the early morning – and guess what? The Queen visited St George's at about 11:00 on February 11, 1969, so, as Guardship, *Dainty* escorted *Britannia*, and she was all dressed up and showing off. In the background of this photograph is Grenville Bay and the houses of Dunfermline, while seven miles away is pointy Mount St Catherine.

I have, however, yet to solve another perplexing mystery evident in one of my own photographs [which we can therefore illustrate here, Ed]; why is *Dainty* not flying the Jack? The sun is high, the ship is out of the water, so definitely not underway, and she is certainly 'in commission'. Special rules when 'in dockyard hands', perhaps? Can anyone reading explain?

Incidentally, don't forget that US warships also fly the Union Jack in harbor (different Union, different design, different spelling of harbour!)

Just to clarify, Garry Mitchell's correction: the top diagonal white stripe of the Union Jack should be uppermost, next to the flagstaff – 'left' depends which way the flag is facing. (check out a red ensign)

Flying a national flag upside down is a recognized distress signal. When pirates captured a tall ship's crow's nest on Polzeath beach for photos [one of which is illustrated here, Ed], and I briefly flew it that way (though it's not obvious with this flag!), it was spotted from a mile away by an eagle-eyed ex-Girl Guide leader, who stomped over the beach to rescue the crew (well, really to tell me off!). N.B. The Jolly Roger flown over the Jack shows the ship has been captured – it all has meaning!

Ever since Nelson ordered all his ships at Trafalgar to fly the White Ensign, to avoid confusion, all Royal Navy ships – and only Royal Navy ships – fly that. The Blue Ensign was reserved for royal, government and colonial official ships, while all British-owned merchant ships may (and should) fly the Red Ensign.

Regarding my initial point: it is good communication and discipline that makes armed forces so powerful. A small example of that was shown when *Dainty* diverted to Antigua in 1968 to quell riots. Arriving (too late) just after the elections, a parade was arranged, and 40 smart sailors marched, with (sharp, not shiny) bayonets fixed, through St. Johns. The contrast between a body of identically dressed sailors, who could be seen to act together on command (communication!), and the laid-back, shanty-town ambience of the Caribbean town was dramatic. The ship was anchored a mile off, looking massively powerful, and the guns were real, but the psychological effect came from the knowledge that the men and ship under constant control.

Flag codes are fiendishly complicated, and vary with time, but please do get the main ones right, or the models will look so wrong to anyone who has been to sea!

On a related subject, where nautical jargon is appropriate, please encourage contributors to employ it correctly! The language is rich with nautical words and phrases but there are far fewer people now who have connections with ships and shipping than there were half a century ago. So, let's keep the common nautical words alive and in use, at least in this

magazine, and get the more obscure terms properly explained. It is rather irritating when people talk about floors and upstairs, front and back, when deck, aloft, bow and stern are well known terms. As a greasy mechanic, I used to wind up the posh 'fish-head' officers in my submarine by referring to the 'blunt end' and the 'pointy end'; they were even more upset when they finally twigged the 'pointy end' is the stern of a submarine!

I now find myself looking forward to my copy of *Model Boats* more than I have for a few years; so, you seem to be doing it right.

**MIKE PURSER
EMAIL**

*Thanks so much for your fascinating letter, photos and sketch, Mike – and, wow, that was one very talented seagull! I am now waiting with real interest to see if anyone can solve the *Dainty* 'dry dock' (hope I have used the correct terminology here, but as you know I am still on a huge learning curve) mystery. Ed*

UNION FLAG

Further to previous letters on these pages, I would just like to add that the Union flag should be fitted so that the wide white band should be on the top, adjacent to the flag staff, no matter from which side it is viewed. On Olya Batchvarov's model it was not the wrong way around but upside down. When I was in the boy scouts, a couple of years ago (cough, cough), I was told that when it was flown upside down this was a distress signal.

**COLIN DISLEY
EMAIL**

Thank you for flagging up this very helpful 'be prepared' info! Time to dig that old uniform out, I think, as not only have earned another merit badge but now that summer is finally here those shorts may prove perfect to keep you nice and cool pondside! Ed



When taken as prize by 'pirates', the crew of this crow's nest at Polzeath flew the Jack inverted as distress signal. This was spotted by eagle-eyed ex-Girl leader from half a mile away, resulting in her rocking up to effect a rescue/remonstration!

CAN YOU HELP?

TITANIC PART WORK S.O.S.

I have a special request and hoping someone can help me. I purchased what I thought was the complete series of Hachette's 'Build the Titanic' part work series from another gentleman a few months ago but I have only just noticed that I am missing Issue No.13 and have not been able to find a copy anywhere. I am, therefore, hoping that someone may have a copy of this issue that he/she would be prepared to sell.

**PINO BRAMBILLA
EMAIL**

KINGSTON MOULDINGS PLAN SOUGHT

I am after a set of plans for Kingston Mouldings' Lloydsman Salvage Tug and am hoping perhaps one of my fellow *Model Boats* readers can help. If anyone can help here, I'd be happy to pay a small fee or cover the postal costs.

**JOHN PATTINSON
EMAIL**

If anyone can assist Pino or John, please email me for contact details. Ed

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**



ABOVE: The model Richard bought and promptly sank, then fully refurbished and finished as a World War I Royal Navy Joffre.



FOR EVERY PROBLEM...

As an aside to my feature length contributions, I am submitting photos of a couple of models now in my collection and their back stories for inclusion in the Your Models section.

The first holds a very special place in my affections because of the very valuable lesson it taught me. I purchased it second hand but built by a modeller who confessed up front that it was his first ever model build and that there were one or two things that could have been done better. As I really liked the look of it, though, I decided that whatever the issues were I could sort them out.

Fast forward and during its first test run on the pond it sank, for reasons that I'd not taken the time to identify first! Very luckily, I was able to recover it, albeit with a few bits and pieces missing.

Consequently, I felt a complete refurbishment was in order. A little research identified that the tug had served with the Royal Navy during World War 1, so I decided on a conversion to commandeered RN colours. Firstly, an all over Sea Grey was painted on, then a weathering finish was applied. Following this, I replaced the boats with Quayscraft resin items, fitted some scratch built parts to replace the lost ones, added some Royal Navy figures to the flying bridge and the masts were rigged.





The splendid 1:24 scale Thorneycroft 55 ft Coastal Motor Boat constructed by the late Keith Heyes (former member of the Kirklees Model Boat Club), which Richard has now made considerably more to scale operationally with the fitting of a 12v battery of AA cells.



Nowadays I really enjoy both sailing this model and being able to identify it as a Joffre in RN service whenever asked: "What is that?".

The second is based on a plan those of you with a really good memory may remember as having featured back in the April 2008 edition of *Marine Modelling International* for a 1:24 scale Thorneycroft 55 ft Coastal Motor Boat (CMB). Keith Heyes of the Kirklees Model

Boat club, who was a prolific and extremely competent model boat builder, constructed his CMB model exactly according to this plan. Sadly, Keith passed away a few years ago and, as I wanted to ensure that not all his models left the club, I purchased a couple of them to continue showing at events in Keith's memory. He had fitted his CMB with a 380 motor and a 9.6 v battery, which never really seemed to get the boat up onto the plane and convincingly give the appearance of the 41 knots the prototype had been capable of. The only options were more volts or a bigger motor. I decided to leave the motor alone and asked the Component Shop to put together a 12v battery of AA cells. The CMB now looks considerably more to scale operationally and gets up onto the plane much more credibly.

**RICHARD SIMPSON
EMAIL**

Thanks, Richard. I am sure John Milesen, whose first feature (see pages S.L. Scrapwood on pages 26-31) appeared in last month's issue will be relieved to learn that even seasoned model boat builders will admit to having had a boat sink on them! Ed





LEFT: This Harbourmaster Launch Pilot 40 was built from a plan published in *Model Boats* in the early 1980s. John enlarged the plans to a scale of 1-inch to 1ft and scratch built a 40-inch model. Having completed the model in 2019, *Solent Galaxy* was finally launched, nearly 40 years later!

RIGHT: John and his son at Eastrop Park in Basingstoke, 2020, with the model ready to run.



ABOVE: The *Solent Galaxy* on the water. RIGHT: John's most recent build, *HMS Glamorgan*, a County Class destroyer launched in 1962 and which saw action in the Falklands War. He began work on this model in December 2019 and unbeknown to him it was to become his Covid-19 lockdown project during 2020/21. BELOW: Scratch built to a scale of 1:96, *HMS Glamorgan* was based on FleetScale Plans and is fitted with a sound system of guns firing, horns, hooters, etc. She's seen here being sailed in Eastrop Park on July 12, 2020.



MODEL BOAT MAGIC

I started modelling in the 1940s, have been a long-term subscriber to the magazine and, while much has changed in the world, the magic of model boating continues to this day.

I have over the years been inspired by many of the articles published and of late by the photos and details submitted by fellow readers in the

Your Model section, so I've decided to share some of my own projects, which I hope you will find interesting.

JOHN PARTRIDGE
EMAIL

Thanks so much, John. It's lovely to see from your photos how proud your son obviously is of both you and your incredible work. Ed



ABOVE: Reminiscing back to the 1980s, John has also sent us the Hovercraft SNR6, *Sir Christopher*, based on one of the free plans included in this magazine. John's model flew around the Round Pond in Kensington Gardens, and won him this Certificate of Merit from the Caerphilly Model Ship & Radio-Control Club.



Ken Bedwell's 'go-green' solar-powered Solaris.

SOLARIS

This is Solaris. She was originally built by me about 30 years ago for my eldest son, when he was about six years old. The unique thing about her was that she was only powered by the sun, with her three solar cells located on the decks.

She was only a straight runner then and barely had sufficient power for the single drive motor. She only had one sailing on a local pond as I recall, as when shaded by trees, bushes and other plant life she kept refusing to come to the bank. With no power, the wind would finally change her direction and as she re-emerged into the sunshine off she would go again. We spent quite a while waiting to retrieve her, but she attracted a lot of attention as she was an unusual craft to be sailing at that time. Shortly after that, she was put away in the attic and eventually forgotten about.

Recently, I rediscovered her during a lockdown attic clear-out and decided to renovate and update her for my grandsons.

During the 30-year interval, solar cell technology has evolved considerably; they're a lot more efficient now. The

additional power available allowed me to fit a 2-channel radio control system with a miniature servo for the rudder.

I designed a low voltage speed controller as I wasn't sure if a commercial unit would operate correctly. The circuit board also contains the battery backup charging circuit. The receiver operates on a voltage as low as 3-volts, so no issue with that. When the model is left in the sunshine, she recharges her onboard back up batteries.

Maybe in the future her transmitter batteries could also be recharged with a suitable USB type cable connection.

Today, she seems even more appropriate than ever, with her eco-friendly form of power – something that may hopefully even ignite my grandsons' (and others') interest in this form of technology.

KEN BEDWELL
EMAIL

Ha! You were ahead of your time, Ken. I can't help but think what a fun project this would make when teaching children about harnessing solar power. Ed

22 January 2016 · 👤

Martin late Christmas pressie arrived the other day lol
What a big kid haha



LEFT: The day Martin received his kit; Model Slipway had been very busy prior to Christmas, so his, a gift from his wife and sons, finally arrived on January 20, 2016.

BELOW: Getting ship-shape.



BELOW: Ready for ballasting trials.

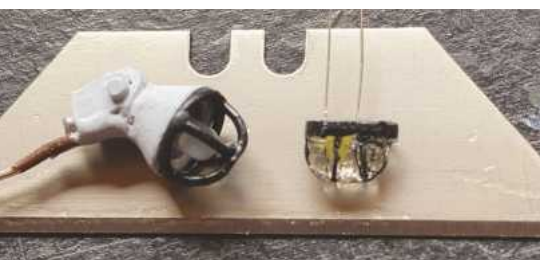


AL KHUBAR

I've been an avid fan of Model Boats since the early '70s and I really enjoy reading about other 'normal' modellers (if there is indeed such a being, ha ha!).

I've been involved with modelling in some form or another for 50 years or so now. My father was a model aircraft enthusiast so, naturally, aircraft it was – until the club he was a member of ran one of the first model offshore races off Canvey Island, Essex: the 'Thames Estuary 300' – an event organised in conjunction with the then fledgling Offshore Model Racing Association (OMRA). With this my love of boats began; my predominant memories centering around going fast with a Webra, OPS or similar such screaming vessel, leaping from the water, being chased by the driver of a ski boat, the smell of fuel and taste of salt, all with a pork pie in hand – oh the memories! Since then, I've tried my hand at most facets of the R/C hobby: aircraft, helicopters, cars, etc, but have always returned to my first love: boats. For most of the time these have taken the form of offshore powerboats, and I've not only been a member of OMRA but for two years held the position of Treasurer. Unfortunately, as they say, all good things must come to an end and the rising cost of fuel for travel, together with a young family to support, made it impossible for me to continue.

In 1996, during one of the many visits my father and I made to the Model Engineering Exhibition, we came across the Model Slipway stand, and the Bonny Kelly caught my eye. Unfortunately, I didn't have the money to buy one of these kits at the time and by the



The lights ready for installation.

time I did production of this particular kit had already ceased. In 1996 I was still quite heavily involved with offshore, so a Model Slipway kit was an interest rather than being a serious goal, until, that is, I stopped offshore some ten years later. It then took a further ten years before I could acquire one (well, it was a Christmas present from my wife and, by this time working, children), at which point, into my life came the *Al Khubar*, a 785mm (31-inch) twin screw harbour tug.

From initially opening the box, the build took me five years, all bar three weeks. Because of work and family commitments, I was only able to do a bit here and a bit there. I would also probably have finished this project a whole lot quicker had I not added my own embellishments, such as working lights, crew, oil barrels, etc. The lights are all LEDs and, because I wanted to keep things as accurate to the kit as possible, I had to cast the bulkhead lights from glass clear resin with the LEDs embedded. The spotlights were kit supplied items, drilled out to take the LEDs and with cadges made to cover the lenses. I also added internal bridge lights, mast lighting and navigation lights. At one point, I drilled out a spotlight, inserted a trimmed flat 10mm LED and then once all was assembled tied it one final time with a straight 12v... Phoo! Bye bye, LED – no more working spotlight! I thoroughly enjoyed every moment of the build, though, even the frustrating ones.



She finally had her sea trials at Southchurch Lake in Southend on Sea this May, and I am very pleased with her – so much so that I've a Model Slipway Aziz now waiting to be built.

I was saddened to hear of Model Slipways' closure last year, particularly after speaking with Jackie to find out it was due to ill health and so felt heartbroken to learn of her passing away. I have only spoken to Lawrie once and that was in 1996 at the ME Show, as during normal business hours Jackie was the first point of contact and was always so pleasant and helpful, even when the questions were a bit basic. I would like to pass on my sincere condolences to Lawrie and thank them both



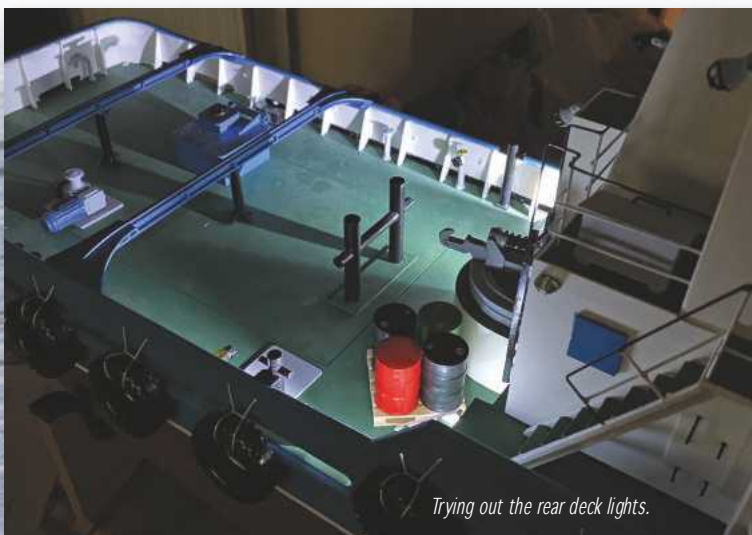
for their huge contribution to modelling, and to my own personal enjoyment of it.

I am sending you a couple of pictures from the build and some of the result.

MARTIN GOLDER
EMAIL

All that extra work really paid off, Martin. You've done a fantastic job! Ed

BELOW: Al Khubar during her first sea trials.





also present on German ponds! For readers interesting in seeing more, some video footage has been uploaded on YouTube. Just key <https://youtu.be/c4OMgcrsu4g> into your browser.

CHRIS LADEL
EMAIL

*What a superb job you've made of creating such a convincing working combo. Thanks for sharing the link to the online footage, too – great fun! **Ed***

*No doubt delighting his fellow model enthusiasts in Germany, Chris Ladel's charming and at the same time super-convincingly realistic working models of *Ilda* and the *Rusty Can* barge.*

ILDA AND THE RUSTY CAN

I thought I would share some photographs of my Bantam Tug. Inspired, or perhaps more appropriately, infected by Phil Parker's article in the Winter 2016 edition of Model Boats on the Bantam Tug *Bantam 1* and some additional information from the web, I began to think about building one of these vessels myself. I then found a video of *Ilda*, entitled 'Tug *Ilda* messing about Ricky Festival' and decided to build *Ilda* based on the kit as described by Phil.

Since I thought that *Ilda* could not be alone on the pond, I also built *Rusty Can*, a barge filled with some load. A Bantam is, therefore,



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In our September issue, on sale from August 20, 2021, be sure not to miss...



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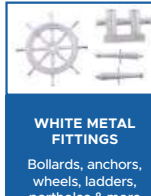
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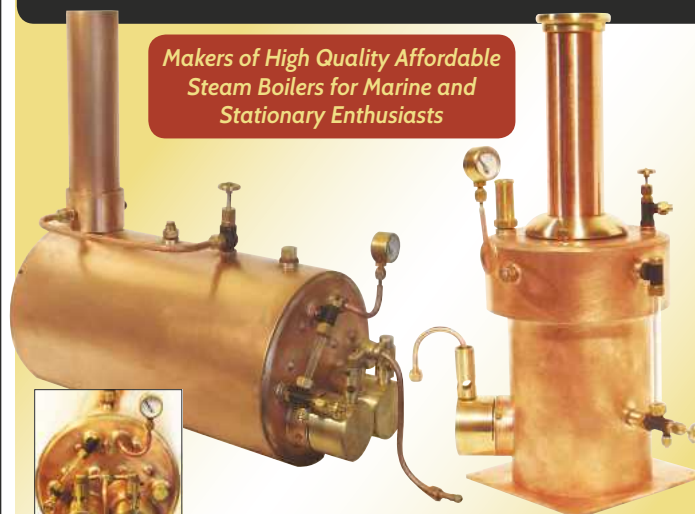
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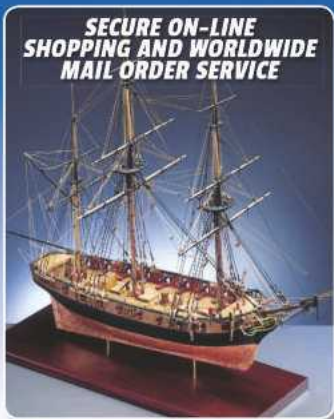
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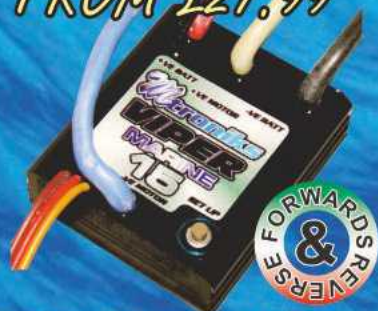


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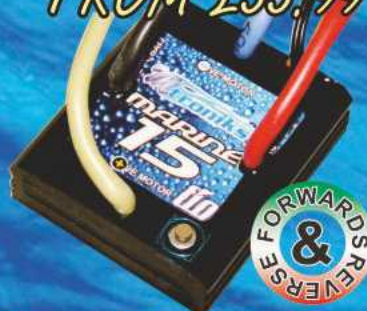
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100% waterproof for trouble free modelling!
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Waterproof, 12V, amplified sound module for model boats that require realistic sound with engine start/stop, horn and changing running sound.
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24 Month Warranty on all Mtroniks electronic products



Mtroniks marine products are available from all good model shops, we are always available for advice direct

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