

WIN!

WARSHIP
2022



**A COPY OF THIS
YEAR'S ANNUAL**

**No.1 For
Sail & Scale**

June 2022
Vol.72 No.859

model Boats



EMPRESS OF CANADA

The first instalment of
a three-part guide to
building this classic beauty



KEIL KRAFT'S LITTLE EEZEBILTS

A nostalgic look back
at the trio of kits designed
with the novice in mind



SMALL-SCALE SAIL

The tricky art of sizing down
'sea-worthy' square riggers

GET ON BOARD

www.modelboats.co.uk



£6.20

MORTONS



THE LARSEN AQUA AIRCAR

The challenge of making a flawed 1:1
concept actually work in model form

PLUS Controlling two shafts, *USS Roosevelt*,
Oberons Down Under, and lots more...



Superglue Kit

Three grades of Sylmasta Superglue for fast, precision bonds

Thin - for bonding fine gaps and hairline cracks

Medium - for general purpose bonding

Thick - for gap-filling and vertical bonding

Plus 4x Superfine Application Nozzles

For an instant bond, use Activator

Superglue Kit - £21.22

Superglue Kit - £25.98
+ Activator 50ml

Casting Kit

Everything you need to make highly detailed reusable moulds to produce professional quality resin casts

Casting Kit - £42.30

400g Casting Resin and 450g Moulding Rubber

Casting Kit XL - £62.75

2kg Casting Resin and 1kg Moulding Rubber

Double the materials for only £20.45 more

Both Kits include Release Agent, Mixing Cups, Pipettes, Stirrers, Gloves and easy-to-follow instructions



Swann-Morton® Spring Sale

Swann-Morton are world leaders in the manufacture of precision blades, handles, scalpels and types of craft knife.

Grab a bargain whilst stocks last with up to 70% off all remaining products in the Swann-Morton range

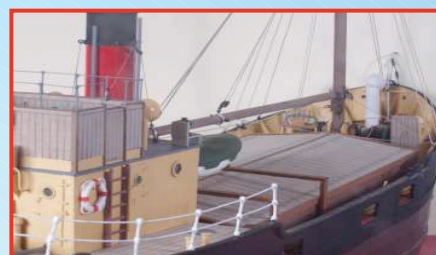


No.3 Range - No.4 Range - ACM Range - Fine Range

**Order today at SylCreate.com or
over the phone on +44(0)1444 831459**

www.mobilemarinemodels.com

WW2 66 foot VIC Coaster (Puffer) ...



Choice of 3 Superstructures ..or.. Build ALL Three ...from the same plan / kit & Sail a Different Boat Every Sunday !!



available as FULL Kit or the Budget Building System

Full Kits include Electric Lights / Precision Motor(s) & FELLINI Fittings

Tugging Ahead

.. with

Phone - Visit our Website

Full Colour Catalogue £6

Factory Visitors Welcome

MOBILE MARINE MODELS

Model Tugology

..

.. the driving force



The Boat Shed, Highcliffe Park, Ingham Cliff, Lincoln LN1 2YQ tel: **01522 730731 / 689209**



DEANS MARINE
CONQUEST DROVE, FARCET.
PETERBOROUGH, PE7 3DH
01733 244166
www.deansmarine.co.uk

2022 colour catalogues
Deans Marine £6.75
Raboesch £4.00
RB Fittings £2.00
Deluxe adhesives £3.50
Albion alloys £1.50
£4.00 postage each
Or all 5 for £13.50 incl p&p u k

Visit the NEW OUTLET CENTRE and SHOWROOM or our ONLINE SHOP FOR KITS & ACCESSORIES
The only model boat shop, showroom, and a test pond.

LATEST RELEASE



45ft Admirals barge 1/15 scale 901mm x 220mm

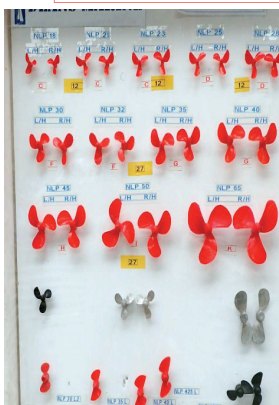
A selection of ACCESSORIES see our website for details



OUTLET CENTRE NOW OPEN Mon—Sat 10am—4pm



ELCO P T BOAT 1/24 Scale



NYLON PROPELLERS



RUDDERS

EDITORIAL

Editor: Lindsey Amrani

Designer: Richard Dyer

Illustrator: Grahame Chambers

Retouching Manager: Brian Vickers

Ad Production: Nik Harber

Publisher: Steve O'Hara

By post: Model Boats, Mortons Media Group, Media Centre, Morton Way, Horncastle, Lincs LN9 6JR
Tel: 01507 529589 Fax: 01507 371066
Email: editor@modelboats.co.uk

CUSTOMER SERVICES

General Queries & Back Issues
01507 529529 – Monday-Friday: 8.30am-5pm
Answerphone 24hr
help@classicmagazines.co.uk
www.classicmagazines.co.uk

Archive enquiries: Jane Skyman
01507 529423 jskyman@mortons.co.uk

ADVERTISING

Advertising Sales Executive: Angela Price
aprice@mortons.co.uk Tel: 01507 529411

By post: Model Boats Advertising,
Mortons Media Group, Media Centre, Morton Way,
Horncastle, Lincs LN9 6JR

PUBLISHING

Sales and Distribution Manager: Carl Smith

Marketing Manager: Charlotte Park

Commercial Director: Nigel Hole

Publishing Director: Dan Savage

Published by: Mortons Media Group Ltd,
Media Centre, Morton Way, Horncastle,
Lincs LN9 6JR

SUBSCRIPTIONS

Tel: 01507 529529 – Mon-Fri: 8.30am-5pm
Enquiries: subscriptions@mortons.co.uk

PRINT AND DISTRIBUTIONS

Printed by: William Gibbons & Son, Wolverhampton
Distribution by: Marketforce (UK) Ltd, 3rd Floor,
161 Marsh Wall, London, E14 9AP 0203 787 9001

© Mortons Media Group 2022
All rights reserved ISSN 0140-2910

The Publisher's written consent must be obtained before any part of this publication may be reproduced in any form whatsoever, including photocopies, and information retrieval systems. All reasonable care is taken in the preparation of the magazine contents, but the publishers cannot be held legally responsible for errors in the contents of this magazine or for any loss however arising from such errors, including loss resulting from negligence of our staff. Reliance placed upon the contents of this magazine is at reader's own risk.

Model Boats, ISSN 0140 - 2910, is published monthly by Mortons Media Group, Media Centre, Morton Way, Horncastle, Lincs LN9 6JR UK. The US annual subscription price is \$9USD. Airfreight and mailing in the USA by agent named WN Shipping USA, 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA. Periodicals postage paid at Brooklyn, NY 11256. US Postmaster: Send address changes to Model Boats, WN Shipping USA, 156-15, 146th Avenue, 2nd Floor, Jamaica, NY 11434, USA. Subscription records are maintained at DSB.net Ltd, 3 Queensbridge, The Lakes, Northampton, NN4 5DT. Air Business Ltd is acting as our mailing agent.



When you have finished with this magazine please recycle it.

contents

10 Compass 360

Latest hobby & industry news, plus your chance to WIN a copy of Warship 2022

14 The Larsen Aqua Aircar

Ashley Needham takes on the challenge of making this flawed 1:1 scale concept vessel actually work in model form



22 Empress of Canada – Part 1

Roy Cheers begins a three part series detailing how he skilfully scratch-built this classic transatlantic liner



28 Small-scale sail

Neville Wade explains the tricky art of sizing down square riggers

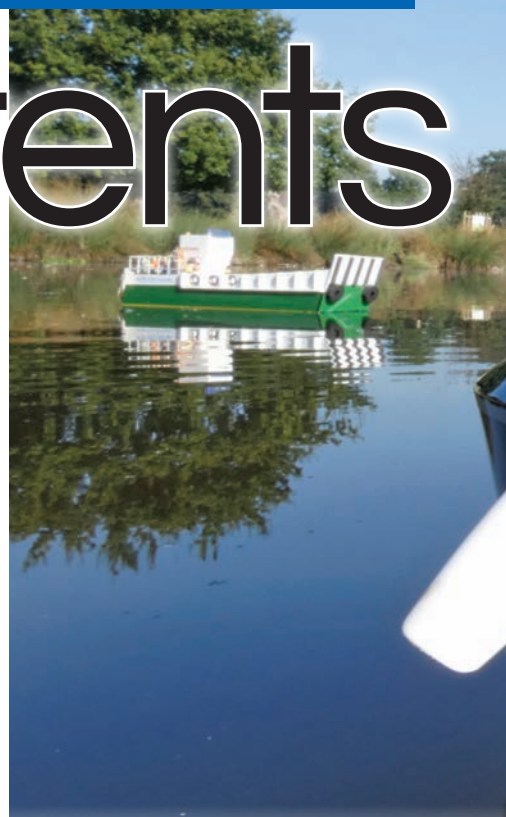


36 Keil Kraft's little EeZebits

Dave Wiggins takes a nostalgic look back at the trio of kits in KK's range that were actually designed with the novice in mind

40 Oberons Down Under

John Parker recounts the success of this submarine class in the Royal Australian Navy and also delves into some interesting opportunities for scale modellers



46 Controlling two shafts

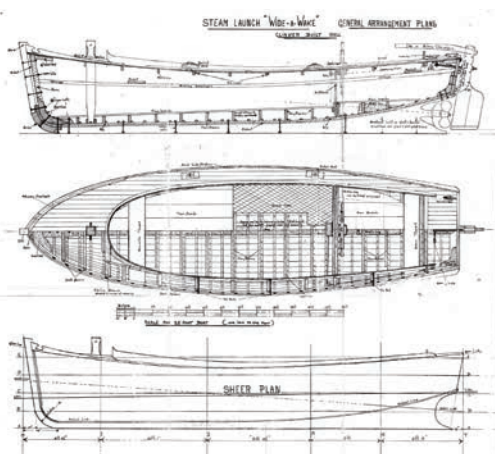
Richard Simpson examines the options worth considering





52 LCT 7074 – Part 2

Francis Macnaughton completes his step-by-step guide to building a 1:72 scale model of this unexpected Operation Overlord survivor from the free pull-out plan included in last month's issue...



58 Boiler Room

Richard Simpson begins the first of four instalments documenting a recent build in which he's been able to test out some innovative and exciting new equipment...



64 Your Models

From honouring family history to the realms of sheer fantasy... Prepare to be wowed by the work of your fellow readers!

69 Your Letters

Views aired and info shared

71 Next month...

Just three of the numerous reasons you won't want to miss the July issue!

With spring finally here, summer hopefully hot on its heels, and more and more events back on the agenda, it now really feels like we're starting to see a return to the 'normality' that pre-pandemic most of us so took for granted. So, if you're involved in organising a show/open day/community gathering/etc, please keep us posted and we'll happily share details either in the mag (for which we'll need notification at least a month beforehand) and/or on social media.

Likewise, if you're celebrating our newfound freedom by attending one of these hobby-related days out, or even simply just enjoying pushing the boat out once again with pals at your local club/pond/lake, please take your camera/smart phone along and send us some photos for inclusion in the Your Models/Your Letters section of a future issue.

Equally, please keep your comments about the content, current direction/style/tone/etc of the mag, coming, as we're very much of the opinion that all feedback, whether positive or negative, is worth its weight in gold.

Finally, a quick explanation for anyone keen to take advantage of our latest subs offer (see pages 38/39) or to renew an existing subscription but perhaps a little confused by the fact that transactions are still being processed by MyTimeMedia: this is simply because all subscriber data is currently in the process of being migrated across to Mortons' own well-oiled system. Transfer will be fully complete by early June, but in the meantime you can subscribe or renew in complete confidence, as we can assure you no one will be left behind.

Well, it's now clearly time for me to cast off my lines again, so enjoy your read!

Lindsey

Scale 1:48
Length 992mm
Beam 174mm
Displ. approx 4.8kg

1960s Dutch Coaster CASPAR



This attractive model is a representation of a 512ton general cargo motor vessel built in the Netherlands in the early 1960s. There have been many vessels built to this basic design so you can invent your own colour scheme.



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

Price £320

MOUNTFLEET MODELS

Adam Slater • Rock House • Bankwood Road • Womersley • Doncaster • DN6 9AX

www.mountfleetmodels.co.uk

Tel: 01977 620386 • E-Mail: sales@mountfleetmodels.co.uk



Buy on-line or
phone/post
your order

DAVE METCALF BOAT MODELS

Manufacturers of scale model boat kits

'LIVERPOOL' Class 35ft 6ins. Twin Screw Motor Lifeboat

Model Scale = 1" to 1ft. (1:12)

Length O.A. = 38" (990mm)

Beam = 11.1/2" (290mm)

This kit is an exact scale model of a twin screw LIVERPOOL class lifeboat of the 1940's to 1960's. Developed from the original yard drawings, this kit is extremely highly prefabricated, using only the best quality materials. Making for a model that can be built using just hand tools and finished to museum quality by the average modeler.

This comprehensive kit contains the following parts:

5 Detailed white GRP mouldings for Hull, Bow & Stern Turtle-backs, Deckhouse & detailed Deckhouse interior bulkhead/floor.

2 Sheets of 'non-burn' laser-etched/cut plywood for main planked decks & all other planked bulkheads etc.

10 accurately cut CNC sheets of Birch ply and HIP's for all other parts.

Over 470 superbly cast white metal fittings, all made from our brass masters.

Pair prop shaft & props, dowel & strip woods, chain & fittings for handrails brass rod, wire, tube, rigging cords etc.

A very comprehensively illustrated step-by-step instruction manual with many construction illustrations. 3 Large sheets of scale GA drawings all are number "keyed" to parts list.

Optional photo DVD of high-definition pictures of model during construction and finished model. This museum standard model is suitable for either static or R/C use, on the water performance is realistic.

e-mail, phone or SAE for information pack.

UK. P & P £10.00. Highlands, Islands and overseas on request.

Collections can be made by prior appointment.

1 Wentworth Cottages, Haultwick, Dane End,
Nr. Ware, Herts. SG11 1JG

Tel: 01920 438373

davemetcalfboatmodels@btinternet.com

£540.00
+ P & P



Also available RNLB Ann Letitia Russell Lifeboat @ £495.00. Moonbeam yacht @ £340.00



SECURE ONLINE
ORDERING

www.sarikhobbies.com

PLANS / MOULDINGS / WOODPACKS / TOOLS / ACCESSORIES / DVDs / BOOKS

The World's biggest selection of Radio Controlled Aircraft, Boat & Model Engineering plans & parts



Be the first to hear about our special offers
Sign up to our newsletter or follow us on Facebook



Model Aircraft & Boat books
and DVDs also available!



Many RC & Static
Kits now available

sarik hobbies

The store for the model builder

**FREE UK
DELIVERY**
on orders
over £150

**FREE EU*
DELIVERY**
on orders
over £250

**MODEL
BOAT
BUILDER**
Find us on Facebook

INCLUDES PLAN & FG OR ABS HULL
(THEY ARE ALSO AVAILABLE INDIVIDUALLY)

Baikal SETMM1331 **£39.50**
Bluebird Of Chelsea SETBM1449 **£47.50**
Brave Borderer FG SETMM609 **£81.00**
Breeze (Pilot Cutter) FG DASET006 **£138.50**
Burutu & Bajima Tug SETMM1339 **£49.50**
Celia May Steam Launch SETMM1429 **£46.00**
Cormorant V112 SETV112 **£39.50**
Egret Tug SETMM1417 **£57.50**
Forceful Tug SETMM1292&3 **£49.00**
Galway Hooker FG SETSH2022B **£134.00**
Grand Banks Schooner SETMM962 **£99.00**
Guardsman ABS SETMM1330 **£37.00**
Harbour Defence Motor Launch SETMM1356 **£48.00**
HMS Embling SETMM2055 **£65.00**
Ibex (Brixham Trawler) FG DASET004 **£132.50**
Katie (Gaff Rig Pilot Cutter) DASET001 **£112.00**
Keenoma Tug SETMM1322 **£47.00**
Lady Ma FG DASET002 **£65.00**
Liverpool Lifeboat SETMM1448 **£106.00**
Manx Nobby DASET005 **£142.50**
Marguerite FG DASET008 **£129.50**
Moorcock 1:24 FG SETSH2023B **£160.00**
Paddle Tug Lulonga SETMM1465 **£55.00**
Pilot 40 SETMM1444 **£51.00**
Pilot Cutter 'Hilda 2' FG DASET003 **£148.00**
Revive Static Sail SETMM1275 **£104.00**
Shirley Ann SETMM1422 **£46.50**
Smit Nederland Tug SETMM1409 **£39.50**
St Cervia Thames Tug SETMM567 **£99.00**
St Louis Belle Paddle Ship SETMM826 **£89.50**
Submersible Submarine SETBM1426 **£32.00**
Thames River Tug Plaudit SETMM1453 **£56.50**
Topsail Schooner SETMM909 **£93.00**
Tyne Lifeboat SETMM1390 **£51.00**
Victoria Steam Launch SETMM1368 **£39.50**



BREEZE BRISTOL CHANNEL PILOT CUTTER

By David Alderton, Breeze is a
nippy performance under sail.

Plan DAP006 **£15.50**
Hull DAH006 **£131.50**

Plan & Hull Set DASET006 **£138.50**



1000s OF MODEL PLAN DESIGNS

EXTENSIVE RANGE of model boat plans to keep any builder busy

Scale Boats & Ships
Sailing Boats & Yachts
Easy to Build Boats
Engineering
Competition Boats
Hovercrafts

Hydroplanes
Straight Runners
Submarines
Unconventional
X-List Plans



BALSA, PLY &
SPRUCE

INCLUDES PLAN & WOOD PACKS WHERE AVAILABLE
(THEY ARE ALSO AVAILABLE INDIVIDUALLY)

Barb's Boat SET3550 **£89.00**
Choupette SET2560 **£92.00**
Etoile Jet Bike! SET2324 **£85.00**
Fairry Huntress 23 SETMB2131 **£64.00**
Higgins Hellcat Torpedo Boat SETMM2056 **£78.00**
HMS Crane SET3524 **£40.00**
HMS Embling SETMM2055 **£65.00**
HMS Temerity SETMM2094 **£75.00**
Mariner US 80' Tow Boat SET3532 **£71.00**
Meteor SET2407 **£41.00**
Nimbus Mk3 SET3133 **£51.50**
Pilot Boat SET3062 **£68.00**
Riva Aquarama 1:12 SET2552/LG **£54.50**
Riva Aquarama 1:24 SET2552/SM **£30.00**
SG&K 22" Gentlemen's Runabout SET3509 **£65.00**
SS Noggusund Steamship SETMM2057 **£43.00**
Star Baby SET3295 **£78.00**
Strathclyde 70 Wee Nip SET2966 **£64.00**
SV Sunbeam Solar Ferry SETMB2141 **£69.00**
Thames Lighter SET3552 **£38.50**
UTE Workboat SETMM2079UTE **£59.00**
Thames Barge Veronica SET3584 **£99.00**
Tid Tug (T.J.D. Class Tug) SET2447 **£59.00**
USS Bodega Bay SETMAGM2010 **£125.00**
Vosper MTB SETMM2062 **£74.00**
Vosper MTB379 SET3505 **£92.00**
Wild Duck SETMM2127 **£89.00**



THAMES BARGE VERONICA

Iconic sailing boat that plied its trade in &
around the River Thames & Medway.

Plan MAR3584 **£41.00**
Building Veronica DVD DV3513 **£7.50**
Laser Cut Wood Pack WP3584 **£52.00**
Short Kit (Set) SET3584 **£99.00**



SG&K 22' GENTLEMEN'S RUNABOUT

Attractive runabout designed for river use
hence the flat bottom to reduce wake

Plan MAR3509 **£19.00**
Laser Cut Wood Pack WP3509 **£48.00**
Short Kit SET3509 **£65.00**



WHITE METAL FITTINGS

Bollards, anchors,
wheels, ladders,
portholes & more

MODELMAKING TOOLS, ACCESSORIES & SUPPLIES

Screwdrivers, hand files,
sanding blocks, tools & clamps,
epoxy, aerosols & more



info@sarikhobbies.com

01684 311682

*Free EU delivery excludes: Croatia, Cyprus, Denmark, Estonia,
Finland, Greece, Latvia, Lithuania & Malta

All prices exclude P&P/S&H. Prices are subject to change.
Please check current pricing on website or by phone. E&OE.

www.sarikhobbies.com

sarik hobbies

Units 8 - 12, Willow End Park, Blackmore Park Road, Welland, Malvern. WR13 6NN. UK



NEW BRUSHLESS MOTOR!

500-600 SIZE

3250KV - 7.4-11.1V

OUR PRICE

£35.90!

VERY FAST!



HOWES MODELS

01865 848000

Unit 16B Cherwell Business Centre

(Part of Station Field Industrial Estate)

Rowles Way, Kidlington, OX5 1JD

www.howesmodels.co.uk

Fast mail order - Overseas postage at cost

MICROZONE SUPER SPECIAL OFFER!

6 CHANNEL RADIO
RADIO INCLUDES RECEIVER

RRP £59.99

OUR PRICE £39.99!



Additional Receivers Available!

8 CHANNEL RADIO
WITH LCD SCREEN.
RADIO INCLUDES RECEIVER

OUR PRICE £59.99!



Billing Boats

FINALLY BACK IN STOCK!

The very popular Billing Boats wooden boat kits are now back in stock!

Large range to choose from at great price!

PLEASE CHECK OUR WEBSITE FOR RANGE OR CALL US ON 01865 848000 FOR MORE INFORMATION

PRICES FROM £22.99!



Futaba



FUTABA T6L

2.4GHz 6 CHANNEL

RADIO INCLUDES

R3106GF RECEIVER

OUR PRICE

£75.99!

Radio Link T8FB

8 Channel 2.4Ghz

Replacing the popular

T4EU transmitter and

receiver set at a great price

Only £54.99

Additional RX £13.99



POWERPAL PEAK PLUS

Easy to Use Li-PO Charger

1/3/5A Li-PO & NiMH

Just Plug in & Charge!

No Setting Up Required

Our Price Only £24.99!



FUSION NX86 FAST CHARGER

4-8 Cells Ni-CD/Ni-MH, Variable charge rate, 0.5 -5amps. Mains operated, Peak detection.



FOR ONLY £26.99!

SUPER STRENGTH METAL GEARED WATERPROOF SERVOS!

INCLUDE FITTINGS & METAL ARM!

15KG - £9.99

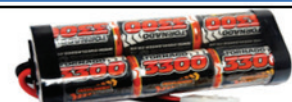
20KG - £13.99

25KG - £14.99

30KG - £17.99

35KG - £24.99

60KG - £29.99



LARGE RANGE OFF HIGH QUALITY

7.2 VOLT BATTERY PACKS

2000MAH - £9.99

2600MAH - £11.99

3000MAH - £13.50

3300MAH - £13.99

3800MAH - £19.99

4000MAH - £22.99

5000MAH - £26.99

Lead Acid Batteries

6 VOLT 1.0 AMP - £4.99

6 VOLT 1.3AMP - £4.99

6 VOLT 3.4 AMP - £6.50

6 VOLT 4.5 AMP - £5.50

6 VOLT 7 AMP - £8.99

6 VOLT 12 AMP - £11.99

12 VOLT 2.3 AMP - £8.99

12 VOLT 3.4 AMP - £12.99

12 VOLT 4.5 AMP - £9.99

12 VOLT 7 AMP - £11.50

6V JELLY CHARGER - £9.99

12V JELLY CHARGER - £9.99

6 - 12V JELLY CHARGER - £11.99



Waterproof

Marine Speed Controllers

NEW RANGE WITH LOW PRICES!

10A 4.8-12v ONLY £25.99

15A 6-12 V ONLY £25.99

15A PLUG N PLAY 6-12v - £25.99

15A 12-24 V ONLY £31.99

20A PLUG N PLAY 6-12v - £29.99

25A 6-12 V ONLY £34.99

25A PLUG N PLAY -12v - £34.99

40A 6-12 V ONLY £44.99

J PERKINS 50AH ESC - £35.99

FUSION AQUAPOWER

280A Only £34.99

BRUSHLESS SPEED CONTROLS

MTRONIKS G2 HYDRA 15A BRUSHLESS

RRP £49.99 - NOW £36.99

MTRONIKS G2 HYDRA 30A BRUSHLESS

RRP £59.99 - NOW £43.99

MTRONIKS G2 HYDRA 50A BRUSHLESS

RRP £84.99 - NOW £62.50

MTRONIKS MICRO SWITCHER - £19.99

NEW 3 CHANNEL RADIO IDEAL FOR MODEL BOATS

2.4Ghz with digital trims. Proportional

channels, 2 on the sticks and 1 dial.

Additional receivers

Only £14.99!



Our Price

Only

£34.99

NEW 2 CHANNEL RADIO!

ABSIMA 2 Channel 2.4GHz Combo

Transmitter & Receiver!

Adjustable Travel Volume

On Rudder Servo

OUR PRICE ONLY

£39.99!



Additional Receivers £14.00!

NEW! Kingmax Sail

Winch Servo's

Dimensions 40x19x38mm

1.5 Turn Standard Size Servo Speed:

0.9/360 Torque: 6.1kg - Only £9.99

2.0 Turn Standard Size Servo Speed:

0.9/360 Torque: 6.1kg - Only £9.99

4.0 Turn Standard Size Servo Speed:

0.9/360 Torque: 6.1kg - Only £9.99

4.0 Turn Standard Size Metal Gears

Speed: 0.9/360 Torque: 12kg - Only £14.99

6.0 Turn Standard Size Servo Speed:

0.9/360 Torque: 6.1kg - Only £9.99

6.0 Turn Standard Size Metal Gears

Speed: 0.9/360 Torque: 12kg - Only £14.99



Standard Size

KING MAX



Li-PO Batteries

at Great Prices

7.4v 1000mah - £11.60

7.4v 1300mah - £12.99

7.4v 1600mah - £14.50

7.4v 2200mah - £14.99

7.4v 3900mah - £29.99

11.1v 1000mah - £15.50

11.1v 1300mah - £16.99

11.1v 1600mah - £19.99

11.1v 2200mah - £17.50

11.1v 3900mah £42.99

11.1v 5000mah - £48.99

SERVO

POWER 3KG STANDARD - £4.99

OR SPECIAL OFFER 2 for £8.00!

AAS-700STD WATERPROOF STD - £7.99

NEW! FUTABA S3000 DIGITAL - £11.99

RADIANT 3.5KG BB WATER RES - £8.99

FUTABA 3010 6.5 TORQUE - £24.99

FUT 3014 WATERPROOF - £24.99

HITEC 325 BALLRACE - £16.50

POWER HD 9g Micro £3.50

OR 4 For £13.50

HOWES MIDI MG Servo £6.50

MICRO METAL GEARED £4.99

MINI SERVO ONLY £4.00 (4 for £15.00)

HIGH POWERED BALLRACE £7.99

RADIANT WATERPROOF Servo £8.99

SAIL ARM, WINCH &

SPECIALIST SERVOS

HITEC 785 HB SAIL WINCH

WITH FULL ROTATION DRUM

OUR SPECIAL PRICE £33.99

HITEC 765BB SAIL ARM

WITH 12 CMLONG ARM

OUR SPECIAL PRICE £33.99

FUTABA HIGH VOLTAGE DIGITAL

S-BUS SERVO SU400 - £25.50

HITEC HS 805BB SAIL ARM HUGE

WITH 20KG TRQ £35.99



NEW LOW PRICES!

NEW DEALS ADDED DAILY ON WEBSITE!

01865 848000 WWW.HOWESMODELS.CO.UK

PLEASE NOTE: PRICES IN OUR ADVERT ARE LIABLE TO CHANGE WITHOUT NOTICE

BRUSHLESS MOTOR DEAL!

Graupner

Fantastic motor to upgrade your 300 to 600 size motors to Brushless!

Includes gold connectors and mounting bracket

RRP £59.99 Our Price just

£14.99!

MTRONIKS Hydra 15A, 30A, 50A Brushless Motor and Speed Controller Combo

Auto set up - Forwards and reverse - 6.0 to 12.0V Operation

Motor Speciation

KV (rpm/v) - 1100 - Power - 120W

Diameter: 28mm - Length: 38mm

Hydra 15A Combo - Only £50.99

Hydra 30A Combo - Only £59.99

Ideal Replacement for 380 - 400 Motors

Hydra 50A Combo - Only £109.99

MTRONIKS TIO LI-PO SAFE ESCS

For use in RC boats that allows for the use of Lipo battery packs as well as the usual NICAD / NiMH / Lead Acid batteries

15A - RRP £39.99 OUR PRICE **£29.99**

30A - RRP £52.99 OUR PRICE **£39.99**

50A - RRP £68.99 OUR PRICE **£51.99**

SUPER SERVO SPECIAL!

HOWES STANDARD SERVO

4KG TORQUE - INCLUDES FITTINGS

SIZE - 40.3 X 19.8 X 38.6MM

ONLY £4.99 EACH!

OR 2 FOR

£8.00!

Receiver & Transmitter Batteries

4.8 VOLT PACKS

1300MAH FLAT OR SQUARE - £6.99

2400MAH FLAT OR SQUARE £8.99

6 VOLT PACKS

1300MAH FLAT OR TRI - £8.99

1600MAH FLAT OR TRI AE CELLS - £10.50

2400MAH FLAT OR TRI - £11.75

9.6 VOLT TRANSMITTER PACKS

1300 MAH FLAT - £15.00

1300 MAH SQUARE - £15.00

2400MAH FLAT £19.99

NEW! AAA RECEIVER PACKS!

4.8V 800MAH FLAT OR SQUARE - £11.99

4.8V 1000MAH FLAT OR SQUARE - £12.99

6V 800MAH FLAT OR TRIANGLE - £13.99

6V 1000MAH FLAT OR TRIANGLE - £14.99

DRAGON FLIGHT 95

Length 950mm Height 1470mm

Perfect model for enthusiasts to easily and affordably get into the hobby!

Available Ready to Run with 2.4GHz radio or ARTR (no radio)

ARTR RRP £309.99

Our Price £289.99

RTR RRP £379.99

Our Price £344.99

THE VERY POPULAR! CARIBBEAN YACHT

IDEAL BEGINNERS YACHT!

YACHT COMES PRE BUILT AND READY TO SAIL! GREAT SIZE FOR EASY TRANSPORTATION.

LENGTH - 260MM - HEIGHT - 435MM INCLUDES RECHARGEABLE BATTERY FOR YACHT



RRP £63.99

Our Price £56.99!

HENG LONG ATLANTIC LARGE SPEED BOAT

READY TO RACE SPEED BOAT!

LENGTH: 71CM!

TOP SPEED 25KPH!

OUR PRICE

ONLY £59.99!



Electric Motors

385 5-POLE £2.99 each

400 3-POLE £6.99

540 3-POLE £3.99

545 5-POLE £3.99

683 5-POLE £4.00

MFA RE 140 (3-6v) £2.75

MFA RE 170 (1.5-3v) £3.75

MFA RE 360 (6-15v) £4.99

MFA 380 (3-7.2v) £5.75

MFA 385 (4.5-15v) £5.75

MFA RE 540 (4.5-15v) 3 POLE £7.50

MFA TORPEDO 800 £23.50

MFA TORPEDO 850 £23.50



SELF RIGHTING!

POWER VENOM RACING BOATS!

GREAT FUN AND YOU CAN RACE TOGETHER! AVAILABLE IN BLACK OR ORANGE

25KM/H! 32CM LENGTH

ONLY £44.99 EACH!

PROPS, SHAFTS ETC

LARGE RANGE OF THE FOLLOWING

BRASS PROPS M4 2/3 BLADE
M4 NYLON PROPS 2/3 BLADE
STAINLESS STEEL SHAFTS M4
BRASS RUDDERS 6 SIZES IN STOCK
NEW LOWER PRICES!



Extension Leads

All For Futaba/Hitec

SERVO LEAD 200mm £1.00

EXTN LEAD 270mm £0.60 each

EXTN LEAD 500mm £0.80 each

EXTN LEAD 1000mm £1.00 each

Y LEAD £1.75 each

BEC RED BOTH ENDS £0.90

SWITCH HARNESS £3.99



FINALLY BACK IN STOCK!

VOLANTEX SR48 SPEED BOAT

VOLANTEX RC

RTR speed boat includes 2.4G radio,

battery & charger!

SELF RIGHTING FEATURE!

42CM LONG!



ALSO AVAILABLE IN BRUSHLESS!

ONLY £109.99!

RRP £54.99

OUR PRICE ONLY £49.99!

CARSON CUX-15 FISHING BOAT

100% READY TO RUN BOAT WITH 2.4GHZ RADIO

INCLUDES BATTERY AND CHARGER!

LENGTH - 580MM

HEIGHT - 380MM

RRP £245.00

OUR PRICE

ONLY £219.99!



WANTED

WE BUY SECOND HAND RADIO CONTROL MODELS

FROM SMALL ITEMS TO COMPLETE COLLECTIONS

CAN BE COLLECTED

PLEASE CALL US ON 01865 848000 AND ASK FOR NICK

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

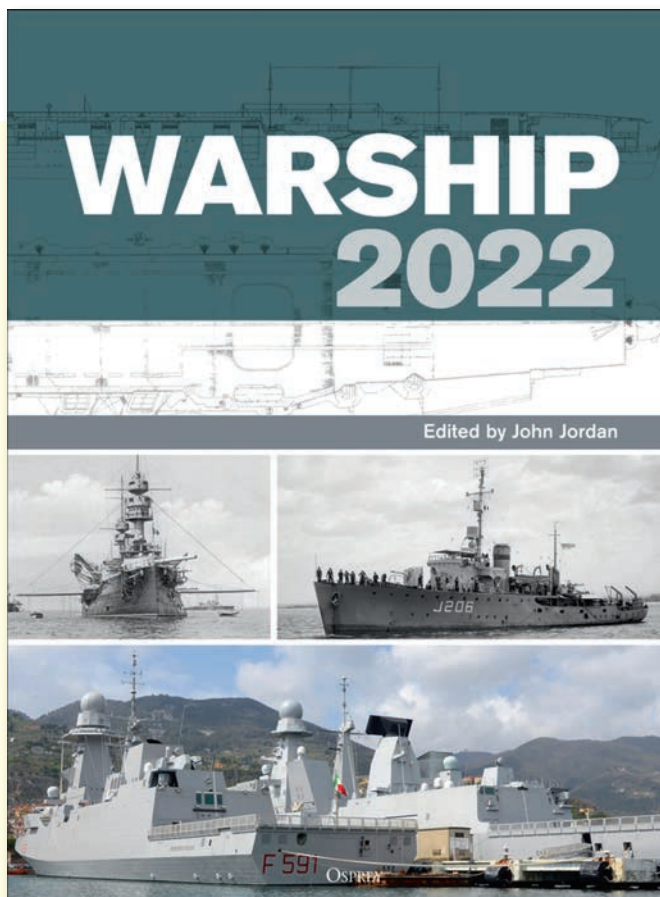
WIN A COPY OF WARSHIP 2022!

This month, courtesy of the kind folks at Osprey Publishing, we're giving you the chance to win the latest edition of this celebrated annual, as reviewed below by model warship aficionado Dave Woolley...

"From a personal perspective, my interest in the Warship annuals began with the quarterly journals of the 1980s and continues to this very day, so I was delighted to be asked to review the 2022 edition.

The current Editor, John Jordan, and the Assistant Editor, Stephen Dent, have kept faith with the basic tenant, which is to give both a broad overview of, and a much more in-depth insight into, various historical events surrounding the naval ambitions of the great and minor powers over the centuries and into our own time. The authoritative contributors, along with the sheer level of research that's clearly been undertaken, continue to make the annual editions of Warship a genuine and reliable source of information for anyone interested in naval history and current development trends.

"Warship 2022 opens with a fascinating study, by Premyslaw Budzbon and Jan Radziemski, of the development of Russian naval power following the Bolshevik revolution and the establishment of the Soviet era, with an emphasis on the Flotilla leader. Interestingly, there are notes with references to the Manchester Guardian report of December 1926 on the deepening collaboration of the Soviet government with the German Reichswehr, along with an explanation of the perceived need for larger, heavier, warships and how these were developed under the heavy hand of the Communist



Edited by John Jordan

party. This state of affairs is also covered by Steve McLaughlin, but from the perspective of how the various organs of the Soviet state that were connected to naval procurement addressed the demand for big gun battleships, particularly the mighty Sovetskii Soyuz. There is one quote that, for me, encapsulates the stillborn development of this class of warship in the Soviet Union: "The government generally came down on industries side, so the navy wound up with ships less capable than it had expected. This, of course, highlighted many of the deficiencies within the

system and industry". Included alongside all of this is a series of excellent plan and profile drawings and a good tabulation on the various design studies. Also drawn to our attention are several innovative directions that the design produced, such as Project 23bis, with its substantial armour protection and twelve mammoth 406mm main armaments.

"And just when you may have thought that all naval activity during World War II has already been exhaustively documented, along comes an incisive probe into Operation Tunnel from Michael Whitby. This focuses on the intrepid

Channel patrols conducted along the French coast between September 1942 to April 1944; the purpose of these missions being to disrupt enemy shipping under cover of darkness between the ports in the western Channel and the Bay of Biscay. These forays were not without casualties, one of which being the tragic loss of the Dido class cruiser HMS Charybdis on the October 22/23, 1943, due, the article implies, to a lack of experience in this type of operation.

"Another richly researched article, by Kathrin Milanovich, deals with the development of the Imperial Japanese Navy's aircraft carriers Soryu and Hiryu, at a time when other navies were all working within the confines of the various international treaties, such as the London Arms Limitation Treaty of 1930. The dilemmas posed for the IJN were trying to support a limit on displacement while having good aircraft stowage and solving stability problems yet maintaining sufficient performance to operate alongside fast cruisers. While the article is supported with various tabulations, there are also several excellent drawings, showing both side elevations, and a useful plan for modellers. Add to that a few new images and we have another interesting perspective on these well-documented aircraft carriers.

"There is also an interesting study by Hans Lengerer on the genesis and influence of the Yokosuka Navy Yard. This deals in part with the machinations around the conflict over the influence being nurtured by both the French and British governments on the Shogunates

BUY THE BOOK

The 2022 Warship annual (ISBN 978 14728 47812), due for release in hardback format on June 17, 2022, will carry an RRP (Recommended Retail Price) of £40. Pre-orders are now being taken at www.ospreypublishing.com or alternatively you can order a copy of the title via your local bookstore.

A FOND FAREWELL

Gwen Adcock

We are sad to report that Gwen (Gwyneth) Adcock sadly passed away on April 8, 2022.

Gwen had a long and significant association with the world of model boating, as friend and fellow enthusiast Jim Worner explains: "In the 1970s, Gwen was – along with

her husband, Stan, and son, Ian – a very active member of the model yacht racing fraternity, well known for her determination and flexible attitude to the rules. The family were early supporters of the 'Model Boats Holidays', initially held in Somerset and subsequently at Primrose

Valley. Ian went on to found Midway Models in Leonards Road, Leicester, where Gwen was always a very hands-on member of the business, extending a warm welcome to the shop's visitors, .profering a mean cup of tea! I am proud to have been numbered among her friends

and would like to send my sincere condolences to both Stan and her son, Ian."

Our thanks to Jim for submitting this tribute to Gwen. No doubt his sentiments will be echoed by all of those within the model boating community who had the pleasure of knowing her. ●

in 1860s' Japan. To solve many of the shortcomings prevalent in Japan's then feudal society, France set up a ship building training school in Yokosuka, which was credited as being the first scientific and technical school in Japan.

"All of the material mentioned so far is core to what makes these annuals must-have additions for the naval buff's bookshelf. Another good example of this in the 2022 edition is the excellent piece on the development of the Scout cruiser in the Italian navy under the title of *Exploratori of the Regia Marina, 1906-1939* – particularly the coverage of naval operations conducted in the Adriatic during World War I between the KUK (Austro-Hungarian Navy) and the Italian navy. It's interesting to view photos of the various scouts – for example, the *Quarto* – as one can't help but see how they were influenced by the Royal Navy scout cruisers of the period. This author then delves into development of this type of warship in the post-World War I period and on into World War II. You can, for example, read all about how the *Navigatori* scouts were redefined as destroyers, while the pre-World War I scout, *Quartro*, went on to see action in the Spanish Civil War (1936-1939) before then being used as a target for Italian shells and underwater weapons in November 1940.

"Although much of the content relates to historical events, new builds and naval developments are by no means overlooked. Conrad Waters takes a close look at European Frigate development. After World War II frigates served either AAW (Anti-Air Warfare) or ASW (Anti-Submarine Warfare) vessels and each nation pursued quite different designs tailored to their ships' designated roles. We are also treated to a glimpse of various new vessels, some

examples being the Norwegian *Fridtjof*, the Danish *Iver Huitfeldt*, the French *Fremm* and the Royal Navy Type 26. All have elements of reduced radar cross section and a degree of flexibility in their operability, which now encompasses the deployment of autonomous and unmanned systems.

"The Australian Bathurst Class Mine Sweeper Corvette is also well documented. Contributor Mark Briggs blends the design, developments and how Australian shipyards decimated during the inter-war years rose to meet the demand for war production, not only providing for the RAN (Royal Australian Navy) but also for the Royal Navy, into his fascinating copy. In all, 60 Bathurst class vessels were built over nine shipyards across Australia. While the Bathurst will remain a wartime legend (although interestingly, one of the crew who served aboard HMAS Latrobe less than enthusiastically recalls: "Living in a corvette was like living in a concrete mixer on a roller coaster"!), the fate of many of the Australian shipyard's mirroring those in the UK have ceased to exist.

"The Editor, John Jordan, has also contributed an article on the C65 Aconit, France's prototype ocean escort. Originally the Aconit design was to be the lead vessel of five anti-submarine escorts, based, in part, on the USN's (United States Navy) experience with the Bronstein and Garcia classes. Once again, there's a useful side elevation and plan to accompany the article, with detailed tabulation. What comes to the fore is the methods employed to detect and defeat a submarine, not just at short range but using a combination of sonar and radar guidance

for the Malafon ASW missile system. There's no doubting the unique forward mounted ASW 305mm mortar system and the eight L5 homing torpedoes. What becomes evident within the article is how well equipped the Aconit was for dealing with the underwater threat.

"Further content includes a detailed appraisal of the French pre-dreadnought battleship

Jaureguiberry, by Philippe Caresse; an in-depth review of post-war radar development in the Royal Navy; the usual book review; warship notes; a series of shorter articles highlighting little known aspects of naval history and the superb Warship gallery, with Aidan Dodson focusing on the scraping of the HMS Agincourt, New Zealand and Princess Royal. ●

HOW TO ENTER...

To be included in our Warship 2022 Prize Draw, all you have to do is complete the form below and pop it in an envelope addressed to:

Warship 2022 Prize Draw
Model Boats
PO Box 99
Morton Way,
Media Centre,
Horncastle
Lincolnshire
LN9 6LZ

TERMS & CONDITIONS

Competition closes June 17, 2022. There are no cash alternatives available. Terms and conditions apply. To view the privacy policy of MMG Ltd (publisher of Model Boats) please visit www.mortons.co.uk/privacy



WARSHIP 2022 PRIZE DRAW

Name: _____

Address: _____

Postcode: _____

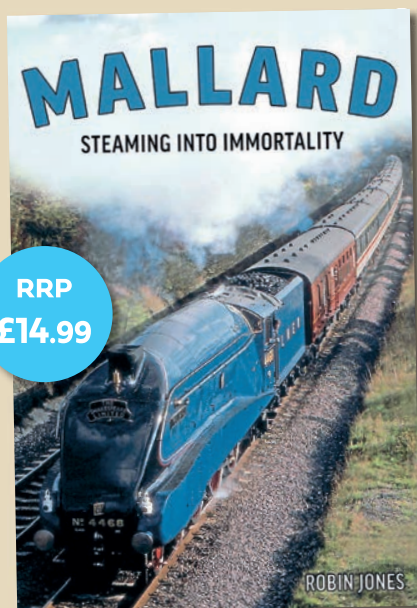
Tel No: _____

Email: _____

Get 20% off a selection of aviation and railway reads from Mortons Books

'FLASH20' for 20% off

Use code 'FLASH20' at the checkout



RRP
£14.99

MALLARD – STEAMING INTO IMMORTALITY



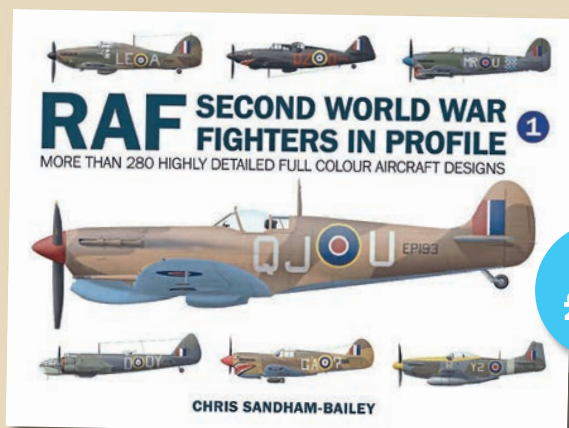
RRP
£35

THE SECRET HORSEPOWER RACE
– WESTERN FRONT FIGHTER
ENGINE DEVELOPMENT



RRP
£9.99

SUPERMARINE SECRET PROJECTS
VOL. 1 – FLYING BOATS

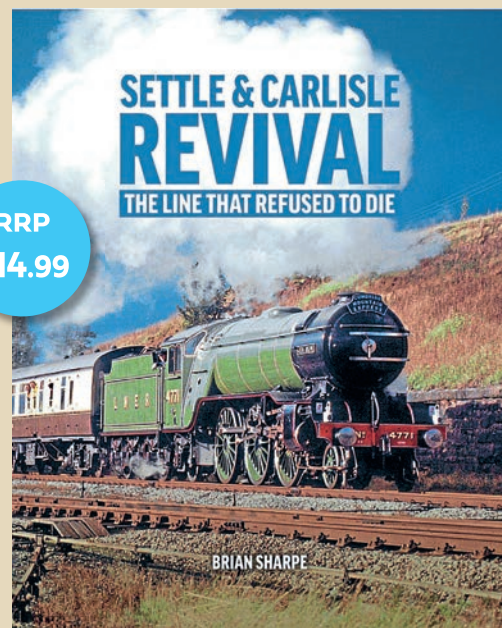


RAF SECOND
WORLD WAR
FIGHTERS
IN PROFILE

RRP
£35

RAF COLD WAR
JET AIRCRAFT
IN PROFILE

RRP
£35



RRP
£14.99

SETTLE & CARLISLE REVIVAL –
THE LINE THAT REFUSED TO DIE

MORTONS
BOOKS

Excludes bookazines

ORDER NOW: www.mortonsbooks.co.uk

Tel: 01507 529529 Offer expires: 31.12.22

OUT AND ABOUT

Moira Canal Festival

Over the weekend of May 21-22, the Moira Canal Festival will be returning (following a two-year hiatus due to the pandemic) to Moira Furnace, Furnace Lane, Moira DE12 6AT Admission, from 10am to 5.30pm each day, will be charged at £6 for adults (which includes free parking and a show programme) and £3 for children.

This aim of this family-friendly event is to raise awareness of, and money for, the restoration, extension and maintenance of the Ashby Canal. As well as all the boats, this year's attractions

will include a fine array of classic cars, entertainment from live bands –including the D-Day Darlings (Britain's Got Talent finalists), falconry displays, Morris dancing, various trade stalls, exhibits, children's entertainment, a bar and refreshments. The organisers have also just received confirmation of a flypast from the Battle of Britain Memorial Flight."

For more details, contact Geoff Pursglove at moiracanalfestival@outlook.com or visit www.moiracanalfestival.co.uk



MOIRA Canal Festival 21 & 22 MAY 2022

The 20th Moira Canal Festival is at the historic Moira Furnace, on the banks of the restored Ashby Canal in North West Leicestershire.

As our contribution to the Queen's Platinum celebrations, we are pleased to welcome...

The D-DAY Darlings Finalists in Britain's Got Talent UK's Premier Wartime Act, recreating the old wartime songs!

A DAY OUT FOR ALL THE FAMILY! What's On - Battle of Britain flypast, Morris dancing, falconry displays, children's fun, historic vehicles, a wide range of stalls and exhibits, bands, entertainment marquee, bar, refreshments. Join Mrs Duck and her ducklings for her Canal Duck Race!

www.moiracanalfestival.co.uk
General enquiries: moiracanalfestival@outlook.com
Adults £6, Children 5-16 £3, car park and programme free

Moira Canal Festival, Furnace Lane, Moira, DE12 6AT - at the heart of the National Forest!
Subject to any Covid-19 restrictions

Mayhem at Wicksteed 2022

Saturday, 28 and Sunday, 29 May 2022 will see Mayhem Boat Mayhem's annual weekend of model boating fun return to Wicksteed Park, Northamptonshire NN15 6NJ. Special events this year will feature 'Falklands War Remembered' and Victorian/



Edwardian Navy fleet sails, the Fletta Club 500 challenge, various I/C power demo runs and an array of fascinating model

displays including hovercrafts. Entrance to Model Boat Mayhem at Wicksteed will be free of charge; there will,

however, be an entrance fee to enter the park (max price £6 per day for vehicles). Camping plots and on site facilities will also be available.

For further information contact Nick Brown at raflaunches@outlook.com, visit www.modelboatmayhem.co.uk and click onto the forum or check out the Model Boat Mayhem Facebook page. ●

Knightcote MBC charity events

On Sunday, June 12, Knightcote Model Boat Club will be holding a general open day from 10am to 4pm to raise funds for a Ukrainian charity. The local RNLI will be in attendance, there will be a raffle, a prize for 'Best Boat on the Water' and refreshments will be served in the clubhouse. Facilities include free parking and onsite toilets and all will welcome, including clubs and groups. The club is located at New House Farm, Knightcote,



CV47 2EQ. For further details contact chrismoiruk@btinternet.com or visit the website at www.kmbcmodelboatclub.com.

Then, on Saturday, June 25, a small group of Knightcote club members will be participating in a sponsored attempt to sail four radio-controlled models from one end of Lake Windermere to the other, with all funds raised being donated to the RNLI. Those wishing to contribute can do so directly via The Windermere Challenge page on the www.gofundme.co.uk website. ●

Southport MBC Open Day erratum

Sincerest apologies for any confusion caused by the incorrect date given in last month's issue for the forthcoming Southport Model

Boat Club's forthcoming Open Day at the Jubilee Pond, Rotten Row, Southport, PR8 2BZ. This should, of course, have read Sunday, June 12, and not Saturday, June 12 as originally specified. ●





Larsen Aqua Aircar

Ashley Needham tells of how he tackled turning this stylish but performance flawed prototype into a slick, good looking working model...

Where do I find them, eh? Well, in this case I came across a very small picture of the Larsen Aqua Aircar while searching under 'Airboats' on the internet – as you do! Intrigued, I then clicked on the link to the internet page where this image resided, i.e., the 'ACBS', or 'American Classic Boat Society' in longhand. It's no secret in the model boating community that I have a real fascination with the weird and wonderful, so I quickly began considering the craft as a potential project. Unable to resist, I emailed the ACBS and was put in touch with the current owner, Paul Miller. Paul bought this boat in a very dilapidated state and has since restored it to a very high standard. He was most helpful, and not only gave me some blurb but also dimensions of the boat and a photograph of the original blueprints! He also shared a link to some YouTube footage (<https://www.youtube.com/watch?v=Fk3HsljEKVE>) of the boat on the water!

Christiansen's concept

Courtesy of Paul, then, here's a little potted history of the boat...

"Philip Christiansen of Phelps, Wisconsin, USA, had a dream about a new kind of boat. He first put that dream to paper in January of 1943 and then, on January 13, 1944, at the age of just 21, wrote to A.M. Deering Engineering in Chicago in response to an ad he'd seen in *Motor Boat* magazine, which offered various boat related services. A.M. Deering advised that his sketches could be professionally drawn up at a cost of \$75. By March 24, 1944, Deering had sent him preliminary prints for review, which had been developed from the cartoon-like representations Philip had sent to them.

Construction of the boat, however, would have to wait, as in November 1944 Philip entered military service. Upon his return he contracted Hemming Larsen of Menominee, Milwaukee to build the boat. Work began in late November of 1946 and by 1947 his vision had become a reality. The cinefilm we found shows a later attempt to get the boat working, having had the front-mounted Continental aero engine replaced by a V-8 in the rear, with a drive shaft under the cockpit driving a sprocket and chain to the propeller shaft. If you watch the video, you'll discover why we named the boat 'Prop Wash'. The bottom line is the boat couldn't get up on plane before the propeller hit the water."

The big issue: it never worked!

I've built three 1920s/30s' boats, all from pictures and some very scant or contradictory information. One, the Farman Hydroglisseur (see the March 2018 of *Model Boats*), was known to have worked as designed, and performs wonderfully as a model, but the other two, the Pontoon boat (see MB April 2017) and the Seagull (MB September 2020), didn't quite go to plan. I did manage to get the Pontoon boat to work, but the Seagull was a bit of a flop, at least as far as the grandiose 'flying' claims went.

So, what about the Christiansen? Well, unfortunately, the current owner pointed out that the boat had never worked as Christiansen might have liked, and neither had it ever gone very quickly – or, for that matter, very well slowly either! The issues are plain to see on the YouTube clip: the prop is too close to the water, the nose never rises from the surface to give any clearance – which means the prop just throws up huge volumes of spray, slowing the vessel down and continuing the vicious circle.

Me being me, I made a rash promise to Paul, boasting that I would get it to work. "Easy! No problem", I said...

Issues to be resolved

Power! It needed more power to get going, and this I thought would have to come from a proportionally larger prop than that featured on the original, a 4-blade unit in the video, or the cut-down job currently fitted. At 19 feet long by 7 feet wide, and 4½ feet high, the original's dimensions translate nicely to a model 19-inches long by 7-inches wide. Once I had drawn a preliminary sketch, a 6-inch (150mm) prop seemed to be absolutely the largest prop I could fit that would still look believable (a 7-inch prop would fit but would just look silly!). That's not very big for a boat this size, so would need to be spun at quite a rate to obtain the sort of thrust I needed, but help was at hand in the shape of a 400-sized 2700Kv brushless in-runner motor retrieved from my spares box. I reckoned 20,000 rpm on a 2s (8v) Lipo should be on the money. Next, I would need the boat to be either tail-heavy or nose-light to keep a modicum of propeller-to-water clearance, and in addition to set the prop with a slight upwards inclination so that it lifts the front end. Then there was that fabulous perfect gloss black finish, with shiny silver trim I'd need to try emulating...

The plan

As usual, my aim was to build a representation, and not a replica, of the real thing. The SPAR design package was unleashed on a large piece of paper and a sketch was made. Unfortunately, the blueprint was not much help, as the side and plan



On the water. Note the recovery ferry standing by just in case!

“This is almost a boat of two halves. The front resembles a speedboat, while the back is completely different and, in my eyes, reminiscent of a racing hydroplane”

views were different sizes (why?) and in any case did not represent the boat as finished, so all I could do was refer to photographs, just as I had with my other 30s' specials!

This is almost a boat of two halves. The front resembles a speedboat, while the back is completely different and, in my eyes, reminiscent of a racing hydroplane. At the bow I opted for a mix of construction techniques, with a 4mm ply former, 0.8mm ply skinning on the sides and half the top, and foam for the rest. At the rear I used 0.8mm ply for the vertical sides and foam for the 'running boards'. Importantly, the chine at the bow was formed from solid foam, as this is not only light and easy to shape but would also allow me to add extra depth (or width) if, or as, required; the chine section had to be much deeper than would be proper as I need lots of lift at the front.

Construction

In addition to the plan and side view dimensioned drawing, I did several back-of-envelope sketches to fix in my mind the sequence for construction, as the front and rear are very different and separate shapes. 4mm ply was used for the basic frame, which consisted of a horizontal sheet that is bow shaped, the centre sloping bulkhead bit, the lower flat section that is the stern and then an upright bulkhead to wrap the cabin section around. These items were propped up at the various correct angles and superglued together (see **Photo 1**) A small wood block

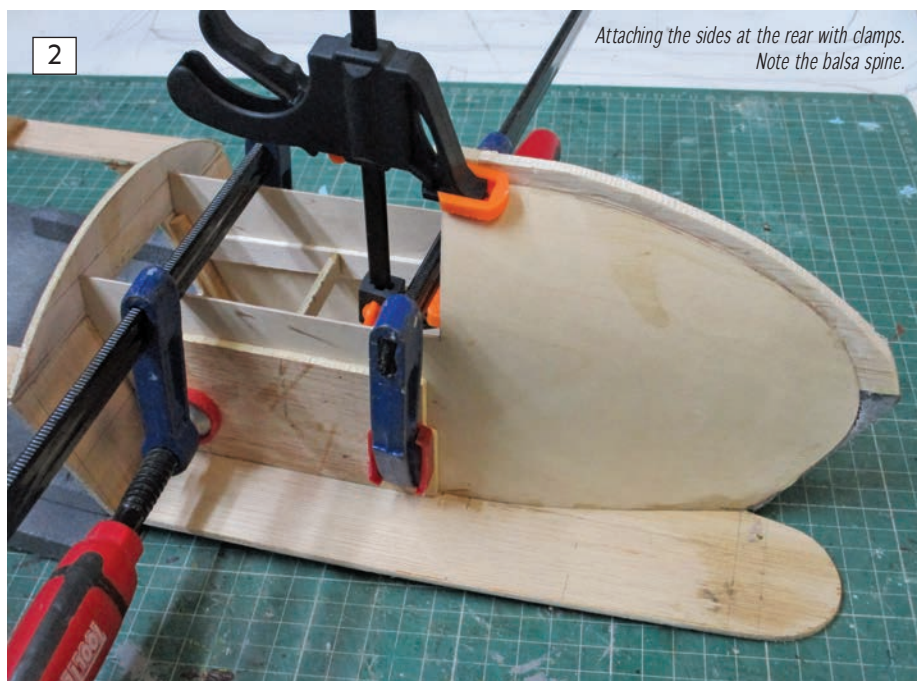


The basic frame and foam lower bow section. The battery will be fitted in the aft section with the rudder, servo, ESC, etc.

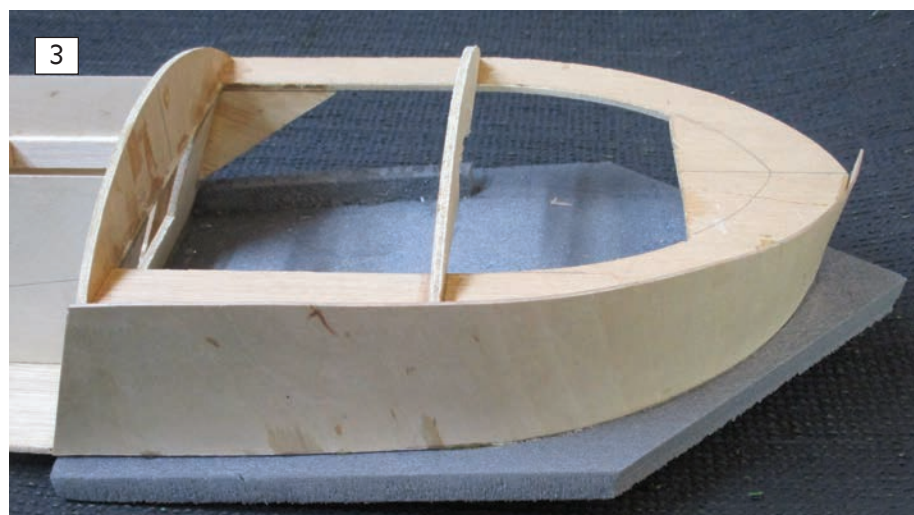
was set at the rear, drilled to take the rudder support tube, and finally a few struts were added to keep the cabin upright and a sheet of foam was glued underneath the nose – at which point the carcass became almost stiff!

Unlike the bow pieces, which had to have a compound curve to them, the cabin sides could be flat at the bottom as the sides are parallel (a simplification on my craft), and

this allowed me to clamp the two cabin side pieces together over the upright supports to see how they'd come together at the very stern (see **Photo 2**) At the very rear the sides form a point but underneath they flare out, so a wedge of foam was inserted, which was sanded to fit the clamped-on sides. Up top, a curved balsa frame was made, as the top is not a knife edge but rounds out from the



Attaching the sides at the rear with clamps. Note the balsa spine.



“Foam was the obvious choice here as, again, I had to deal with various compound curves”

applied generously creates its own reinforcing fillet behind the joints due to its foaming action) and more superglue; the superglue holding each side in place until the Gorilla glue had finished foaming and set hard (see **Photo 3**).

Foam time

Some stylish wedges (I can't think of a better term), almost like running boards on a car, adorn the side of the cabin and continue to the rounded ends. Foam was the obvious choice here as, again, I had to deal with various compound curves (see **Photos 4** and **5**). More templates were transferred on to foam and cut out, before then being sanded to ensure a decent fit against the cabin walls. One this had been achieved, the top was dealt with, transitioning from an almost 45-degree slope at the front, to almost nothing at the rear. When, eventually, I managed to get the foam smooth and even both sides, they were treated to several coats of EzeKote to harden them up and finally glued into position.

I had intended to make the cabin transparency actually transparent, but this would necessitate fashioning a presentable interior and installing a pilot figure, both of which would add weight and at speed (hopefully!) wouldn't be seen any way; so, instead a foam block was made and later painted.

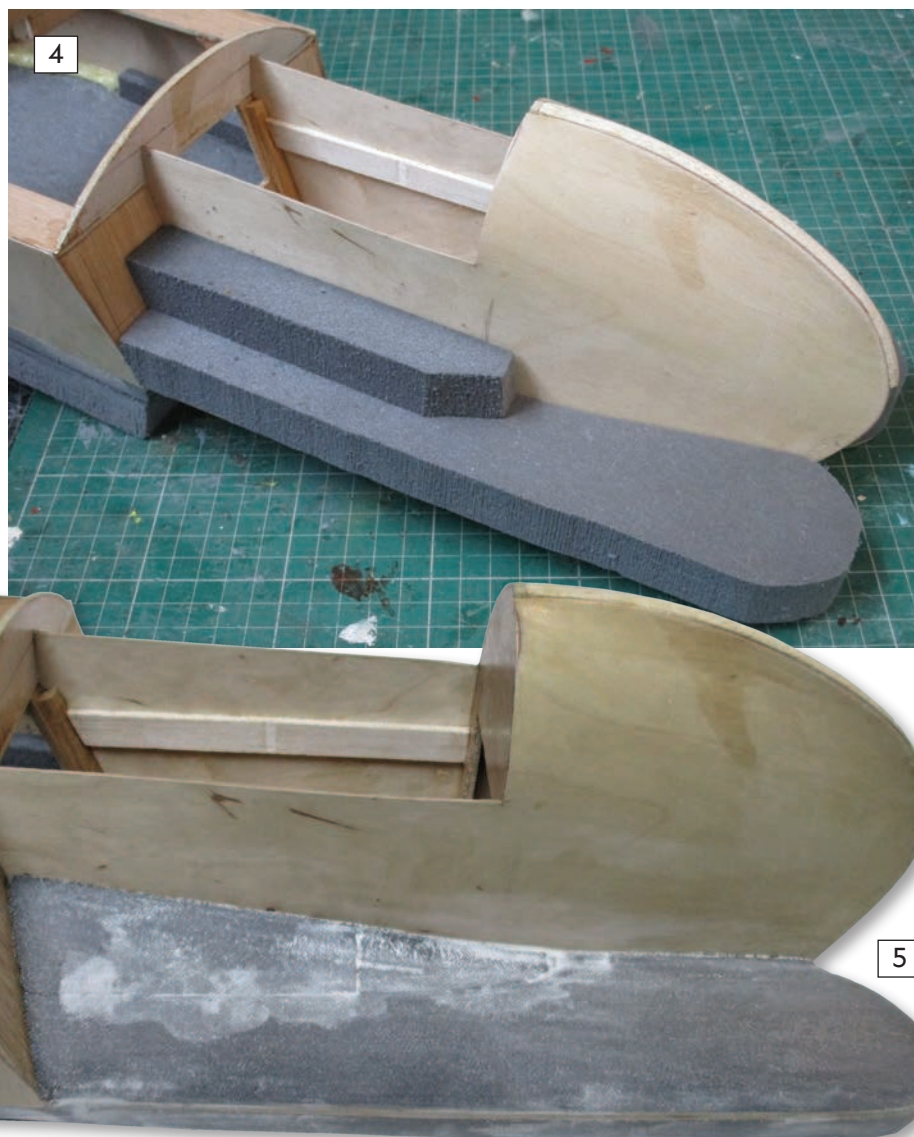
In the meantime, having completed the rear end, my attention turned to the front section again. How long is a piece of string? How high out the water would the nose need to be? How deep should I make the foam bow section? These were unanswerable questions, so I cut and glued in place a 25mm thickness of foam and very roughly shaped it to see what it looked like. Then, having waterproofed the various ply pieces, I filled the bath up and plonked it in the water. All the various bits, motor, battery and so on, were laid in the hull at their approximate positions and stock was taken regarding the attitude of the boat at rest. Was the bow high enough? Was the back low in the water? Too low?

Never fear, the nose was high and dry and was providing more than sufficient clearance for the 6-inch prop! The rear hull lobes were a bit low in the water, but no more than one could see in the video. Not bad so far. From experience, I knew this initial trim would alter somewhat when the boat was in motion, and the bow was not properly finished off either.

Before the water was drained from the bath, a square of 20mm deep foam was placed under the nose and a 10mm thick sheet of foam under the flat rear half of the cabin section. This looked much better. The rear was sitting with the water just touching the ply base and there was perhaps now 20-25mm clearance between the water and prop.

These additional bits of foam were glued in place and a veritable sanding frenzy took place, allied with a bit of filler, to shape the bow and blend the rear section to the ply base.

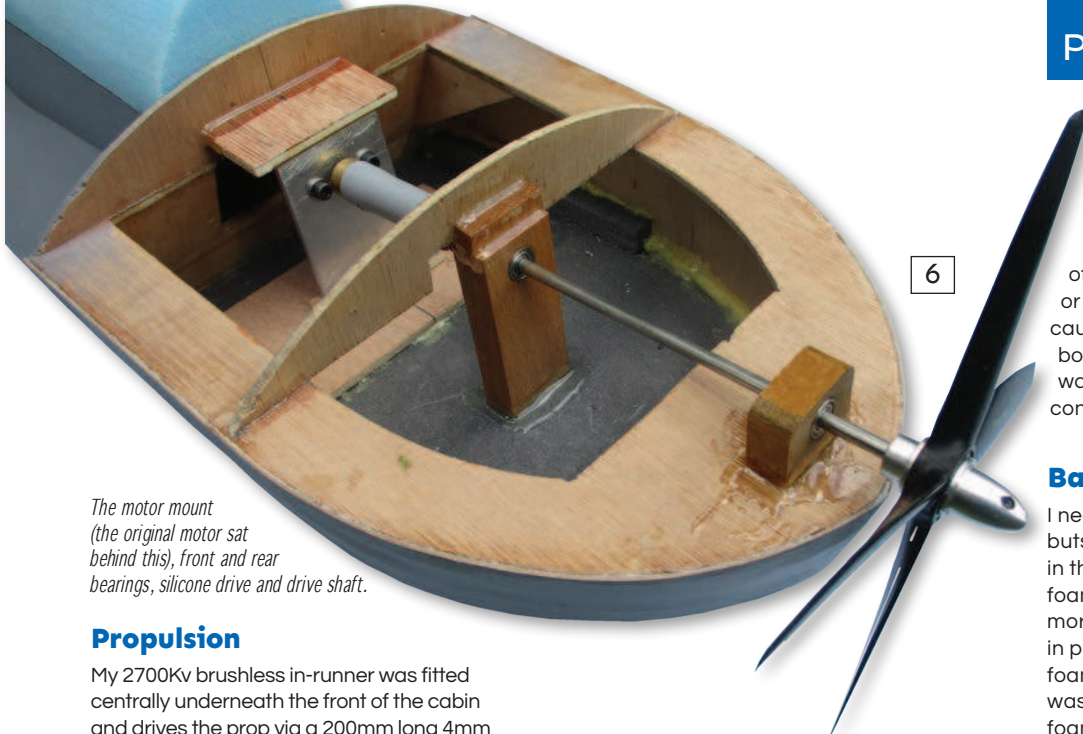
ABOVE: One bow piece applied. BELOW: Running board foam, requiring some severe carving.



ABOVE: The running boards shaped.

cabin window section. Please see pictures! Two cabin/body sides were cut from 0.8mm ply using a card template and PVA was used to glue the sides to the cabin supports. Once this had dried, both sides were pinched together at the stern and held one at a time against the arch while superglue was applied.

When it came to the bow, those people with superior technical drawing or CAD design skills could probably have drawn out the bow side skins and then simply cut them out and glued them in place, but unfortunately that's not me. Instead, I used more card templates, trimmed until they fitted, and drawn round on to 0.8mm ply. With these pieces cut out I then glued them in place with expanding Gorilla glue (which if



The motor mount (the original motor sat behind this), front and rear bearings, silicone drive and drive shaft.

Propulsion

My 2700Kv brushless in-runner was fitted centrally underneath the front of the cabin and drives the prop via a 200mm long 4mm diameter stainless steel shaft and solid coupling, supported at the front by a miniature shielded ball race bearing. I gave the prop an upwards inclination to provide some positive lift as soon as it starts to spin. An alloy mount was made for the motor, along with a front bearing block, and with the shaft inserted and coupled both to the motor and prop the assembly was literally chocked in place and adjustments made to the mounts. Once finally happy, the whole lot was secured in place with epoxy glue (see **Photo 6**).

On testing, there was 'an amount' of vibration, which appeared to be due to the slightly out of true shaft and solid coupling. Other shafts were tried but the vibration persisted. The answer was to provide a flexible joint between the motor and shaft. Two standard brass fittings coupled together with a bit of thick-walled, tight fitting, silicone rubber tube provided a cushion between shaft and motor, and on retesting the drive train was found to be as smooth as my chat up lines!

Having conquered any inherent vibration, I connected up an ESC and 2s Lipo for a bench test. The first advancement of throttle sucked up and shredded my plan, and, secondly, the coupling pulled out the silicone tube, which of course it was bound to do! Having agonised over which way to fit the bearings, naturally I chose the wrong way and consequently couldn't use the rear bearing as a thrust-race, so I had to fit a third bearing. This, though, was an easy job, and with a spacer of brass tube in place, the shaft stayed put. Having carried out this work I again connected everything up and, my word! I certainly wouldn't be lacking thrust. The pull from the prop (a three-blade 6-inch x 4.5-inch) was enormous – and vibration free. But, and there's always a but, the boat twisted markedly to the right (clockwise) due to torque reaction from the anti-clock prop (viewed from the rear), so I removed the battery on the left of the boat to counter this. In theory, multi-blade props produce less torque effect than twin blade ones, so I wanted to keep either three- or four-blade options on the table. This would also be more authentic to the real thing.

At the stern the rudder post had already been fitted, so a tiller, rod and mini servo were added to enable a first test to be carried out.

First test

All this would need testing before I moved any further along with the build.

Practically speaking, however, any alterations required would have to be to the underside, as the top had to look as it was, leaving the prop-shaft angle the only variable above water. Altering this would be very destructive and not really an option as I'd tilted the prop up as much as I dared, and any more would have looked a bit odd, so I finished off the bow and the boat was painted in grey primer, before being taken to a quiet side stream at Bushy Park and fuelled with a 2s LiPo battery.

Oh dear! Although the prop was clear of the water, it came into contact with it on even very small throttle openings. It was almost as if the action of the air across the bows was drawing the bow down. So, I added some lumps of lead into the fuselage at the rear and this did help, but there was still some contact. I therefore trimmed 10mm from the end of each blade with a knife from the toolbox and tried again. This was more like it! Success seemed assured, so I advanced the throttle and the boat gathered pace. But, as I eased the throttle

off (I didn't want it to either go too fast or get too far away), the prop must have caught a wave or something and the entire boat flipped upside down. Although it was still running OK, there was no point in continuing. Game over.

Back at base

I needed more hydrodynamic lift, no ifs or buts; without it, the project would be dead in the water. So, the 'bulge' of additional foam was sanded flat and a new wider and more substantial 20mm piece was glued in place. Previously I'd tried for additional foam with a nice look to it, now all I wanted was to get some lift. Accordingly, the new foam was simply sanded at the side to match the existing lower portion of the bow and a slope was sanded at the front; no curves, this was purely functional. Next, the prop was trimmed again, so it was now about 120mm in diameter (down from 150mm) – oddly enough, bringing it down to about the same relative size as that fitted to the real boat. Coincidence?

Lastly, I waterproofed my receiver and ESC (just in case), and it was off to the pond again.

A second test

This was a great improvement from the last outing. The prop stayed demonstrably clear of the water during the test (you could hear when the prop contacted the water), although it certainly didn't look like it when the boat was going at 1/2 throttle or above. Closer inspection showed that the prop air-wash was throwing the bow wave about, hence the volumes of spray, and looking at pictures I took showed me that there was a very big spread of air disturbing the water either side of the bow (see **Photo 7**).

More weight was added to affect the side-bias and lift the nose up, but the boat still seemed to attain its best speed at only half-throttle.

On test, with the original motor just visible; note the incredibly wide air pattern either side of the bow.



WHAT IS AVAXHOME?

AVAXHOME-

the biggest Internet portal,
providing you various content:
brand new books, trending movies,
fresh magazines, hot games,
recent software, latest music releases.

Unlimited satisfaction one low price

Cheap constant access to piping hot media

Protect your downloadings from Big brother

Safer, than torrent-trackers

18 years of seamless operation and our users' satisfaction

All languages

Brand new content

One site



AVXLIVE ICU

AvaxHome - Your End Place

We have everything for all of your needs. Just open <https://avxlive.icu>

Back at base, again, the motor was changed for a small 28mm 2200Kv out-runner (see **Photo 8**) mounted forward of the alloy mount rather than behind as the original was. This new motor was a third of the weight of the in-runner (50gm as opposed to 143gm, a useful saving). I decided to retrofit this as it was apparent that full speed was being reached at half throttle, meaning I didn't need all those revs and it was taking 21Amps just doing so. In addition, the new motor only takes just over 12A, another worthwhile reduction. Finally, a spray rail was fitted just above the new add-on front foam section. This, I hoped, would help improve hydrodynamic lift, and better keep the prop clear of the water.



The small outrunner that replaced the original motor, along with ESC, waterproofed receiver protected yet further by a plastic bag and extra thrust bearing (to the right).



40-gram lead weights inset into the foam underside to the rear. A bias weight has been inset further forward.



The new foam top coated with glass fibre and resin epoxy. A single curved hatch covers the aft section over the motor.

A third test...

And a fourth, fifth, and.... Well, you get my drift. Yes, A project like this is never as simple as just completing the actual build; there's almost always a long and winding road to be travelled before you get where you need to be, i.e., achieving your end goal. Modifications tested included a filler section to lengthen the front foam nose, a fillet to square off the front 'step', weights in and under the hull, weights inset into the foam, different props, etc, etc.

To be honest nothing made that much difference. The inset lead weights (see **Photo 9**) did help the stability as they were lower down than the weights were when in the hull; the new foam added to the front worked well in keeping the nose up; and the spray rail and front 'shelf' also made a visible difference (the shelf can be seen in the various photos just out of the water at the bow). But I sort of reached a performance plateau. Larger props just made things worse as they increased the torque reaction, hence badly affected stability; they were also prone to contacting the water. Smaller props and a 3s battery saw the same results vis-à-vis torque reaction. Having said at the beginning that I would need a proportionally larger prop than that fitted to the original, guess what? Yes, I ended up having to cut my prop down to about the same (small) proportion as fitted to the original!

Finishing off

Having established that all that could be achieved performance wise had been, the grey primer upper works were given a coat of gloss black. And then it all went pear-shaped...

On the day, and in the unseasonably warm sun, the paintwork blistered, and patches of the foam sank, producing hollows. There was nothing for it but to cut off and replace the front bonnet section, sand off all the paint from the side foam shelves and cover the foam with fine glass cloth and epoxy resin. Once this had set, P38 car body filler was scraped across the surface and what seemed like hours of wet and dry sanding ensued to get it all smooth (see **Photo 10**) However, the upshot was that the finish was



Ashley's Aqua Aircar in all its glory!

far superior to the original, and it was now very hard and dent resistant. The black paint went on with virtually no remedial work. Just a few spray coats and I had a lovely glossy black finish (see **Photo 11**). This was probably the best finish yet, not perfect but adequate for the brief.

Spraying something as small and multi-faceted like this boat has to be done in one go; all parts of the model need to be wet or overspray forms. Realistically, this means spraying and then leaving well alone while your paint dries, hoping the finish is OK, as re-doing a small patch means re-spraying the whole thing and the law of diminishing returns kicks in!

“Spraying something as small and multi-faceted like this boat has to be done in one go; all parts of the model need to be wet or overspray forms”

Following this, some silver paint and pinstripe was applied, and I left it at that. Anything else would have to be glued on to paint and, with the likely amount of water being splashed around, I thought it prudent to keep things simple.

All the time spent, and effort put into achieving the best paintwork possible, however, paid off, as the prototype has a very superior mirror-like black finish, and as the current owner would be seeing the pictures of the model, I wanted to do justice to this (if nothing else!). Providing the finishing touch, the 'Aqua Aircar' lettering applied to the bonnet sides came courtesy of a graphics company, using a stock classic American custom-car style font for the script not that far removed from the original.

The foam cabin was finished in light blue, using Pebo craft acrylic paint, to provide a bit of colour to the boat, and was trimmed with silver



INSET: The well waxed paintwork and beautifully matched and applied Aqua Aircar script.

BELOW: The Aqua Aircar at very slow speed.





ABOVE: As fast as the Aircar goes note the bow wave below the shelf. The spray is due to prop wash blowing on the bow wave. BELOW: Note how at slow speed, the board sits on the water in the exact same way as evidenced in the full speed shot (above).



lining, all of which was then sprayed with a craft extra-gloss clear varnish. Underneath the bow I used black polyurethane paint, as this is tougher than the spray variety but has a similar high gloss finish.

Maiden voyage

While I'd made many test runs, the official maiden voyage came with the debut of the craft in its final finished condition on a bright sunny day (sunglasses, please chaps!). So, what can I tell you? Well, the model is manoeuvrable at all speeds, but the latent stability is, er, not great, and so the wind must be taken into account when making full throttle turns. It's certainly exciting to watch, with the

high-speed buzz of the prop and the curtain of spray covering the boat! Unfortunately, appearances can be deceiving, and the model's not as fast as it looks: it should be a rip-snorting, fly-across-the-pond, animal, but sadly it's not. Perhaps I am being a bit mean, as those who've seen video footage of it think it goes OK, and it is 'fast-ish'.

The owner of the prototype, Paul Miller, tells me: "I do someday hope to repower the boat with a jet drive in the rear and have the prop for show only. That was the final hope of Mr. Christiansen."

From the point of view that the original never actually worked as intended, therefore, the model is a success, and it certainly looks the part.

What's wrong?

In terms of the prototype's performance, it's difficult to say (not being a professional boat builder or aerodynamicist) where the issues lie, but it seems to me and 'the panel of pondside experts' that there are perhaps two main problem areas. Firstly, the wide front splits the flow of air, as seen in the wake pattern pictures (and this must cut down the thrust by quite a bit). Secondly, we think the wind from the top half of the prop is pushing down on the hood/bonnet causing a downwards thrust, countering the hydrodynamic lift. The more throttle you apply, the greater the downwards thrust, and, of course, perversely, this is not helped by the upwards tilt of the prop. There wasn't



ABOVE: *Thar she blows! Full speed and no rise. BELOW: Turning slowly to the left. Again, look at the prop air wash on the water. INSET: This rear shot ably demonstrates how the Aircar boasts a shape like no other!*



enough initial buoyancy at the front of the prototype to keep the prop clear of the water (just as was the case with my model on the first try-out), and if it did actually start to plane, I wonder if the relatively narrow width might have been an issue for stability with regards to the prop torque reaction – again, as I had experienced.

Proof of concept

A.M. Deering did a very good job of providing working plans from Christiansen's very crude sketch of his dream boat and, equally, Miller-Larsen did a great job in turning these plans into reality. The trouble is no one, it seems, put much thought into the actuality

of making the boat perform as envisaged. I, therefore, had to essentially carry out the research that should've been done before any plywood was cut.

However, after all that, with a bit of tweaking, my model does work roughly as Christiansen might have hoped, and Paul was very pleased to see pictures and a video of 'his' boat performing well, even if only in model form.

Unfortunately, current regulations in the USA forbid the use of the boat as it is currently configured (with the people-mincing prop at the front). Luckily, though, we have no such issues in our park!

So, there we have it: the Larsen Aqua Aircar – a rare sight, and what a looker! ●

Will the Aircar fit in your showroom?

Overall length	520mm
Width	170mm
Height	145mm
Weight without battery	840gm



Empress of Canada

Part 1

Roy Cheers begins a three-part series on the scratch-building of this stylish Canadian Pacific Steamships' vessel...

Empress of Canada was Canadian Pacific Steamships' last ocean-going passenger ship and then became Carnival Corporation's first cruise ship *Mardi Gras*.

Younger readers may not be aware that before World War II the only way for most travellers to go overseas was by ship. In the 26 years following the end of the war, Canadian Pacific Steamships operated a service between Liverpool, Greenock and Montreal and you could have travelled on one of its 'White Empresses'. Almost every week one of them could be seen at Liverpool's Princes Landing Stage, her bright white hull stark against the soot-blackened Liver Building (see **Photo 1**).

Empress of Canada was completed in 1961 by Vickers-Armstrong at its shipyard at Walker, Newcastle upon Tyne for Canadian Pacific Steamships Ltd, which was the British subsidiary of Canadian Pacific Railways. She had a gross tonnage of 27,300, with a length of 650 ft (198.1 m) and had accommodation for 192 first class and 856 tourist class passengers (when cruising, she operated as a one class ship).

After completing 121 transatlantic voyages and 82 cruises, air travel had made her uneconomic and she arrived at Liverpool for the final time on November 23, 1971. In January 1972 she was sold to Carnival Cruise Lines and, after a few internal changes and a change to her colour scheme, she was renamed *Mardi Gras* and served as Carnival's first cruise ship. She sailed for her new owners up until 1993, when Carnival decided to update its fleet by ordering new tonnage and so she was, consequently, sold. She continued to be operated under several different names and changes of ownership until 2003, when she finally was scrapped.

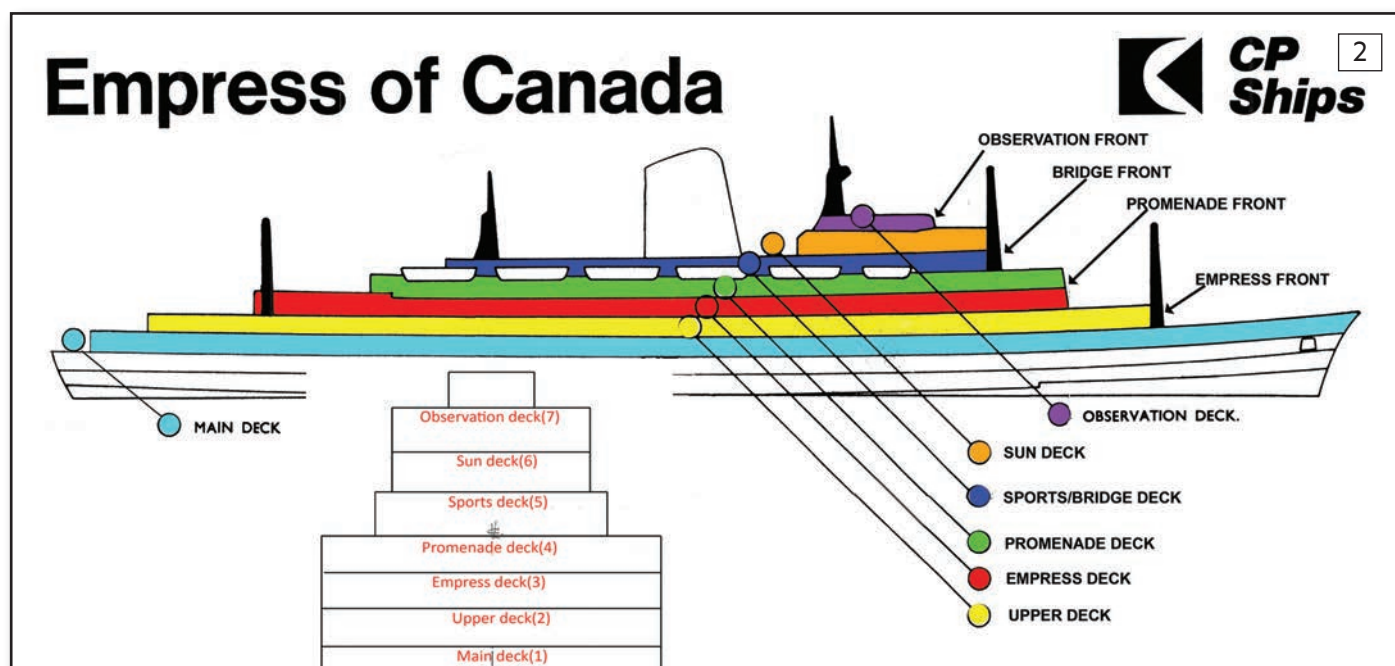
You can learn more about her at http://www.liverpoolships.org/empress_of_canada_of_1961.html.

Planning

Why did I decide to model *Empress of Canada*, and this incarnation of her in particular? Well, I think that ships built in the pre- and early post-WWII era were generally among the most stylish-looking ever built, and amongst the transatlantic passenger liners, the *Empress* is the only one I ever sailed on. That, and a few photos taken then and afterwards while she wore Canadian Pacific's original colours, were enough to 'sow the seed'.

A set of the shipbuilder's plans is held by the Tyne and Wear Museum, but I limited my costs by purchasing one plan, a profile view. This turned out not to show the vessel as she entered service but instead to illustrate some planned changes at the aft end of the superstructure. Unfortunately, the museum could not copy the Body Plan, an important document for getting the hull shape correct.

Two other items proved to be most useful. One was Vic Smeed's model builder's plan of the very similar *Empress of Britain*, from which I adapted the body plan to reproduce the slightly different flare of the bow and add the bulb at the forefoot. The other was a low-resolution copy of the profile and deck plans, originally published in the Shipbuilding and



Shipping Record magazine and now made available on the Tynebuiltships website.

A variety of images were found through internet searches and provided useful information. None of the plans showed views from ahead or astern, so this was an area where pictures were essential.

Scale

My choice of scale was 1:160, which provided a good balance between size, weight and ability to detail. This resulted in a model 49-inches long, with a $6\frac{3}{8}$ -inch beam and a draft of $2\frac{1}{4}$ -inch. At this small scale, it's better to describe my model as 'near-scale-as-is-practical-to-make'. With my level of skill, I estimate that I can measure, mark and cut a piece of styrene to within plus or minus 0.25mm of the correct dimension. This is good enough to, say, make the four walls of a small deckhouse from one strip and have it look just right, but when building one deckhouse on top of another this kind of discrepancy can build up and make the top lopsided. Step-by-step checking can ensure that any such differences balance out.

For any ship that was built 60 years ago, the remaining plans are unlikely to show all the detail required, and that was the case here, so some assumptions were necessary. Sources such as John Bowen's book *A Ship Modelmaker's Manual* helped, and photos of vessels of a similar vintage offered suggestions.

Simplifications were also necessary and some of mine will be obvious, such as the use of the 0.030-inch thick styrene and wood for the walls, which are equivalent to a full size 4.8-inch thick. A different example arose from the decision to use cast davits from the Bluejacket Shipcrafters range. Even after some trimming they were too wide by a couple of millimetres, so the width of the deckhouse on which the upper ends were supported was reduced by that amount. I also eliminated sheer on the aft decks and made them flat.

It's necessary to distinguish the various parts of the vessel when describing the construction of the model. **Photo 2**, adapted from an original Canadian Pacific publicity leaflet, is included to help identify the locations.

Getting started

While starting to draw up the shapes of the frames from the body plan, I remembered the article by Alan Ludbrook in *Model Boats* October 2019 which described the hull built in two parts for his *HMS Waterwitch*.

The construction I've used on previous models has been to make the whole superstructure lift off to provide access to the internals. If the superstructure is a different colour from the hull, that difference masks the split between superstructure and hull. With an all-white hull, that's more difficult.



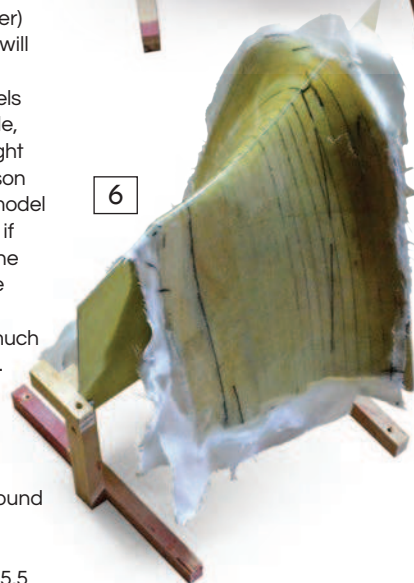
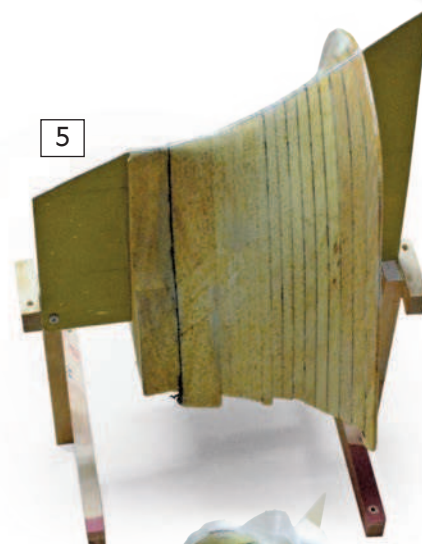
The split hull type of construction I have used makes the upper hull and superstructure into one complete piece, effectively a waterline model. The lower, immersed hull is separate, contains all the working parts, and supports the 'waterline' hull. This moves the split to a location which has different colours above and below it.

Photo 3 (without the coaming added later) shows that in addition all of the internals will be easily accessible.

There was another consideration. Models with a high superstructure can be unstable, because a model has relatively more weight high up than the original vessel. Comparison with previous models indicated that this model should be stable if built to scale. However, if it was later found necessary to increase the stability by increasing the draft, it could be done either by modifying the lower hull or making a new one, which would require much less work than if the hull was all one piece.

The upper hull

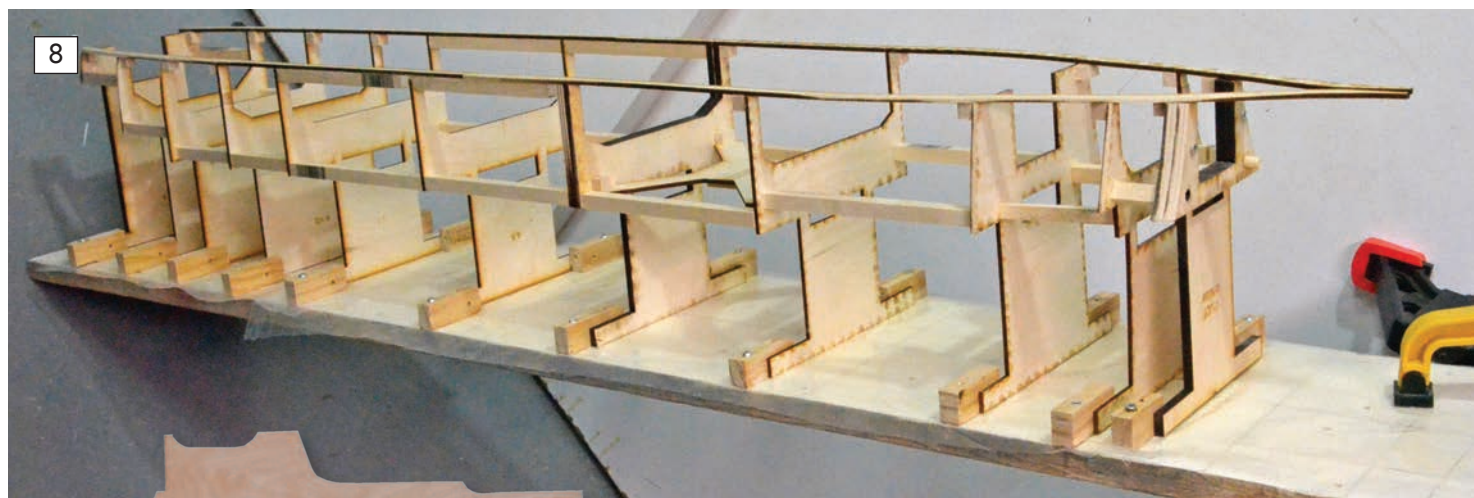
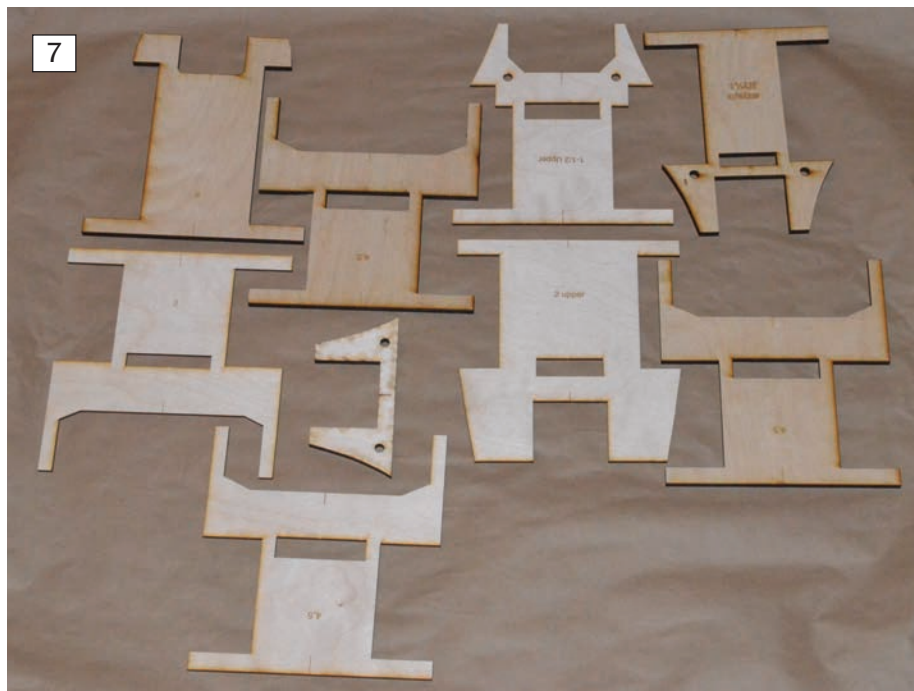
I started by making the upper hull. The *Empress* was built with solid bulwarks around the bow. The flare of the bow made it a challenge to create these bulwarks from wood or styrene, so I made the foremost 5.5 inch of the bow from fibreglass and epoxy, and this was the first part to be made. A pattern was made up 'bread-and-butter' style from balsa. Two half-width pieces of each slice were cut from balsa and glued either side of a centre rib of $\frac{1}{16}$ -inch aluminum, before sanding to shape. Several coats of



epoxy and fibreglass were applied followed by waxing and mould release (see **Photos 4, 5 and 6**). Five layers of 3 oz fibreglass resulted in a shell of 0.040-0.050-inch thickness. This was more than the 0.030-inch thickness I wanted, so some slight trimming of the edges was necessary.

The frames are of $\frac{1}{8}$ -inch and $\frac{1}{4}$ -inch plywood. Laser cutting is a fast and accurate process for shaping hull frames, and one which is now available for hobbyists at public libraries in our area. The hull frame outlines were traced from the modified Vic Smeed plan into Inkscape and then scaled as required. Before real construction began, a few of the hull frames were cut out of foamboard or cardboard and mounted on the building board as a rough check before cutting the 'real' plywood frames. The frames were carried up at the sides to the highest full width decks. The bottom edge of this hull has a $\frac{3}{8}$ -inch wide rim piece glued along the bottom of the frames (see **Photos 7 & 8**).

The sides of the mid-section are 'flat' panels of $\frac{1}{32}$ -inch plywood (see **Photo 9**). This was flexible enough to accommodate both the concavity near the bow, convexity near the stern, and the taper toward bow and



stern. Temporary clamping blocks were glued onto the frames near bow and stern. These provided suitable surfaces for the clamps to hold the curved ends of the side walls in position while the glue set (see **Photo 10**).

There is a knuckle in the side walls at the forward end. Previous experience with another model showed it was difficult to maintain the shape of such a knuckle due to later sanding and fibreglassing. Building on a tip from another MB article, a slit was cut along the knuckle line and a piece of 0.020-inch brass wire was glued in to form a hard corner (see **Photos 11**).

Once the side walls of this mid-section were glued in place, the bow shell was glued on. At the bulwark level of this, and in several other places where edges were unsupported, a small piece of 0.003-inch thick brass strip was glued on the inside. This strengthened the joint and is all-but-invisible after finishing.

The sternmost 3-inch of the upper hull was made from basswood, built up bread-and-butter style. The *Empress* had a stern anchor stored in a recess, so the layers were glued together, working up from the split line to the



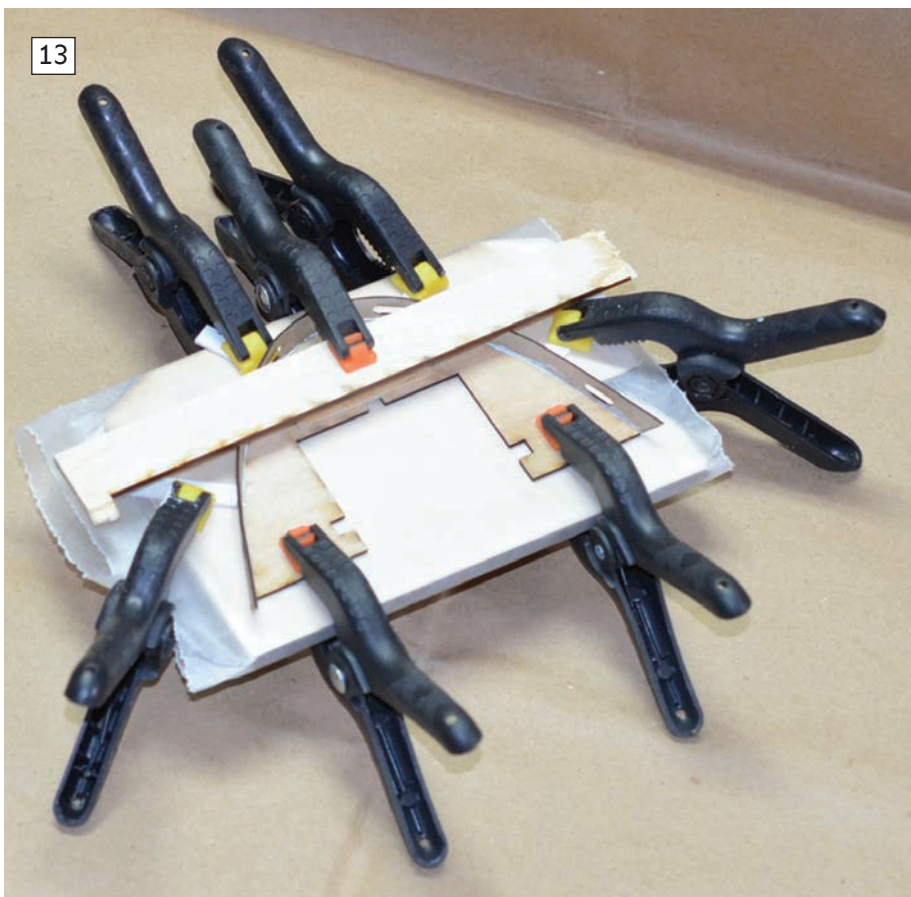
“To build the upper hull bottom-up on a board was an easy decision; deciding how to do the lower hull not so”



top of the anchor recess (see **Photo 12**). The recess was cut out and then the topmost layers added.

The main deck (1) bulwark around the stern was formed from a strip of $\frac{1}{32}$ -inch plywood. Finding the correct shape, which when fitted was sloped at the very stern and almost

vertical at the sides, was a matter of trial and error with cardboard cut outs. The strip was curved in two stages, first clamped around a tin of approx 5-inch diameter, heated with a heat gun and left for some time to cool. The second stage curved the centre portion to a radius of 2-inches. The heat softened the



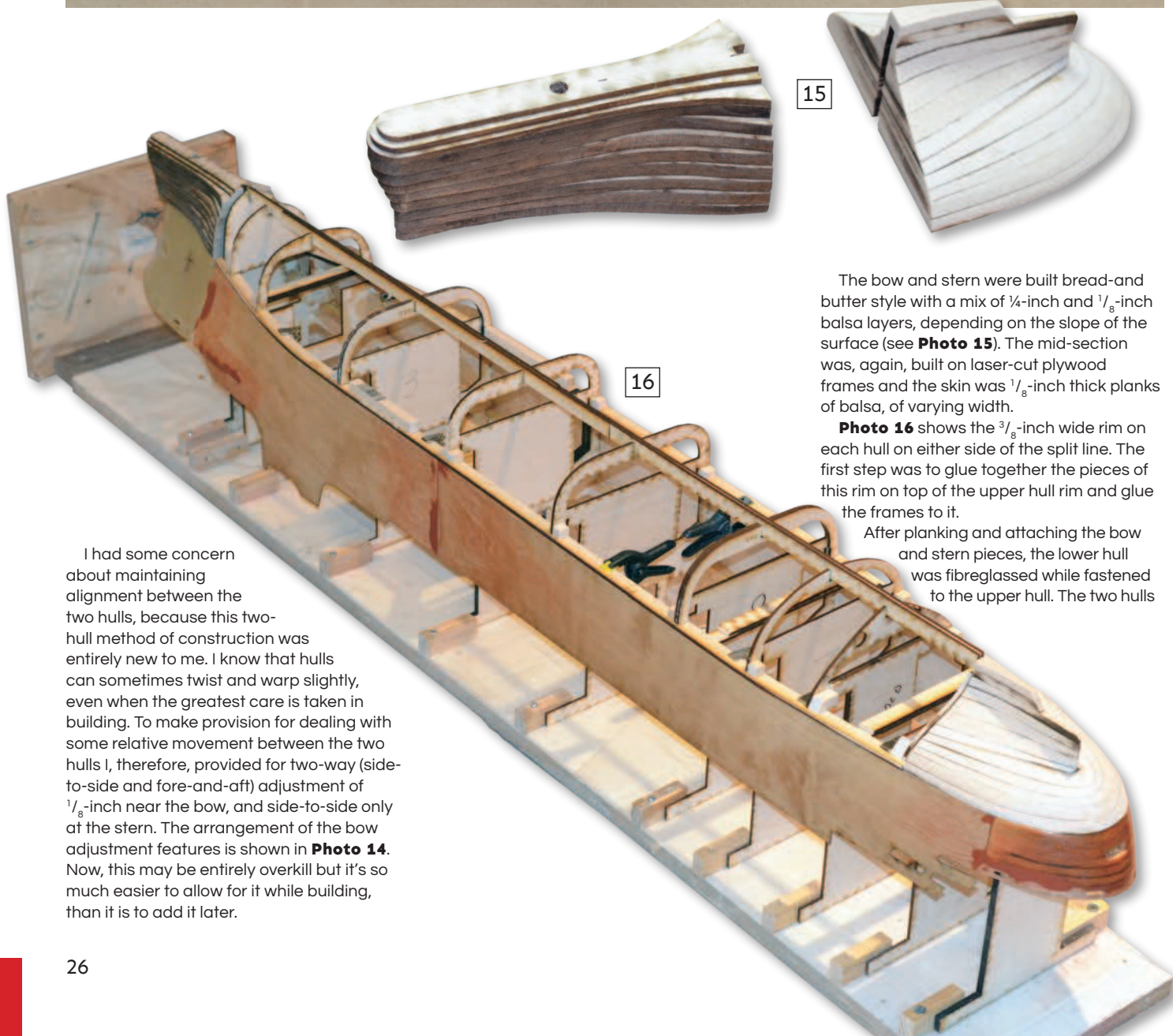
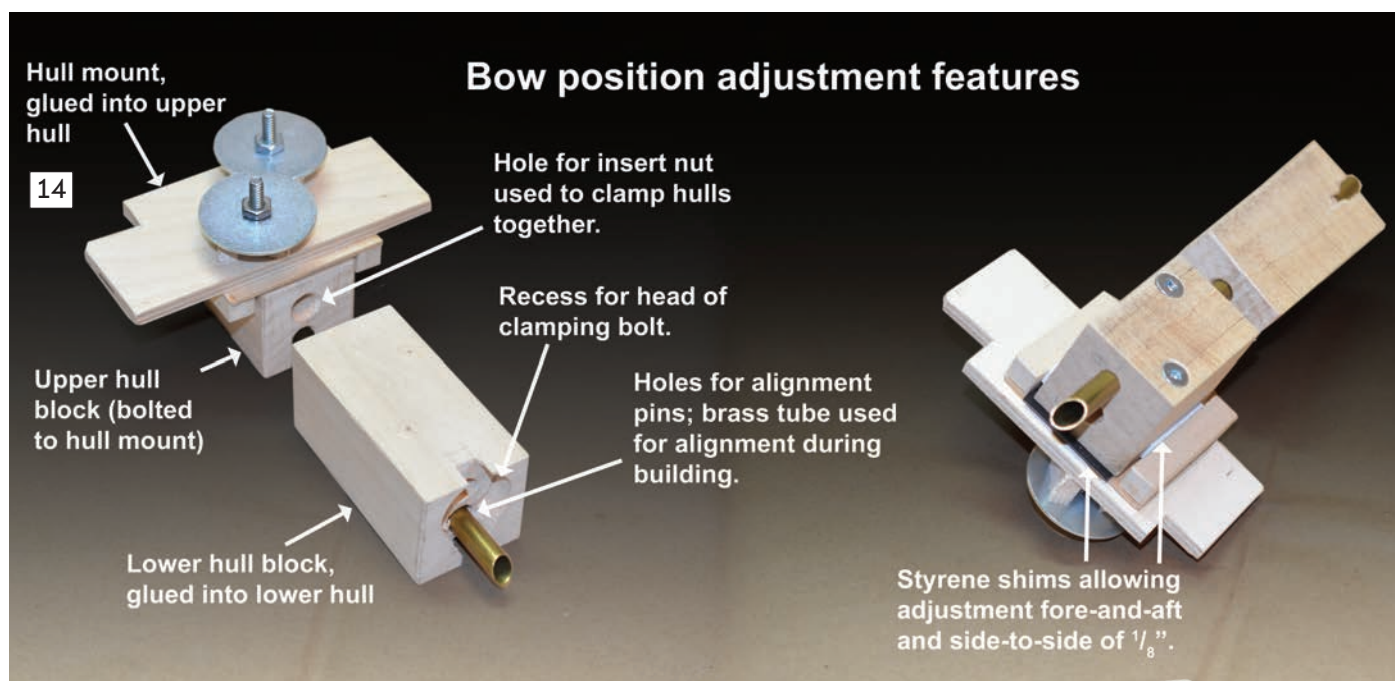
glue between the plies and when it hardened the strip retained its shape. The bulwark was glued to the deck layer (see **Photo 13**) and this assembly glued on top.

The hull was fibreglassed and primed externally, and the internal surfaces which were visible upside down were epoxied.

Now the lower hull...

To build the upper hull bottom-up on a board was an easy decision; deciding how to do the lower hull not so. The first plan was to build it keel up on another board but, after further thought, I decided to assemble it while the mating rims of the two hulls were clamped together.

Before planking began, some thought was given to how the two hulls would be clamped together for sailing. Four methods presented themselves: gravity; magnets; screws down through the upper hull; and screws up through the lower hull. The latter was the chosen method, and two basswood blocks were glued into each of the hulls for this. A $\frac{3}{8}$ -inch diameter hole was drilled into each one for the securing bolts, with an insert nut fitted in the upper hull. The forward pair also had a $\frac{1}{4}$ -inch hole drilled to take a mating pair of alignment pins.

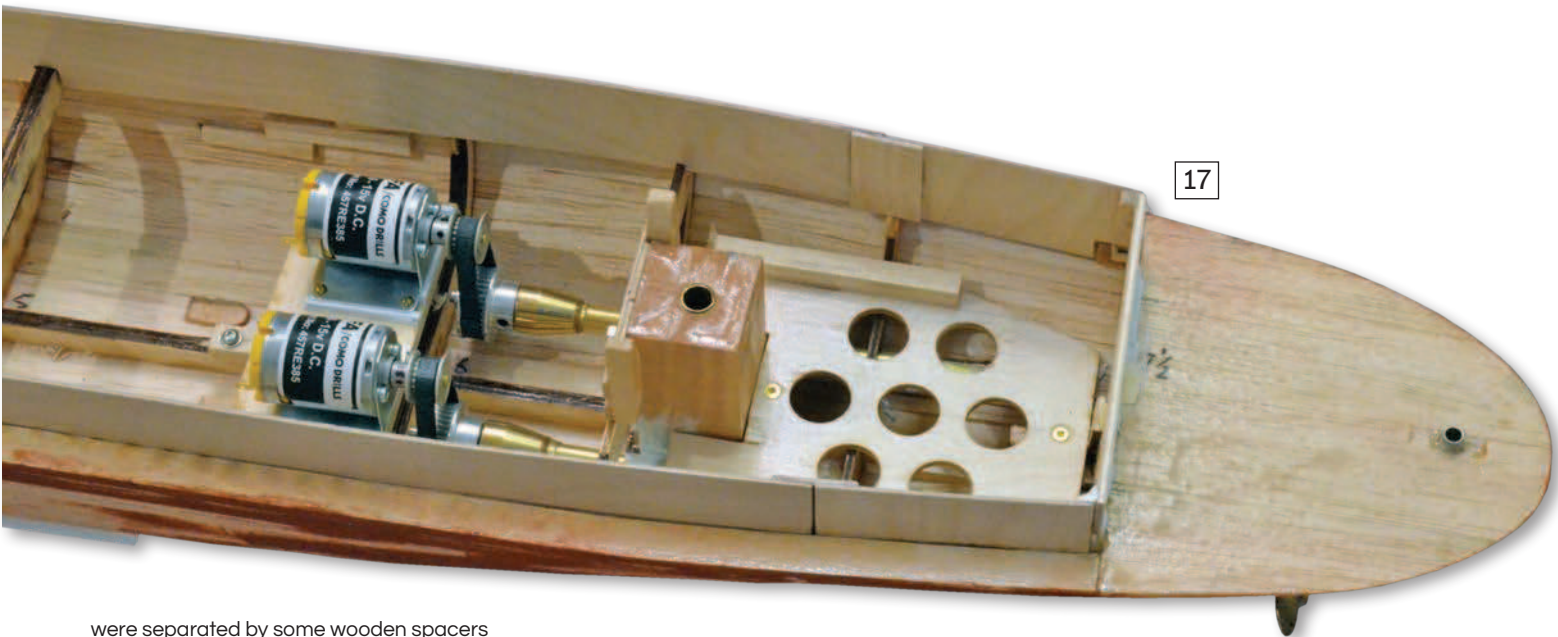


I had some concern about maintaining alignment between the two hulls, because this two-hull method of construction was entirely new to me. I know that hulls can sometimes twist and warp slightly, even when the greatest care is taken in building. To make provision for dealing with some relative movement between the two hulls I, therefore, provided for two-way (side-to-side and fore-and-aft) adjustment of $\frac{1}{8}$ -inch near the bow, and side-to-side only at the stern. The arrangement of the bow adjustment features is shown in **Photo 14**. Now, this may be entirely overkill but it's so much easier to allow for it while building, than it is to add it later.

The bow and stern were built bread-and-butter style with a mix of $\frac{1}{4}$ -inch and $\frac{1}{8}$ -inch balsa layers, depending on the slope of the surface (see **Photo 15**). The mid-section was, again, built on laser-cut plywood frames and the skin was $\frac{1}{8}$ -inch thick planks of balsa, of varying width.

Photo 16 shows the $\frac{3}{8}$ -inch wide rim on each hull on either side of the split line. The first step was to glue together the pieces of this rim on top of the upper hull rim and glue the frames to it.

After planking and attaching the bow and stern pieces, the lower hull was fibreglassed while fastened to the upper hull. The two hulls



were separated by some wooden spacers and some polyethylene plastic sheets and clamped together on the inside. The plastic sheet ensured that any errant epoxy did not glue the two hulls together. **Photo 3** (see page 21) shows the hull before fibreglassing.

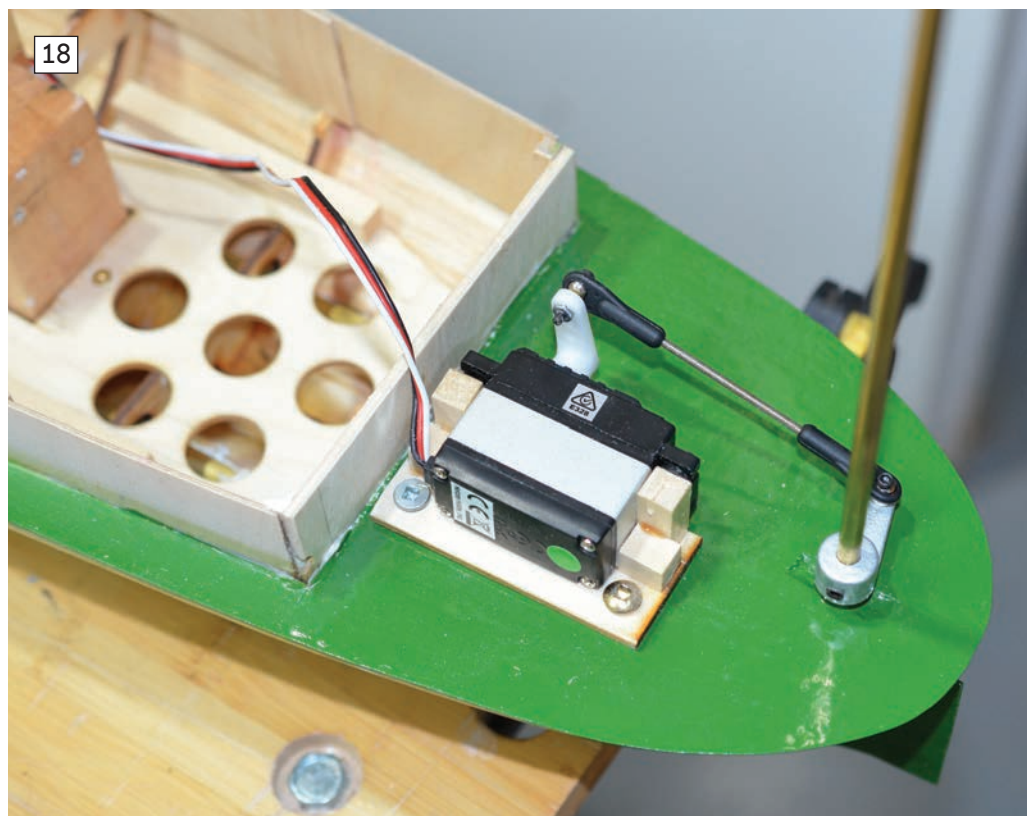
After fitting the motor and battery mountings, a 1-inch high coaming was glued around the inside of the rim of the lower hull. During a surprisingly mild mid-winter weekend, the hull was immersed in water outdoors to the top of the coaming to verify watertightness.

Two MFA/Como RE385 motors drive 40mm diameter propellers via 1:2 ratio toothed belt drives and Raboesch waterproof prop shafts (see **Photo 17**). I prefer the belt drive arrangement because it eliminates couplings, allows flexibility in motor positioning, and simplifies alignment. The 1:2 ratio gives better low speed control.

The rudder was made using the Glynn Guest method, which involves an empty metal drinks can and epoxy. A waterproof servo for the rudder was mounted on the deck of the hull, outside the coaming and inside a cut out in the upper hull (see **Photo 18**).

Lower hull ballasting

A surprisingly accurate guesstimate predicted a total weight of close to 17lbs would be needed to bring the model down to its waterline. Guessing that the upper hull would weigh 5 lbs left 12 lbs to be added as ballast. A glance at **Photo 19** suggests that the lower hull, with its long shallow profile and an open top, might not be able to resist bending, or could even break. In other words,



with 12 lbs distributed along its length would it buckle in the middle? In the water it would be supported along its length, and OK. But lifting it in and out of the water, supported at two locations, what then?

Part 2

At this point work resumed on the upper hull, but this will be described in the following instalment in next month's issue. ●





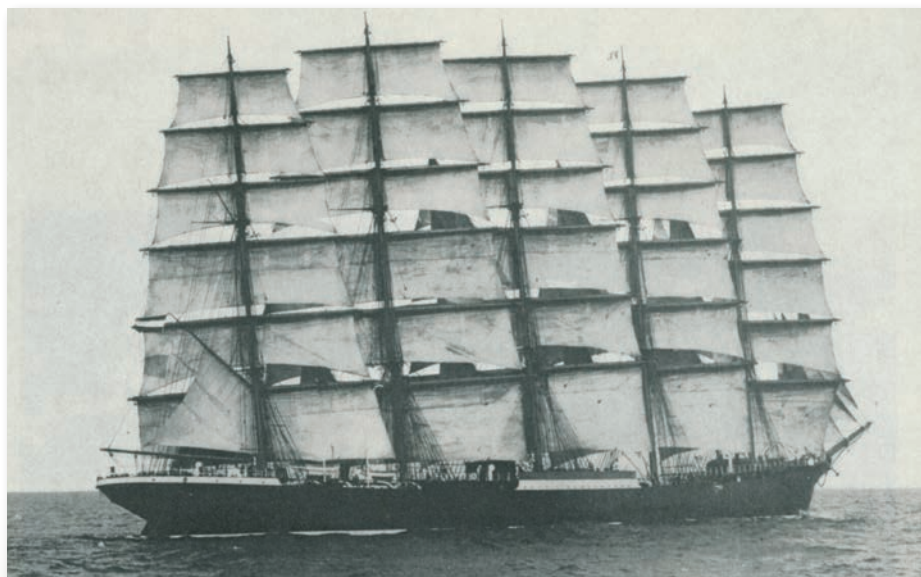
Small-scale sail

Neville Wade reveals the rich rewards gained from setting himself a 'little' challenge...

This story starts with an approximately 1296mm long, approximately 1:70 scale, model of a four-masted barquentine, based on the sister ships *Mozart* and *Beethoven* I built some years ago. Having already built two earlier models at similar scales, she sailed predictably well. What I hadn't envisaged during her construction, however, was how inspirational and horizon broadening she would prove to be going forward...

Back then, I had a modelling mentor, a friend who had built models of almost everything, from boats, in wood, to working steam locos, made, of course, from metal. Bob had watched me move on from copying his yachts to building square-riggers and, consequently, decided to make his own four-masted barquentine, so asked to borrow my plans. I was delighted to oblige and looked

ABOVE: Joint inspiration. Nev's 'big' barquentine inspired Bob to build his 'little' barquentine, which in turn convinced Nev that sailing 1:116 scale models was indeed possible. Both vessels are seen here 'beating' on opposite tacks.



ABOVE: Preussen on her round the world trip in 1908. 5000Ts of ship, and 8000Ts of cargo, driven by the wind alone!
BELOW: Potosi, going well in a gale, with royals and upper topgallants furled. On some reproductions of this picture a hand-written annotation "Lat 50.04S, Long 6215W, 8/3/13, outward bound" appears. That position places her to the north-west of the Falklands. This is a rare 'action' image for the time, and well shows Potosi's long, lean hull.





Shot in Valparaíso, this may be the only photograph of these two magnificent ships (Potosi and Preussen) together, and clearly portrays their extreme lengths.

forward to having him as a model sailing ship companion. He explained, however, that 1296mms would be too big for him to manage and that he intended to instead build his model at around 780mm long, to a scale of 1:116. I have to say I was somewhat dubious, but he was my mentor, not the other way round. Anyway, to cut a long story short, he did build his own small-scale version, which, when launched on the pond in Millhouses Park, Sheffield, performed admirably.

All of this set me thinking...

Giants under sail

By the end of the 19th Century, it was already apparent that the optimum size and type for a deep-water sailing ship was a four-masted barque of about 3000Ts, to carry about 5000Ts of cargo, give or take. The British, with their lead in steamship technology had all but abandoned sail, but the Germans were still in the business of making sailing ships and sailing them remarkably well. The company of F. Laeisz of Hamburg was a particularly fine exponent of the sailing ship. It had established a competent organisation on the west coast of South America, to which it shipped general cargo from Germany, and brought back nitrates, for use as fertiliser, and for explosives. In the days before the Panama Canal, the only way to do this was by way of Cape Horn, in a sailing ship, so Laeisz decided to build a larger vessel – a five-masted barque, of around 4000Ts, with a capacity of around 6000Ts – in the hope of making gains in both speed of passage and profit.

The result was *Potosi* – arguably, the most successful sailing ship ever made. Launched in 1895, she was 366ft long and rigged as a five-masted barque (first four masts square rigged, the aftermost mast fore and aft rig). In the years before World War I she went back and forth, from Hamburg to the Pacific ports of Chile and Peru, with almost metronomic regularity, making almost two round trips per year; remember, this was fully loaded in both directions, out and back, round Cape Horn on each passage, powered only by the wind. The outbreak of war caught her in Valparaíso, where she then had to remain, as a return to European waters would undoubtedly have led to her sinking by the Royal Navy. There she stayed until 1924, when a Chilean company re-fitted her, and sent her back to Hamburg, loaded with nitrates. She left for the return to Chile, loaded with coal, from Cardiff, in July 1925, and was next seen off the Argentine coast, on fire. She was beached and attempts

“Full riggers are not as easy to handle as barques, and this one was enormous”

were made to save her, but there were explosions aboard, masts came down, and then she re-floated herself. Posing a danger to shipping, she was, therefore, sunk by an Argentine cruiser.

During *Potosi*'s successful career, in 1902, the Laeisz company went one step further and built a five-masted full rigged ship (square rigged on all five masts), the only such vessel ever built. She was called *Preussen*. It's thought that jingoism played a part in the decision to build her with this rig, and it's commonly accepted that the Kaiser himself took an interest in the ship, and her conception. Full riggers are not as easy to handle as barques, and this one was enormous. She was 408ft long, weighed 5000Ts, and could carry 8000Ts of cargo. In the event she proved to be a fast ship but could be awkward to handle. Also, she rarely carried a full cargo. Her career was spent in the nitrate trade, apart from one round the world voyage (Hamburg-New York-Yokohama-Chile-Hamburg) in 1908/9. Sadly, she met her fate in 1910 when she struck a British

cross-Channel steamer, which had misjudged her (high) speed and tried to cross her bows. With her bowsprit damaged from hitting the steamer, she became unmanageable and, when bad weather set in, she was wrecked under the White Cliffs of Dover.

Calculation

You'll probably be way ahead of me now. Inspired by Bob's success with his barquentine at 1:116 scale, I began doing the calculations for *Potosi*, working on the basis of having a beam of 120mm, in order to afford the sail arm servos enough travel to operate the yards properly. At 1:116 scale, the result was a hull 960mm from the stern rail to the top of the bow. Having made my own sketches from information available on the internet, I then had these drawn up at full size for the model. I cut some paper silhouettes at full size to represent the servos which would have to go below deck so that I could assess whether or not there would be enough room for them. After satisfying myself that I could indeed squeeze them in, I made a start, despite worries over the final displacement of the model. To explain, I use removable sailing keels on these models, so, if you think about



The sheer size of *Preussen* becomes evident from this picture. In the heavy seas of Cape Horn, that bowsprit end could be under water.



The insides of Nev's model of Potosi, after the retro-fit of HiTec sail arms. The one on the right controls the foremast yards, the one on the left, those on the main mast (in the centre of the picture). The sails on the left are those of the middle (third) mast.

it, the hull mustn't displace so much water that I cannot fit a keel. If that were to happen, and I couldn't fit one, the model wouldn't have sufficient stability to sail. I'm sure cleverer people than me could have calculated all this, but I just went ahead, and hoped for the best. In the event, the model needed a 2.07 kg keel, and sailed fine.

Extracts from the build

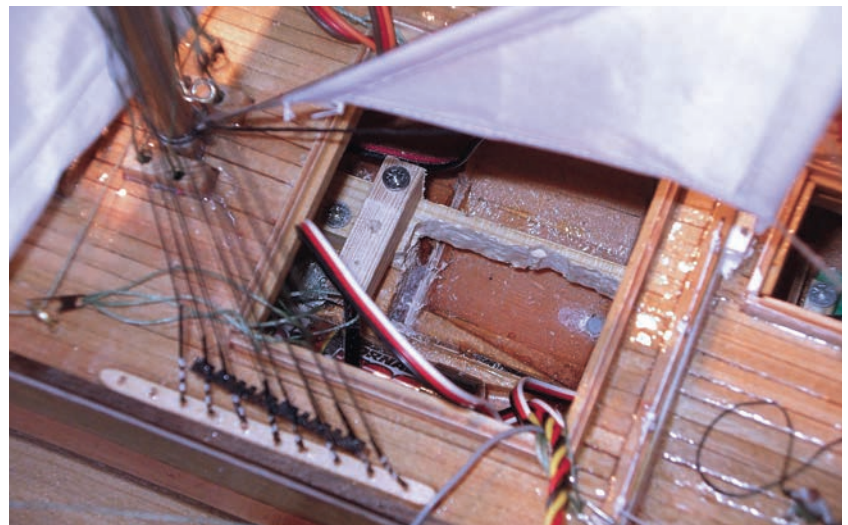
My yards are pulled round, from tack to tack, using servos with centrally pivoted arms, so that, as one side pulls in its braces, the other side lets out the ones on that side. Normally I use HiTec sail arms on my square-riggers, but my initial choice for this model was some 'normal' sized, high torque servos, which

“Having made it this far, I began to relax, oblivious to the series of crises that was to follow...”

would fit in more easily – more on this later! I had to decide on how to control so many square-rigged masts, and, in the end, settled on three stick control of the yards, with a channel each for the foremast, and the main mast, and the third channel for the middle and mizzen. The fore and aft sails on the jigger mast were controlled by one of the toggle switches of my six-channel set up, with the rudder on the last stick. Up until this model, I'd used 40MHz radio control; this time I chose to use 2.4GHz for the first time – more on this later, too.

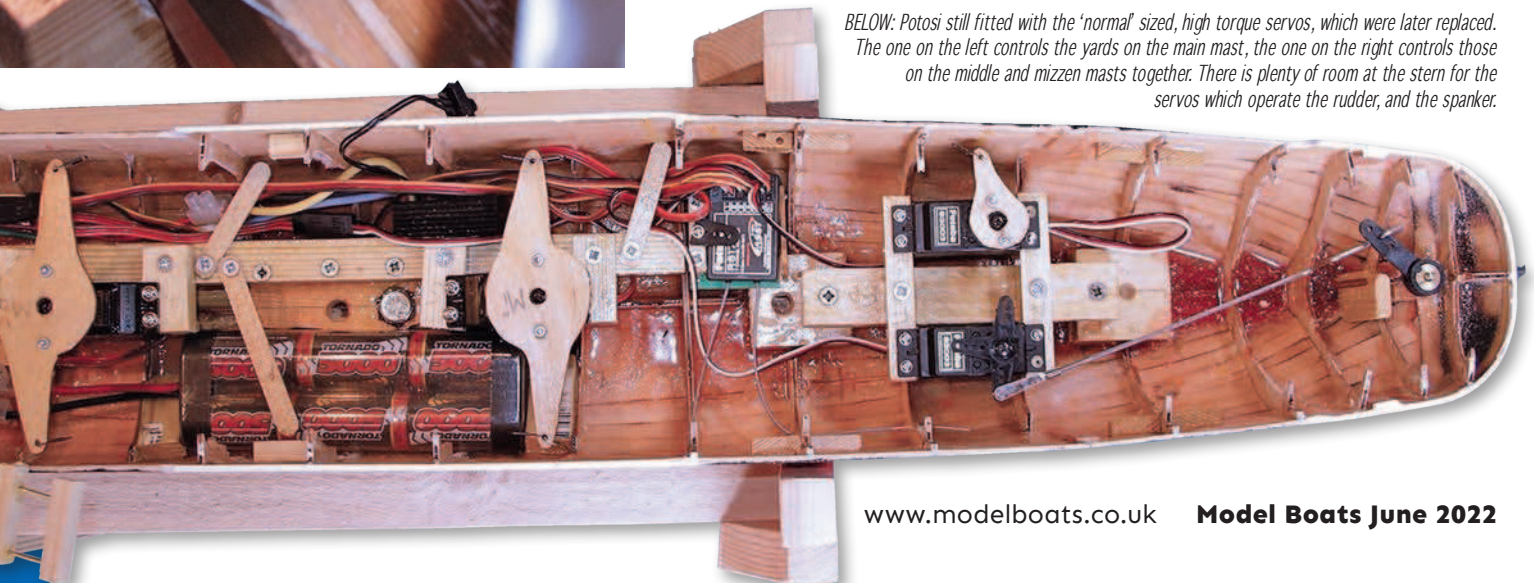
Plank on frame building, fitting the electrics, fitting the decks, masts, etc, all proceeded as you might expect. My wife made the tiny sails, which was, apparently, much more difficult than making larger ones.

Finally, the model was complete, and, knowing the real ship could be a handful, off I went to try my hand at sailing my own Potosi. It was a welcome anti-climax. The model could cope with wind up to 15mph on the small pond at Millhouses Park and proved as manoeuvrable as my other boats. Having made it this far, I began to relax, oblivious to the series of crises that was to follow...



LEFT: The original mounting point for one of the high torque servos. ABOVE: A similar mounting point, after being cut away, to allow fitting of a HiTec sail arm. The amount of destruction is painfully obvious, as is the lack of access!

BELOW: Potosi still fitted with the 'normal' sized, high torque servos, which were later replaced. The one on the left controls the yards on the main mast, the one on the right controls those on the middle and mizzen masts together. There is plenty of room at the stern for the servos which operate the rudder, and the spanker.





ABOVE: Potosi on the water, beating on the port tack.



Without going into a lengthy explanation, the change to 2.4GHz control proved more complicated than I'd hoped for one such as me, with no electrical gifts. I ended up, after taking some excellent advice, fitting a UBEC, a kind of voltage regulator, into my circuits, to cure the tendency of channel 3 to go into a 'failsafe' mode at critical sailing moments. Apparently, this is a legacy of the model aeroplane heritage of our radio systems.

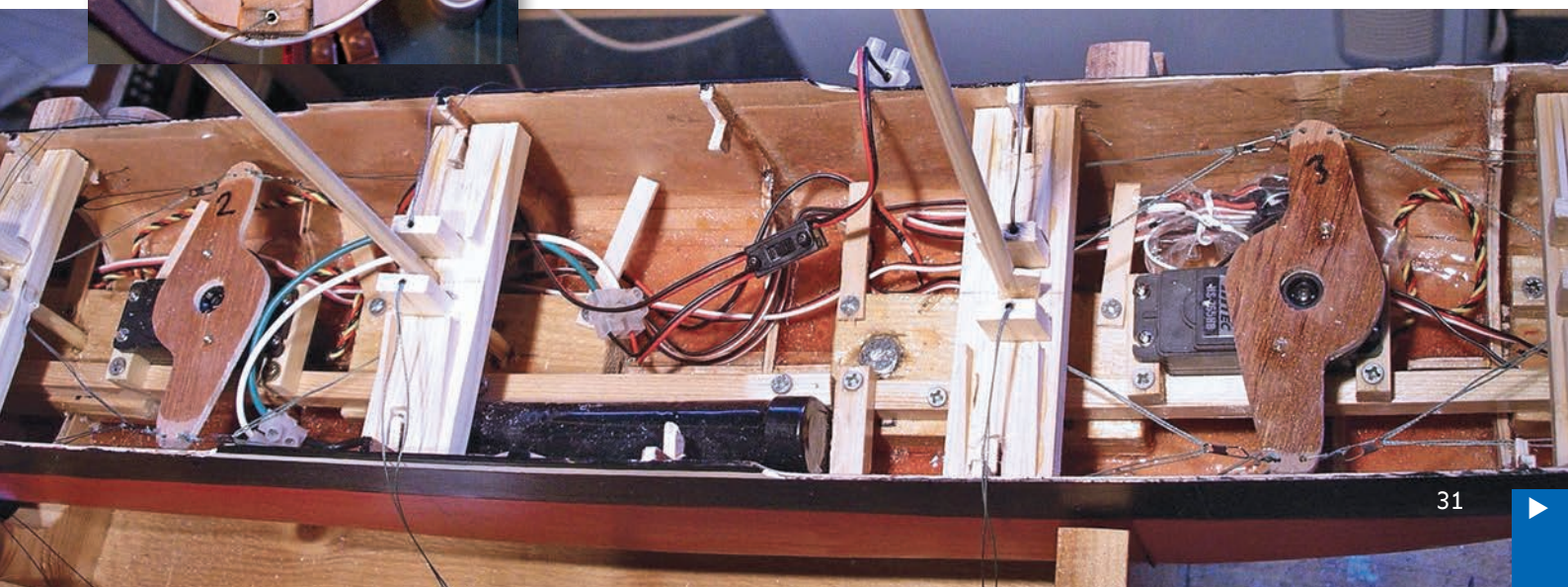
I also encountered problems with the high torque, 'normal' sized servos. For whatever reason, two of them burned out, leaving me bereft of confidence in them. I thought long and hard about my next move, but finally decided to fit HiTec sail arms instead. They are quite a lot bigger and would not fit as a straight swap with the original ones. My only alternative was to use my Dremel, to cut and carve the wooden mount for my

servos, to such a degree that I could fit in the larger ones. It was a worrying job, making the wood much weaker, as well as a difficult one, trying to do it through hatches that were deliberately only just big enough to work through. I got there in the end and, so far, nothing has broken, and full control of the yards has been achieved.

Preussen, wrinkles here too

Having proved the practicality of this scale on Potosi, it was logical that I should return to these fine ships and, several years later, I did just that, building Preussen. The larger ship meant that I could have a little more room inside, which is obviously a good thing, but the extra square-rigged mast brought some different complication. On this model, I again had individual control of the yards on the

LEFT: On Preussen there is very little room for the servos which control the rudder and spanker. BELOW: Preussen's masts are, left to right, jigger (5), mizzen (4) and middle (3); the main mast (2) is just out of the picture, to the right. The two sail arms control the yards on the mizzen and jigger, and the main and middle masts. If you look closely, you'll see sets of braces going fore and aft, from each sail arm.





ABOVE: *Potosi* sailing well. With not much in the way of waves, in 1:116 scale she is no problem to sail. BELOW: On the other hand, these waves make for a 'big sea' at this scale. They're not unrealistic, though, as the real ship would often have taken green water over the side – but there is a limit for a model, as there was for the real thing.



“Tacking one of these models is the acid test...”

foremast but, with four more square-rigged masts, I had to use two of the remaining three sticks to control the four masts in two pairs. One stick controls the main (2) and middle (3), and the other controls the mizzen (4) and jigger (5). I have controlled two masts worth of yards from one stick before, including on *Potosi*, but two lots of two was a new departure. The last remaining stick obviously controls the rudder.

This set-up of sail arms meant that the two 'normal' sized servos that I used for the spanker (the small fore and aft sail on the fifth mast), and the rudder, had to be squeezed into the very small space aft of the aftermost mast. To this day (five years on) I'm still not really sure if I could get either of them out, if I had to.

Sailing

As already mentioned, *Potosi* acquitted herself very well on the small pond at Millhouses Park. I discovered she will come to windward in the same way as any of my other square-riggers, coming, just about, to approximately 65-degrees to the wind. Tacking one of these models is the acid test and, to be honest, it's more difficult with a longer, slimmer ship, such as *Potosi*. The original's great waterline length made her quick, and it's the same with the model, but that same extra length means it's more difficult to turn into the wind in order to tack.

BELOW: *Potosi* from the lee side. She was a vessel which still looked as if she'd be manageable, even with her large rig and great length.





ABOVE: Potosi sailing hard, on the port tack. When isn't much of a swell, this is perfectly manageable. BELOW: In real terms there's a 30ft 'sea' running here, so the 1:116 scale Potosi is nearing her limit.



BELOW: Preussen going well on the starboard tack, on a dull, windy day, by the North Sea, at Tynemouth. The water had been blown flat by this gust, and the model was roaring along!





ABOVE: Nev's model of Preussen on the water. Even at 1:116 scale she's an imposing sight. BELOW: Preussen going about by tacking across the wind. The foremast yards are braced with the sails aback, pushing round the bow. The rest of the sails are already on the port tack, ready to give the model way again.





Preussen beating on the port tack. These small-scale models are not the best sailers in Nev's 'fleet', but they do make for a fascinating and challenging sailing experience.

Having said that, it is possible, I just have to be that bit more precise.

Being that bit bigger, *Preussen* needed a slightly heavier keel, at 2.87kgs. All the same characteristics were apparent with this model, as with *Potosi*. The long lean hull was

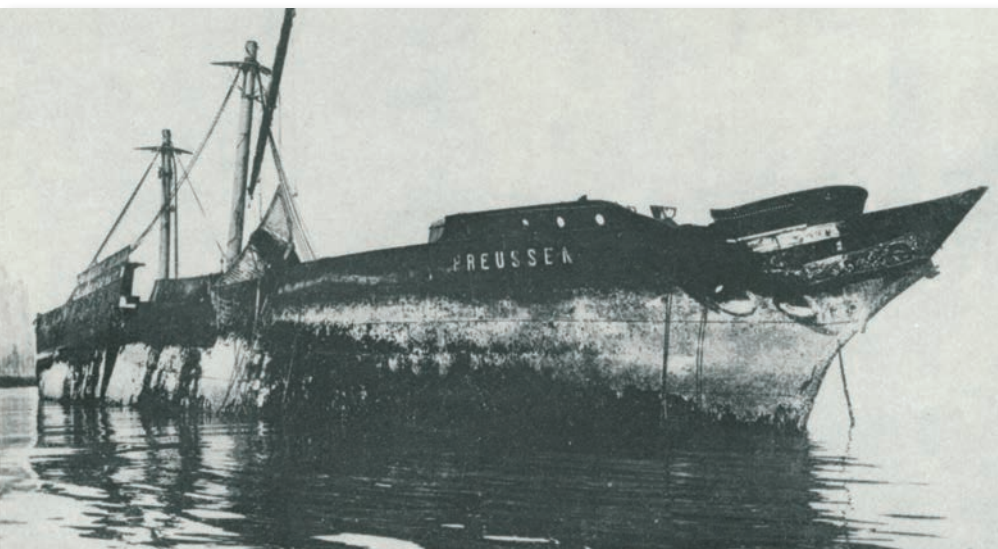
quick through the water, but more difficult to turn to windward than a more conventional windjammer, and *Preussen* requires a bit more care even than *Potosi*, an effect which was noted, on the real ships, at the time, by people familiar with both vessels.

For various reasons, around the time of the building of the model *Preussen*, I began to sail on the pond in the Pavilion Gardens in Buxton. The enclosed nature of this pond makes for variable wind direction, which made sailing all my square-riggers more difficult, particularly these two.

Finally, we moved house to the north of Newcastle, and I now sail regularly on the large, open lake at Tynemouth. Here there is good, steady wind, just right for a model windjammer, but also large (scale) waves. So now, besides watching my chances for tacking, I have to be careful not to sail in too big a 'sea' with these models.

Little gems

All in all, these small-scale sailing ships have been a revelation, to build, and to sail, and it's still a very great pleasure to have just an inkling of what these giants must have looked like in their prime. ●

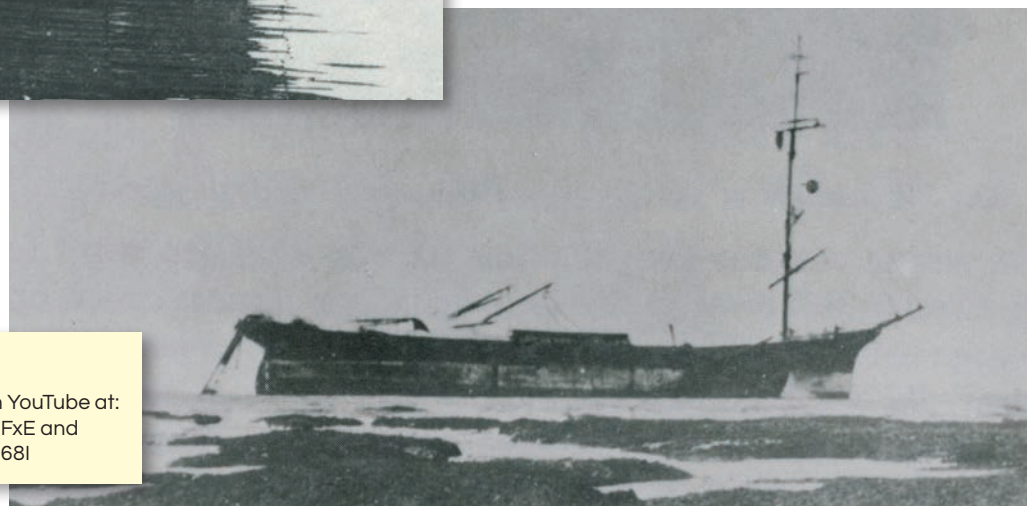


ABOVE: Preussen several years after going aground under the White Cliffs. She took a long time to finally disappear, and her bones were still visible at low tide into the 1970s.

RIGHT: Potosi beached on the Argentine coast in 1925. When this shot was taken her masts had already gone, and her days were numbered.

Armchair viewing

You can see *Preussen* on the lake at Buxton on YouTube at: <https://www.youtube.com/watch?v=Mubrv9HIFxE> and https://www.youtube.com/watch?v=_18MfMOI68I





The Keil Kraft
EeZeBilt Curlew boat kit.

Eddie's Little Babes

Dave Wiggins recalls how Keil Kraft catered for youngsters and newcomers to the hobby

When it comes to craft-based hobbies, including model boat building, we all have to start somewhere – and preferably, while we're still 'testing the water', without having to spend a small fortune. This isn't something new and even back in the day the big British model concerns, such as Ripmax, Veron and Keil Kraft, realised they needed to include within their extensive ranges of goods some simpler models, offered at low (or at least affordable) prices in order to tempt 'pocket money' spending youngsters (or their Christmas and birthday

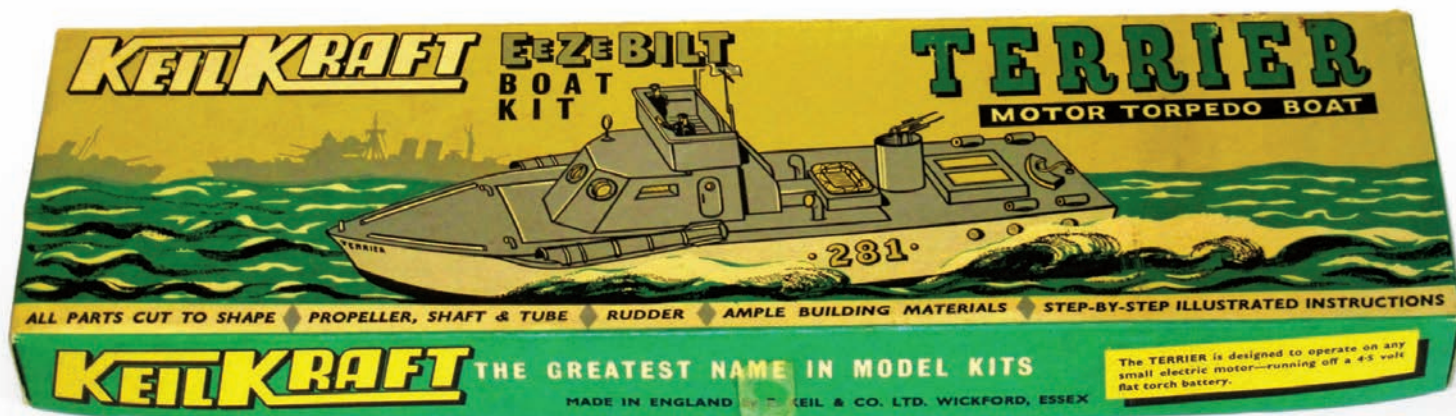
'Perhaps surprisingly, there were just three starter boats in the Keil Kraft EeZeBilt line, of which, in my opinion, the pretty little Curlew cabin cruiser (or fishing launch, as K/K sometimes called it) is, by some way, the pick of the trio'

gift buying parents!), alongside the higher cost bits of kit, such as the glow-plug (or diesel) engines featured last month and the expensive radio gear aimed at 'serious' adult enthusiasts. And Eddie Keil's very smallest model kits served that purpose for boat-inclined youngsters very nicely indeed.

The Curlew kit

Perhaps surprisingly, there were just three such starter boats in the Keil Kraft EeZeBilt line, of which, in my opinion, the pretty little Curlew cabin cruiser (or fishing launch, as K/K sometimes called it) is, by some way, the pick of the trio. Whoever designed the other two clearly didn't waste too much of their drawing board time on good looks, but the Curlew makes up into an attractive little boat if given a bit of time in careful assembly and finishing. Even the box top art is well worth displaying and some way ahead of that on the other two offerings. As to rarity, I've found that a Curlew is not an especially easy kit to find; it took me quite a while to obtain mine.

Be aware that none of these tiny boats are really suitable for pond use (safe on a swimming pool maybe, but not on a lake), and my bet is that, most probably, of those that



One of Curlew's two sisters: the very popular in its day Terrier MTB.



Perhaps the biggest seller of the three baby kits was the Otter tugboat.



were successfully completed many spent their little lives as a decoration on a small boy's bedroom mantelpiece – or sunk on the bottom of a pond somewhere because its owner was reckless enough to decide to go out boating! However, a suitable electric motor was offered in the Keil Kraft range, this being the Japanese Kako Size 0 (Zero) motor illustrated here, and Keil Kraft clearly did intend the model to be operated or it wouldn't have included hardware to that effect.

When I say that Eddie Keil obviously designed these tiny boats to be sailed, I do, of course, mean as free runners; there is absolutely no way that any 1960s' radio could have been shoehorned into his EeZeBilts – even one of the larger ones – and I expect that any young boy c.1960 would have been excited enough to see his creation moving in a stately circle once released and to recover it undamaged afterwards. Nowadays one ought to be do-able as an R/C model (especially one of the bigger EeZeBilts I suggest below) if an operation model is desired.

The Otter and Terrier

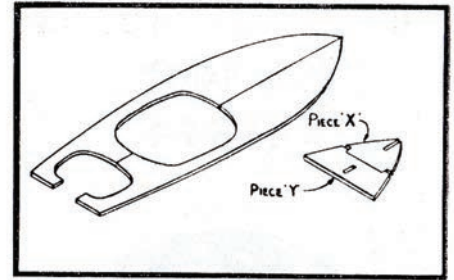
Keil Kraft's Otter tugboat was representative, in a very broad sense, of a Thames harbour diesel tug, like many of those in the Sun fleet I watched at Tilbury or Gravesend landing stages on our little family trips over to Kent back in the 1960s. From the number of these tug kits that regularly pop up on internet sites even today, my guess is that many more of these were purchased than of the other two models put together, and finding one is not all that difficult, given a little bit of patience.

Certainly, even now, model tug kits retain a lot of popularity – though they have never been my 'thing'. The Otter is a simple enough build, and my guess is that many of these kits were successfully launched.

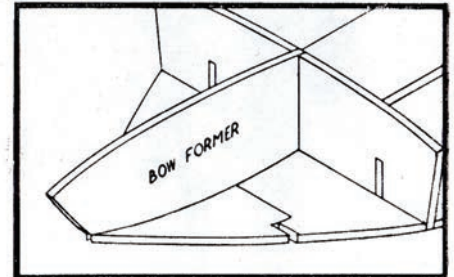
The last of the 'tiny' K/K trio is the Terrier' motor torpedo boat. Again, the appeal of any warship to a young boy is easy enough to comprehend and quite a lot of these were obviously sold. Does it look much like an MTB, though, I ask you? Not very, in my own humble opinion, but it does have twin torpedo tubes and a gun turret, which would have sold it, I'm sure! When you look both at this and at the bigger and much more expensive Aerokits PT Boat, at 40-inches in length, (also offered in the KK Handbook), one has the distinct impression that the designers of both favoured American practice; a bit of extra 'glamour' was the idea, one suspects.



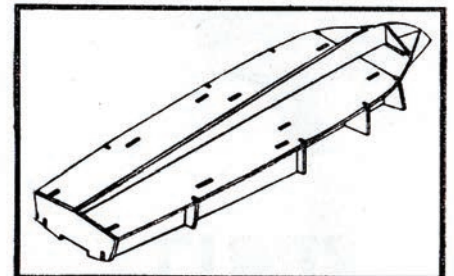
The very smallest KAKO motor was well suited to all three of the smallest boats.



4. Join the two deck halves, also pieces X & Y pinning to a flat surface to set.



5. Cement the bow former and the piece X-Y assembly to bulkhead A.



6. Add the transom to the rear and cement the keel and keel brace in position.

ABOVE: All the EeZeBilts included a simple leaflet that served as building instructions. No plan was required.

BELOW: The 1961 Keil Kraft 'handbook' lists all of Eddie Keil's products, including EeZeBilt kits both aero and marine.



Atlantic crossing

It will be an American offering – in the form of an interesting mid-1970s' R/C set – that we'll be looking at next, so tune in for another instalment of Memory Lane in the August issue... ●

model Boats SUBSCRIPTION ORDER FORM

DIRECT DEBIT SUBSCRIPTIONS (UK ONLY)

Yes, I would like to subscribe to **Model Boats**

☐ Print + Digital: £14.75 quarterly

☐ Print Subscription: £12.50 quarterly

YOUR DETAILS MUST BE COMPLETED

Mr/Mrs/Miss/Ms.....Initial.....Surname.....

Address.....

Postcode.....Country.....

Tel.....Mobile.....

Email.....D.O.B.....

I WOULD LIKE TO SEND A GIFT TO:

Mr/Mrs/Miss/Ms.....Initial.....Surname.....

Address.....

Postcode.....Country.....

INSTRUCTIONS TO YOUR BANK/BUILDING SOCIETY

Originator's reference 422562



Name of bank.....

Address of bank.....

.....Postcode.....

Account holder.....

Signature.....Date.....

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

Instructions to your bank or building society: Please pay MyTimeMedia Ltd. Direct Debits from the account detailed in this instruction subject to the safeguards assured by the Direct Debit Guarantee. I understand that this instruction may remain with MyTimeMedia Ltd and if so, details will be passed electronically to my bank/building society.

Reference Number (official use only).....

Please note that banks and building societies may not accept Direct Debit instructions from some types of account.

CARD PAYMENTS & OVERSEAS

Yes, I would like to subscribe to **Model Boats**, for 1 year with a one-off payment

UK ONLY:

☐ Print + Digital: £60.99 ☐ Print: £51.99

EUROPE & ROW:

☐ EU Print + Digital: £77.99 ☐ EU Print: £68.99

☐ ROW Print + Digital: £84.99 ☐ ROW Print: £75.99

PAYMENT DETAILS

☐ Postal Order/Cheque ☐ Visa/MasterCard ☐ Maestro

Please make cheques payable to MyTimeMedia Ltd and write code MB2021 on the back

Cardholder's name.....

Card no:.....(Maestro)

Valid from.....Expiry date.....Maestro issue no.....

Signature.....Date.....

TERMS & CONDITIONS: Offer ends 31 December 2022. MyTime Media collects your data so that we can fulfil your subscription. We may also, from time to time, send you details of MyTime Media offers, events and competitions, but you always have a choice and can opt out by emailing us at unsubscribe@modelboats.co.uk. Please select here if you are happy to receive such offers by email ☐ by post ☐ by phone ☐. We do not share or sell your data with/to third parties. Details you share with us will be managed as outlined in our Privacy Policy here www.mytimemedia.co.uk/privacy-policy. Issue frequency is subject to change, current annual term is 12 issues.

POST THIS FORM TO:
MODEL BOATS SUBSCRIPTIONS, MYTIMEMEDIA LTD,
3 QUEENSBRIDGE, THE LAKES, NORTHAMPTON, NN4 7BF

Please visit www.mytimemedia.co.uk/terms for full terms & conditions

CODE MB2022

**HURRY
OFFER
ENDS
SOON**



PRINT + DIGITAL SUBSCRIPTION

- 1 years worth of issues **delivered to your door**
- Great savings **on the shop price**
- **Download** each new issue to your device
- A **discount** on your digital subscription
- Access your subscription on **multiple devices**



PRINT SUBSCRIPTION

- 1 years worth of issues **delivered to your door**
- Great savings **on the shop price**
- Never miss an issue

SUBSCRIBE TODAY

DIGITAL
SUBSCRIPTIONS
AVAILABLE ONLINE!

Hurry! Subscribe now and make huge savings!

- Now in its 66th year of continuous publication, Model Boats remains the world's best-selling monthly consumer magazine of its kind.

- Packed with content that encompasses all aspects of the hobby, whether your passion lies in it static models, radio controlled scale, fast electric or internal combustion engine models, steam driven craft or model yachts, we guarantee that amongst all the news, reviews and fascinating full length features you'll find something that floats your boat!

- Reader input is actively encouraged. The letters pages are dedicated to views aired and information shared, while the readers' models section serves as a launch party for all those wishing to showcase their latest successfully completed projects.

- What's more, every other issue includes a free model plan, supported by an illustrated feature on the vessel that inspired it and how to achieve the best results from your build.

So, subscribe today and broaden your horizons!



TERMS & CONDITIONS: Offer ends 31 December 2022 *This digital discount is only available when you subscribe to the 'Print + Digital' package. You can still get a great discount on the digital package, please visit the URL stated below for more information. Please see www.mytimemedia.co.uk/terms for full terms & conditions.

SUBSCRIBE SECURELY ONLINE

 <http://mb.secureorder.co.uk/MODB/MB2022>

CALL OUR ORDER LINE

 0344 243 9023

Lines open Mon - Fri - 8.00am - 8.00pm GMT & Sat - 9.30am - 3.30pm GMT.

Quote ref: MB2022

Calls are charged at the same rate as standard UK landlines and are included as part of any inclusive or free minutes allowances. There are no additional charges with this number. Overseas calls will cost more.

HMAS Onslow alongside the destroyer HMAS Vampire at the Australian National Maritime Museum, Sydney.



Oberons Down Under

John Parker recounts the history of this interesting and successful submarine class and the opportunities it presents as a subject for fellow modellers

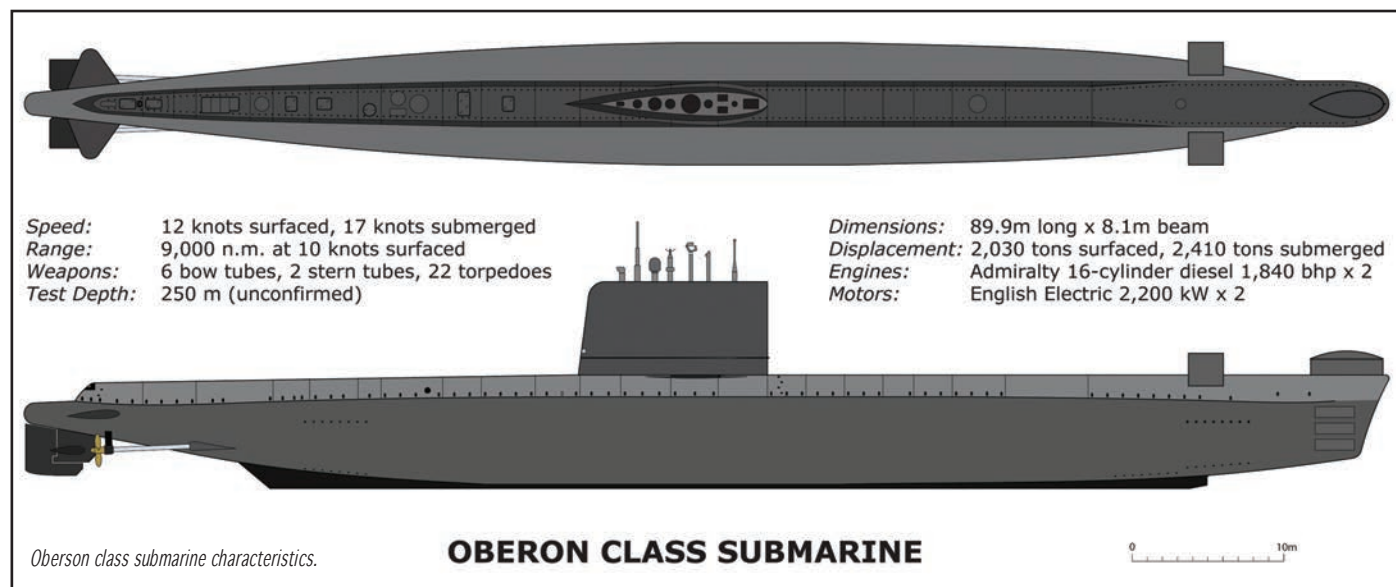
Australia's association with submarines has not always been a happy one. There was the early loss of AE1 and AE2 in World War I and short-lived attempts to operate J-Class and O-Class submarines at times of great financial restraint in the inter-war years. More recently, the Australian designed Collins Class submarine suffered a protracted and difficult development program that attracted much negative comment from the media, and the cancellation of the French Barracuda contract in favour of the AUKUS UK/USA agreement is causing further controversy. But the decision

in 1963 to order the Oberon class submarine proved to be a sound one and the boat served the country well from 1967 to 2000.

Background

The Royal Navy (RN) maintained the 4th Submarine Flotilla consisting of T-Class and A-Class submarines in Australian waters throughout 1949-1969 to provide realistic anti-submarine training. The arrangement was on a cost-sharing basis, the Royal Australian Navy (RAN) having no submarines of its own at

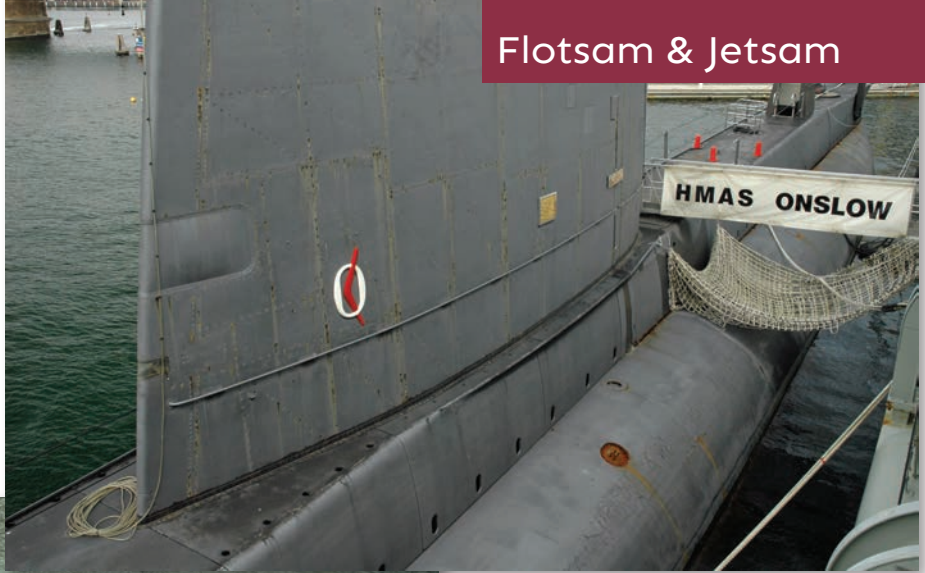
the time. With the contraction of its overseas commitments and a desire to save costs, the UK then encouraged Australia to obtain its own submarines and the Australian Naval Board subsequently placed an order for four Oberon class submarines in 1963, later increased to six. A study had shown that the cost of buying the boats from the UK would be far less than building them in Australia, though the benefit to local industry would naturally be less. The order provided welcome work for Scott's Shipbuilding yard in Greenock, Scotland, where all six boats were built.



“Like most post-war conventionally powered submarines, its design was heavily influenced by Germany’s Type XXI of 1945”

RIGHT: The fin of HMAS Onslow.

BELOW: Modeller’s detail – the stern of HMAS Onslow.



Design

Britain’s first new-build submarine since the war was the Porpoise class (of which eight were built between 1955-1958) and it was from this that the Oberon class was developed. Externally identical, the Oberon had a greater diving depth due to the QT28 steel used in the hull and had re-arranged interior fittings. Like most post-war conventionally powered submarines, its design was heavily influenced by Germany’s Type XXI of 1945 and emphasised underwater performance at the expense of surface travel, having a much greater battery capacity and a reduced drag hull with a large, streamlined conning tower or fin equipped with a snorkel that allowed running of the diesel engines underwater. A prominent dome on the bow housed the sonar.

What the Oberon did not have was a ‘teardrop’ hull shape and a single propeller at the hull extremity, a configuration that the American experimental submarine Albacore (see January 2014 issue of Model Boats) was proving to be the optimal shape

The first Australian boat, Oxley, was laid down in 1964, launched in 1965 and entered service in 1967. It was followed into service by Otway (1968), Ovens (1969) and Onslow (1970). The two additional boats (there were originally planned to be four) saw the arrival

of Orion and Otama in 1978; these later boats were fitted with specialist intelligence gathering equipment. HMS Trump, the final RN submarine to be stationed in Australia, was escorted out of Sydney Harbour by HMAS Otway when it returned to the UK in January 1969.

Forward deck with folded hydroplanes.



for underwater travel. This was because of a reluctance to forgo the redundancy provided by twin shafts and propellers and because adopting the revolutionary but still unproven shape would cause major delays in its development. The Oberon thus has a traditional appearance, with a wave-cutter bow shape.

One area in which it scored was through the great efforts made to reduce its noise signature by mounting the machinery on flexibly supported rafts that reduced transmission of noise to the outer hull. It was generally credited with being the quietest and amongst the most effective of its generation. Another pioneering feature was the extensive use of fibreglass for the deck casing and fin. The Oberon proved a major export success for Britain, with six built for Australia, two for Chile, three for Canada and three for Brazil adding to the 13 built for the Royal Navy – a total of 27 vessels.



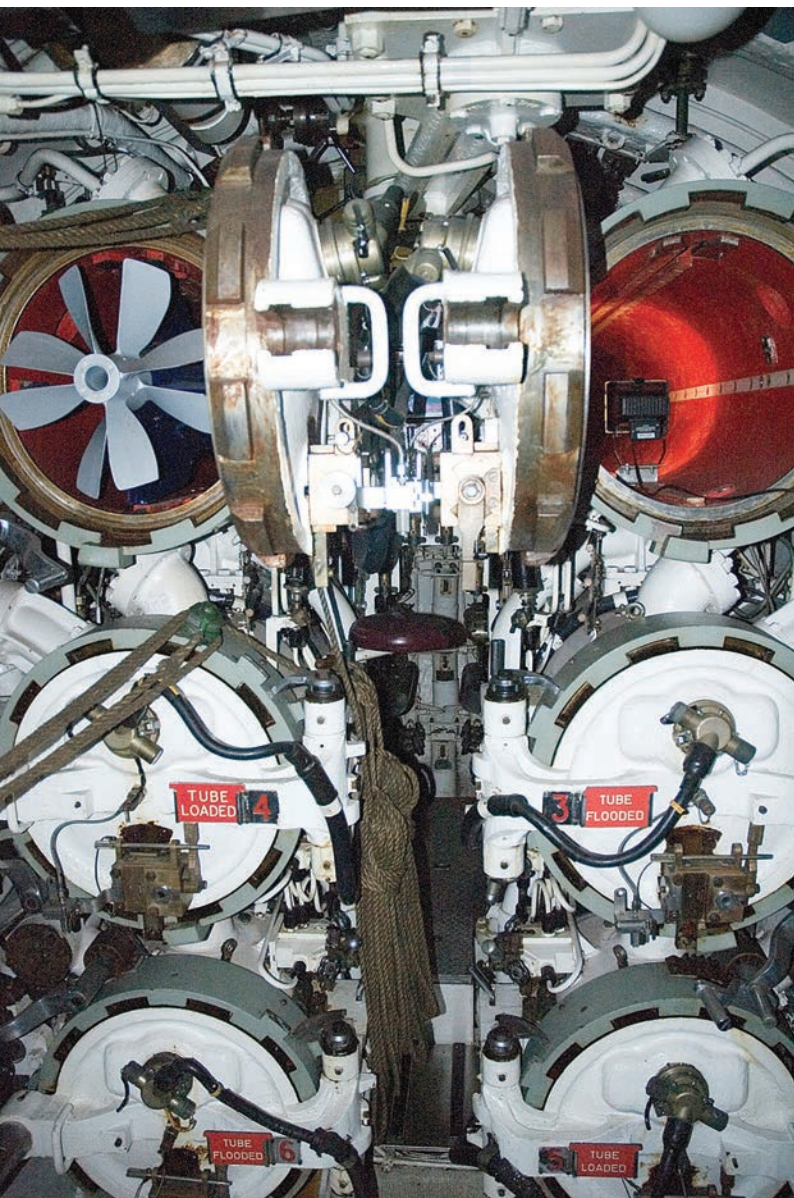


ABOVE: Bow section with post-SWUP sonar dome. BELOW LEFT: Forward torpedo tubes. BELOW RIGHT: Engine room, looking aft.

RAN service

The Oberon class provided a significant boost to Australia's strike force, and it became a formidable anti-submarine and anti-surface vessel, while its excellence in covert operations enabled it to carry out surveillance missions throughout the Southeast Asian region. Possessing the advantage of being quieter than a nuclear-powered submarine (which must always keep its reactor coolant pumps operating), it proved a severe embarrassment to the 'enemy' in joint exercises. A photo taken through the periscope of HMAS Onslow in 1998, for example, shows the stern of the USS Carl Vinson nuclear powered aircraft carrier, proving that the submarine had eluded the USN escorts and manoeuvred into position for a 'kill'.

The submarines were based at the newly commissioned port facility of HMAS Platypus in Sydney Harbour and a slave dock was constructed at Garden Island that enabled



“Refits were required every five years, and each took about a year, at a cost, due to inflation, that was soon more than the original purchase price”

major refits to be carried out, lessening the dependence on the UK for support. The refits were required every five years, and each took about a year, at a cost, due to inflation, that was soon more than the original purchase price.

The limitations of the Oberon's analogue attack system, which had its origins in World War II era mechanical devices, was becoming more apparent by the mid-1970s and it led to an upgrade program known as SWUP (Submarine Weapon Update Program) being implemented on all six vessels in 1977-1985. This provided a new attack sonar in a reshaped bow dome and a digital fire control

system, along with other improvements such as the ability to fire American Mark 48 torpedoes. The Oberon's two stern torpedo tubes were converted to housing improved acoustic countermeasures, while the forward tubes were given the ability to fire the American sub-Harpoon anti-ship missile – HMAS Ovens becoming only the second conventional submarine in the world to fire one in 1985.

By the late 1980s, the Oberons were becoming old and too demanding in terms of maintenance and, with their 64 to 68 crew members, manning requirements. The search began for a replacement, but the success Australia had achieved with the SWUP program ironically led to a degree of over-confidence that has been implicated in the troubled development of the replacement Collins Class. Oxley was the first Oberon to be

decommissioned, in 1992, followed by Otway (1994), Ovens (1995), and Orion (1996). The problems with the Collins Class meant that Onslow and Otama had to soldier on until the end of the decade, Onslow bowing out in March 1999 and Otama in December 2000.

Preservation

A good deal of the Oberon era has survived. Surprising visitors to the Australian inland country town of Holbrook, New South Wales is the fin and deck casing of HMAS Otway sitting atop a concrete hull representation at the Holbrook Submarine Museum.



Two views of the author's own
1:72 scale Oberon model.



*“This submarine was listed
on eBay at one stage, with an
opening price of \$4.9 million but
there were no bidders”*

HMAS Ovens was used as a training boat for a few years but now is on display at the Western Australian Maritime Museum in Perth, while HMAS Onslow resides afloat at Darling Harbour, Sydney, as part of the National Maritime Museum. There are plans to make HMAS Otama a museum boat at Hastings, Victoria, but these have been jeopardised through lack of funding. This submarine was listed on eBay at one stage, with an opening price of \$4.9 million but there were no bidders. It is currently sitting forlornly off the coast at Hastings, Victoria awaiting its fate.

Fancy taking the plunge?

For model makers, a 1:48 scale hull (post SWUP) is sometimes available from APS Models (apsmodels@optusnet.com.au). Drawings of the Canadian Oberon HMCS Ojibwa are listed as available from Vanguard Model Marine in Canada (<https://www.hobcen.com/products/vanguard-plans-her-majestys-canadian-submarine-ojibwa-oberon-class-ssk>). These show planked wooden construction on two sheets at 1:48 scale, resulting in a model around 1,877mm long by 168mm beam. A drawing to 1:96 scale is available from the Naval Historical Society of Australia (<https://www.navyhistory.org.au/shop/hmas-o-class-submarine-post-swup/> ●)

Controlling two shafts

Richard Simpson looks at the numerous options worth considering...

I was recently involved in a conversation with a modeller as regards how to control the two shafts of his model tug. He had a firm idea of where he wanted to end up,

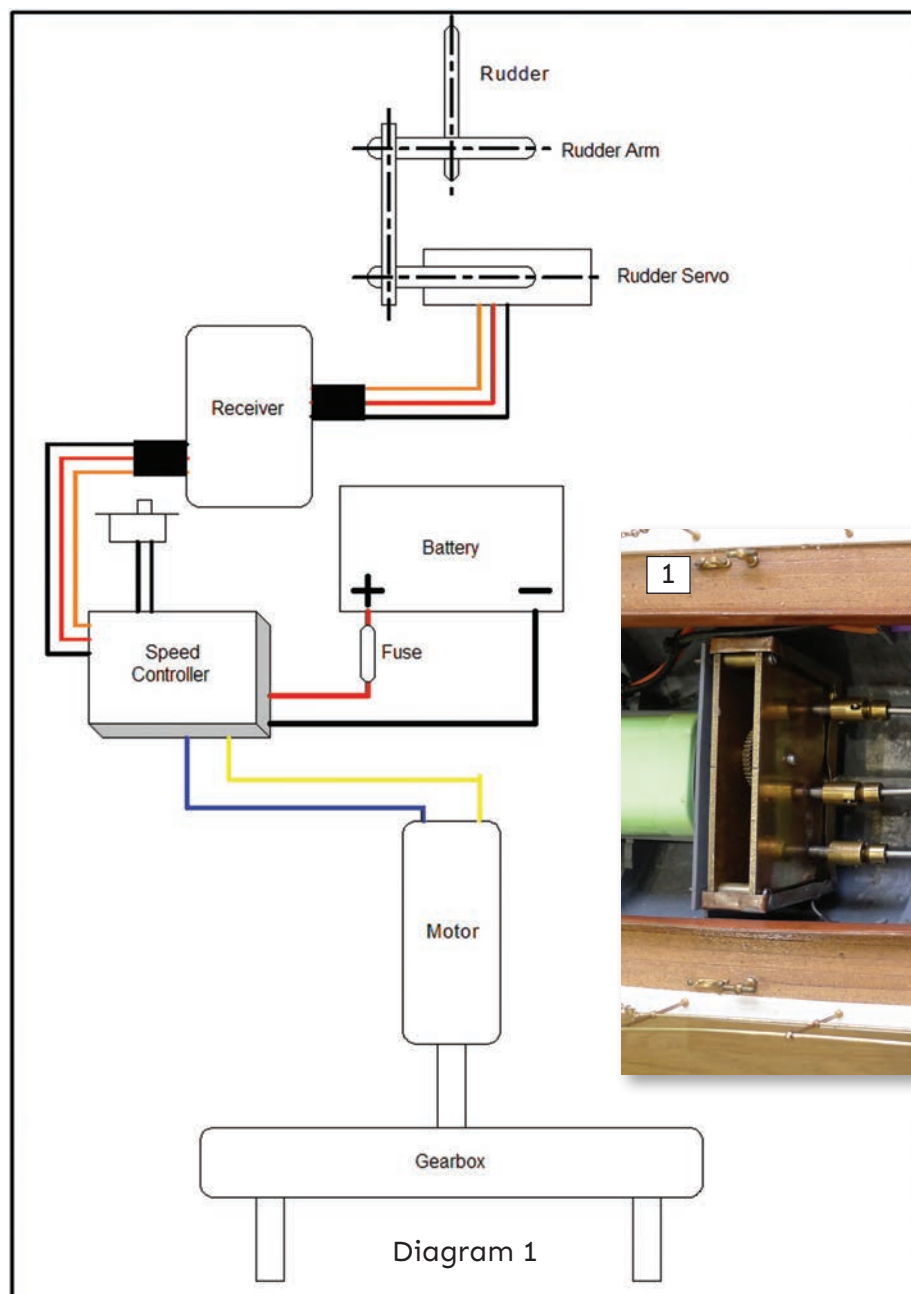
which was a good start, but how to get there seemed to open up many possibilities and the more we considered the alternatives the more I realised that there were quite a number of

“Decisions should be made as regards how you want to control the model before embarking on the installation, so it’s well worth selecting your preferred arrangement based on this”

ways in which it could be done. Consequently, for those considering building a model with two shafts and who haven’t dealt with such an arrangement before, I thought it worth having a look at the options and how they might look in basic layout diagram format. At the end of the day, decisions should be made as regards how you want to control the model before embarking on the installation, so it’s well worth selecting your preferred arrangement based on this. It should also be remembered that a fuse should be fitted on the positive side of the main power battery, irrespective of whatever arrangement is chosen.

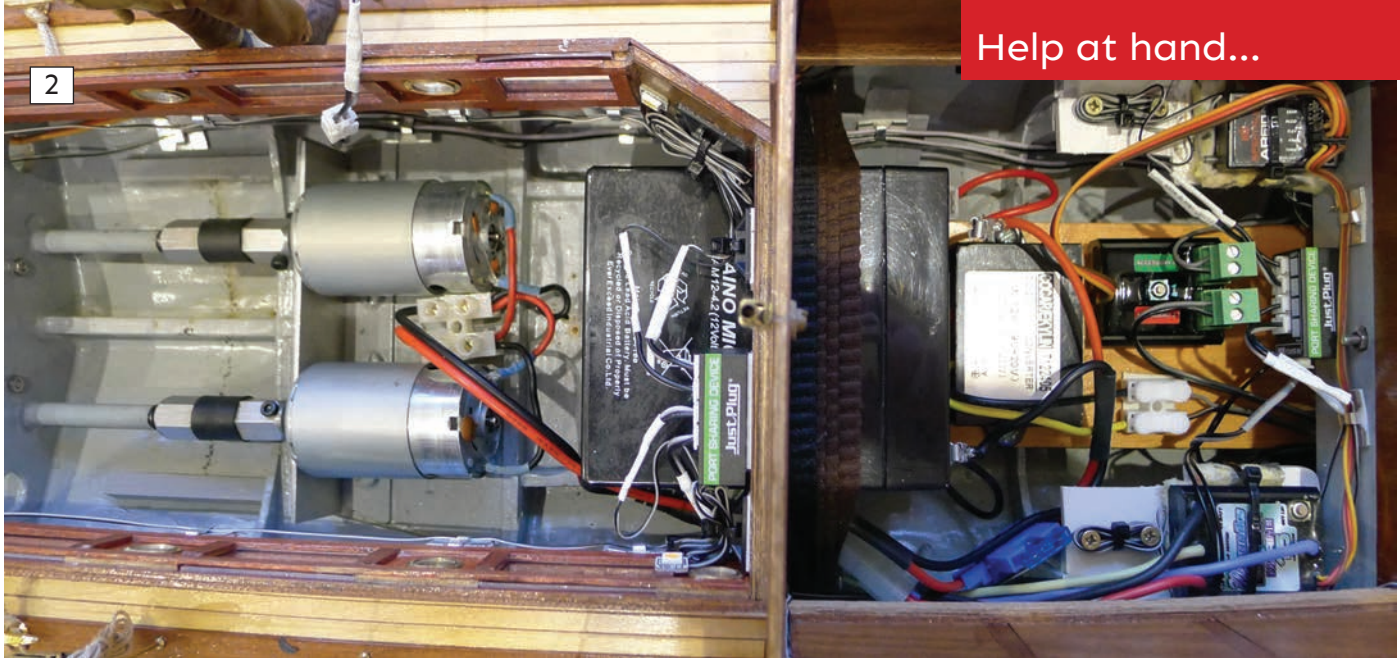
1) Single motor and gearbox

By far the simplest arrangement would be to fit a gearbox or even a belt driven pulley system with two shaft outlets and a single inlet. The motor would obviously be sized to drive the two propellers and motor control would simply be an appropriately sized speed controller, as would be done with any other single motor operation. Both shafts would then operate simultaneously ahead and astern so you could control the model with two proportional channels (see **Diagram 1** and **Photo 1**).



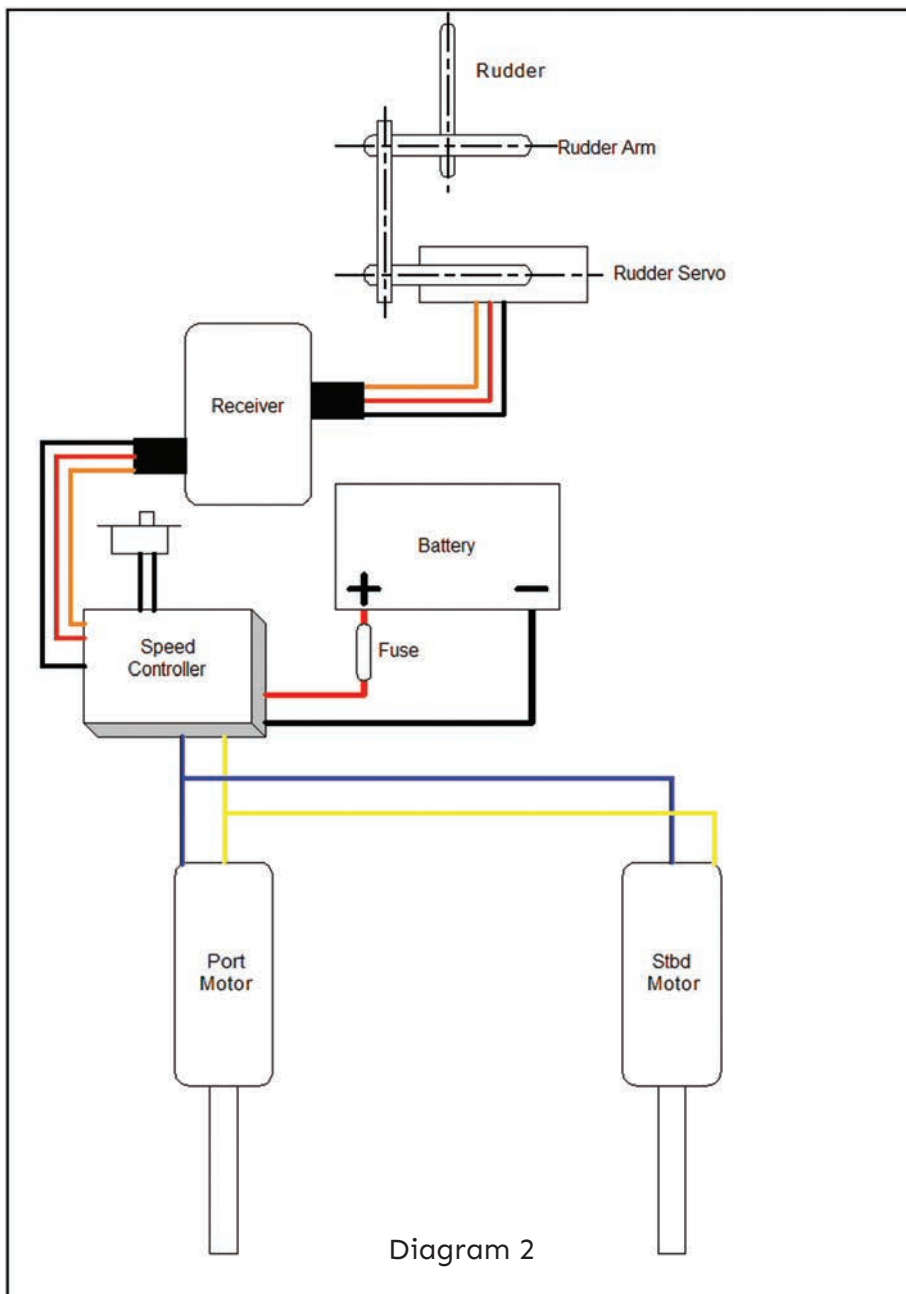
ABOVE: The most basic means of controlling two propellers is by connecting them through a gearbox and simply operating them as if they were a single propeller.

LEFT: A single motor driving the two shafts via a gearbox is as simple as a single shaft set up and fine for someone who wants the easiest of building, setting up and handling.



ABOVE: Still keeping things simple, these two motors are controlled by a single suitably sized speed controller – again, being operated as though the two motors were a single propeller.

BELOW: Using two motors does introduce a degree of redundancy but it could be argued that the single speed controller diminishes this. The operation is as simple as the gearbox set up and does allow for a more flexible modification in the future.



“This removes the need for a gearbox, pulley or chain drive system and gives you a degree of redundancy should, say, one motor fail”

2) Two motors simultaneously controlled with a single speed controller

The next step up the ladder of complexity would be to have two separate motors operated from a single speed controller. This removes the need for a gearbox, pulley or chain drive system and gives you a degree of redundancy should, say, one motor fail. For this arrangement you would need to split the motor supply cables from the speed controller and supply both motors from the single speed controller supply. Again, with this arrangement both shafts would operate simultaneously ahead and astern, so you would only require two proportional channels for main propulsion operation (see **Diagram 2** and **Photo 2**).

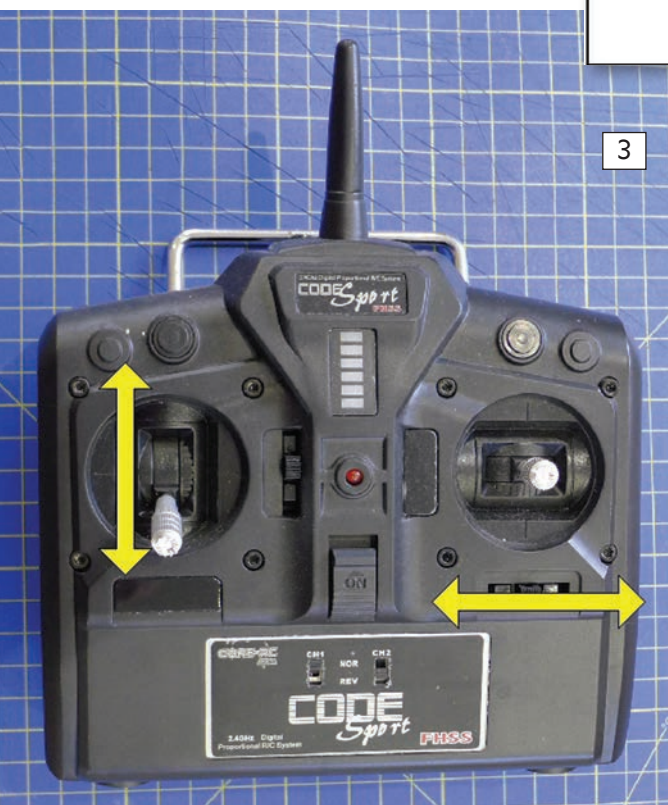
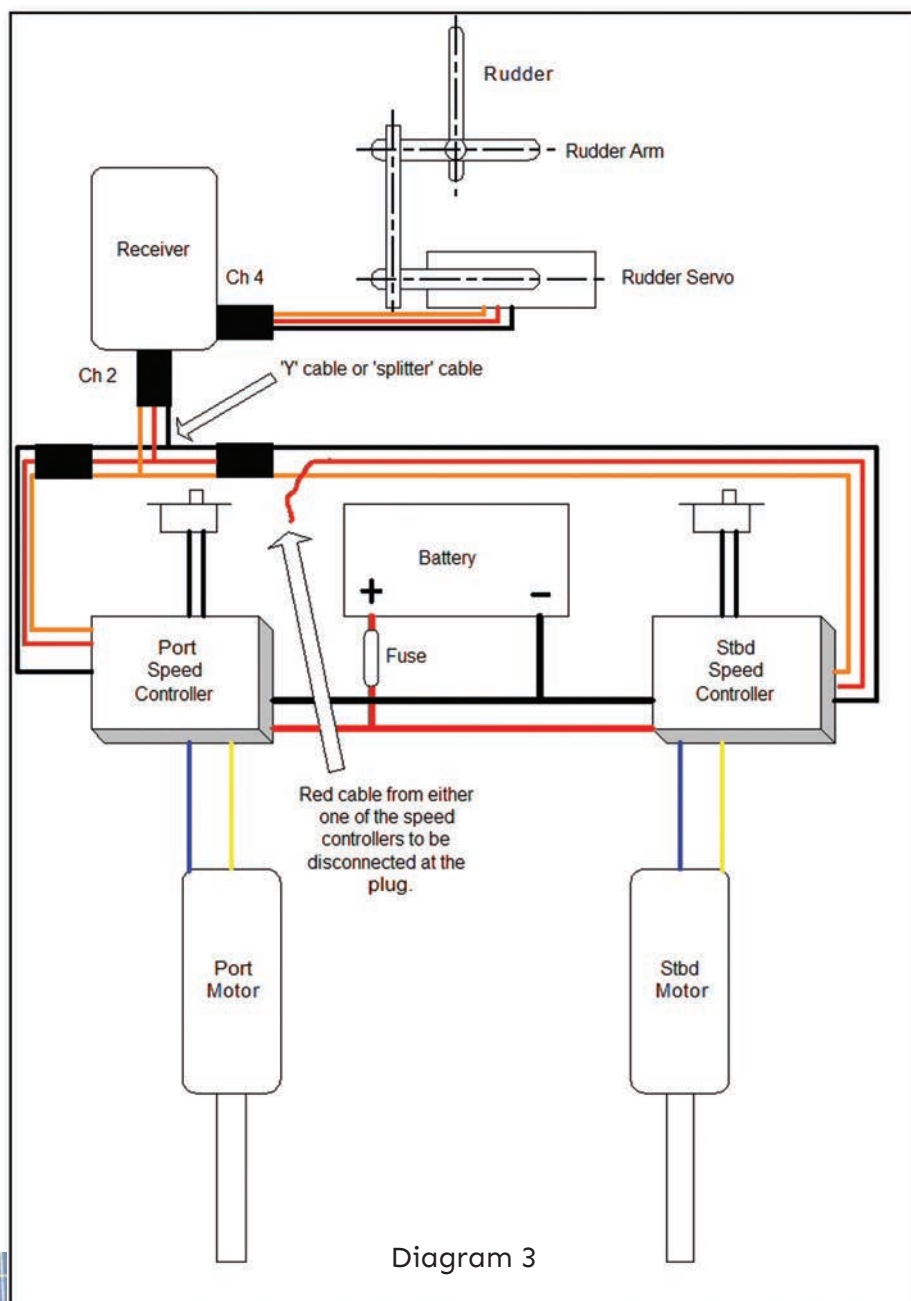
3) Two motors simultaneously controlled with two speed controllers

Some modellers might find this an unnecessary arrangement when exactly the same control can be achieved with Option 2, however there may also be the argument that the additional speed controller gives a higher level of redundancy in the case of a failure of either a motor or a speed controller. In this case, of course, the two speed controllers can be a little smaller as they only have to supply a single motor, which may be a consideration if space is tight in the model, or perhaps in something like a catamaran hull with a shaft on each hull.

With this arrangement, though, we must now take into consideration whether we intend using a separate receiver battery or whether we are going to use a battery elimination

circuit fitted speed controller. If we are going to use this facility, then we must disable the power supply from one of the speed controllers to prevent both speed controllers supplying power and overloading the receiver. This is also, of course, a consideration if you are using a speed controller with a BECC circuit with a separate receiver power supply in a single shaft arrangement. To ensure the receiver only has one power supply you must remove the red cable from one of the three wired connectors from one of the speed controllers. This is done by inserting a pointed object into the window in the black plug to depress the barb, which enables the pin to be pulled out. Some modellers cut the red wire, which would work but which renders the speed controller unusable in any future installation where a BECC might be required. Again, this arrangement only requires two proportional channels as the motors work in unison ahead and astern. You also require a special splitter cable for this arrangement, called a 'Y' cable, which allows both speed controller plugs to be connected to a single channel on the receiver (see **Diagram 3**).

All the above can be operated by the simplest of two-channel radio sets by using the left-hand stick up and down for throttle control of the two shafts and the right-hand stick left and right for rudder operation (see **Photo 3**). To get independent control using a four-channel or more radio set we want to look at the set up in **Photo 4**, where the left-hand stick is port motor throttle and the right-hand stick is starboard throttle. Rudder can be either stick, or one could be rudder and one could be bow thruster, etc.



ABOVE: Using two speed controllers now gives an enhanced level of redundancy, however still using a single channel from the radio via a 'Y' lead to the two speed controllers gives the same simple control as previously seen. Note the disconnected power supply to the receiver, as discussed in the text.

LEFT: The most common arrangement for simultaneous use is throttle up and down on the left-hand stick and rudder left to right on the right-hand stick.

RIGHT: Using the two shafts independently could give you steering from the shafts only without bothering with rudders at all. Having the two spare left and right channels gives you options for multiple rudders or, more commonly, bow and possibly stern thrusters.



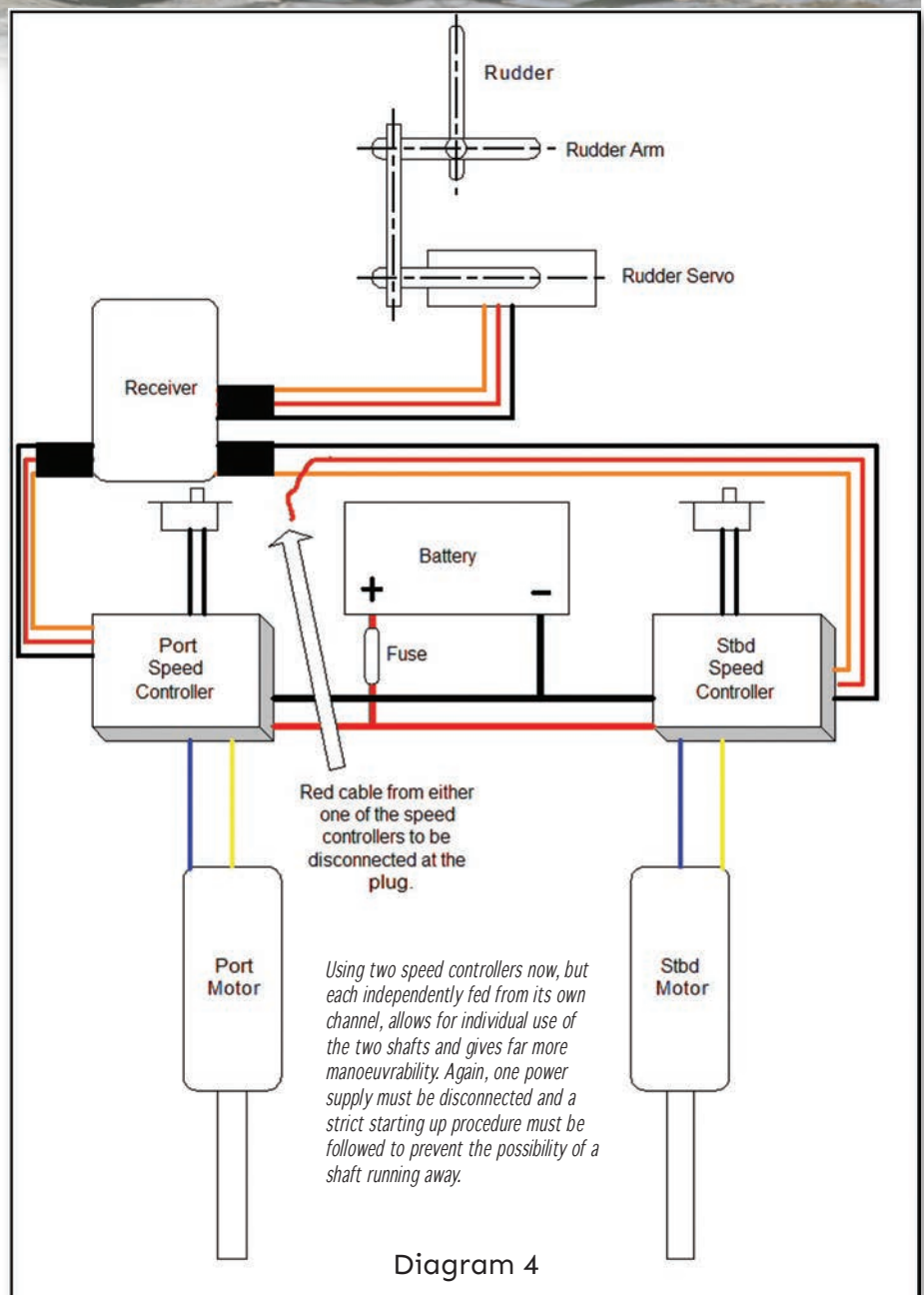


Models such as this truckable workboat, used for things such as barge handling and logging in inaccessible areas of the United States, require the ultimate in manoeuvrability, so both shafts need to be independently controlled.

“This level of maneuverability is particularly useful in tugs and workboats, where spinning around in their own axis is particularly useful”

4) Two motors independently controlled – i.e., tank steering

We now come to an arrangement frequently used by modellers who want the option of independent control of the two shafts. This requires the same two motors and two speed controllers but, instead of connecting them together into a single receiver channel, we feed each speed controller from its own independent proportional channel. Let's consider if we arrange the channels as shown in **Photo 4**. If you now think about this, you can push both sticks equally forward and the model will go ahead, or both equally backwards and the model will go astern. We now have the possibility, however, of completely controlling the steering of the model by only using the two shafts. One motor full ahead with the other one half ahead would create a gentle turn, whereas one full ahead and one full astern would generate the model almost spinning in its own length. One advantage of the arrangement is that you can actually do without the rudder and simply rely on the tank steering effect of the two shafts. Some modellers keep the rudder and either use it independently or, getting even more complex, can mix the rudder channel with the motor channels to enhance the effectiveness of the rudder. The options are endless. This level of manoeuvrability is particularly useful in tugs and workboats (see **Photo 5**), where spinning around in their own axis is particularly useful. Inside this truckable



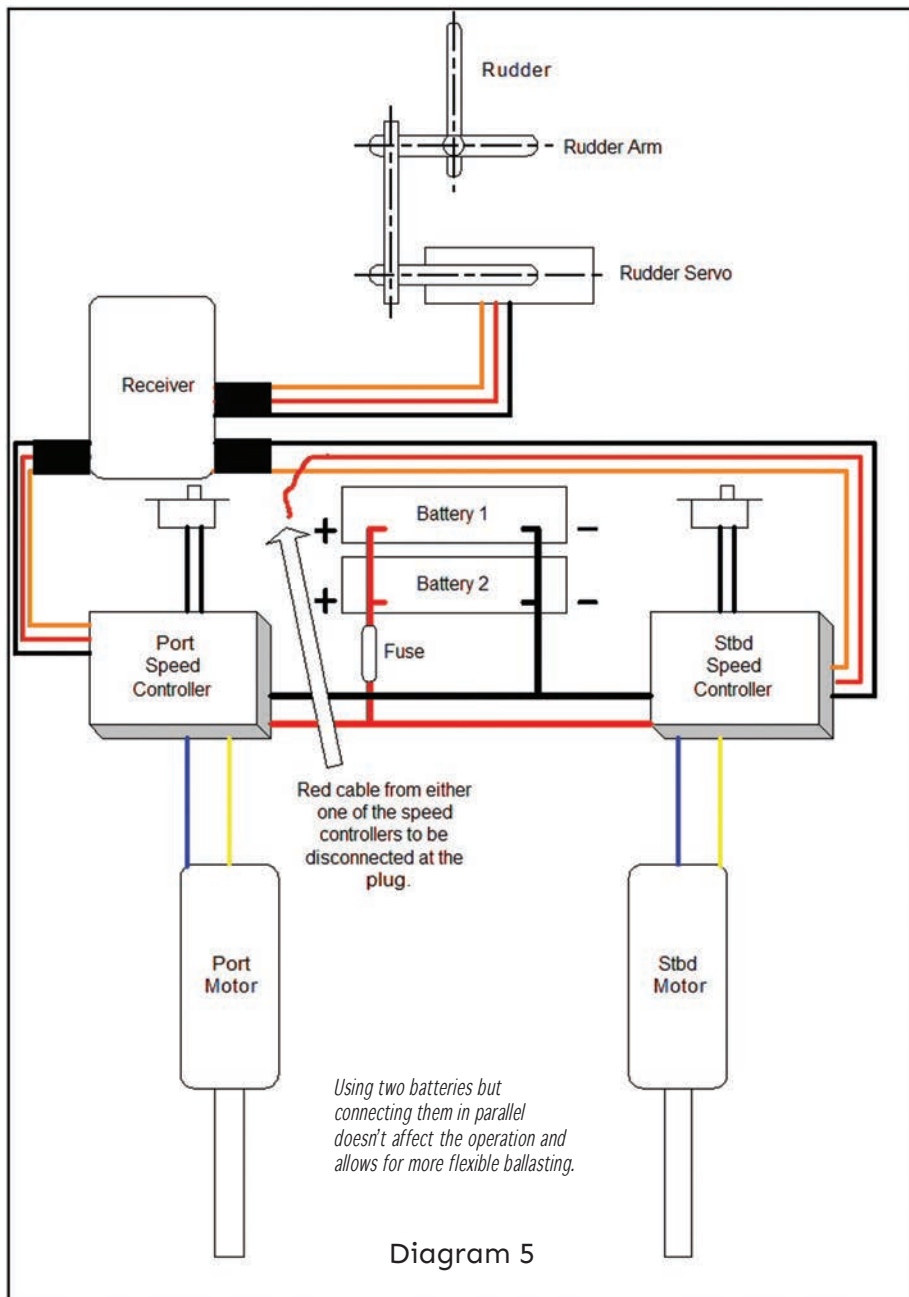
“One addition worth considering might be to use two batteries instead of just the one... Two batteries frequently enable better ballasting of the model, particularly in a longer hull where a single battery in the centre might create a toy-like bobbing effect of the model on the water”

workboat model are two speed controllers, each controlled by the relevant stick being moved forwards and backwards, (see **Photo 6**). The four forward rudders are controlled by the left stick side to side and the two aft rudders are controlled by the right-hand stick side to side (see **Diagram 4** and **Photo 7**).

5) Adding another main battery

One addition worth considering might be to use two batteries instead of just the one. If the two batteries were connected in parallel then the voltage would not be affected but you would have the capacity, i.e., the duration, of the two batteries. Two batteries frequently enable better ballasting of the model, particularly in a longer hull where a single battery in the centre might create a toy-like

BELOW: Inside the truckable workboat you can see the two speed controllers and just make out the fact that they are each fed by a separate channel on the receiver. Also worth noting is the fact that each side has been fitted with its own fuse to greater increase the levels of redundancy.



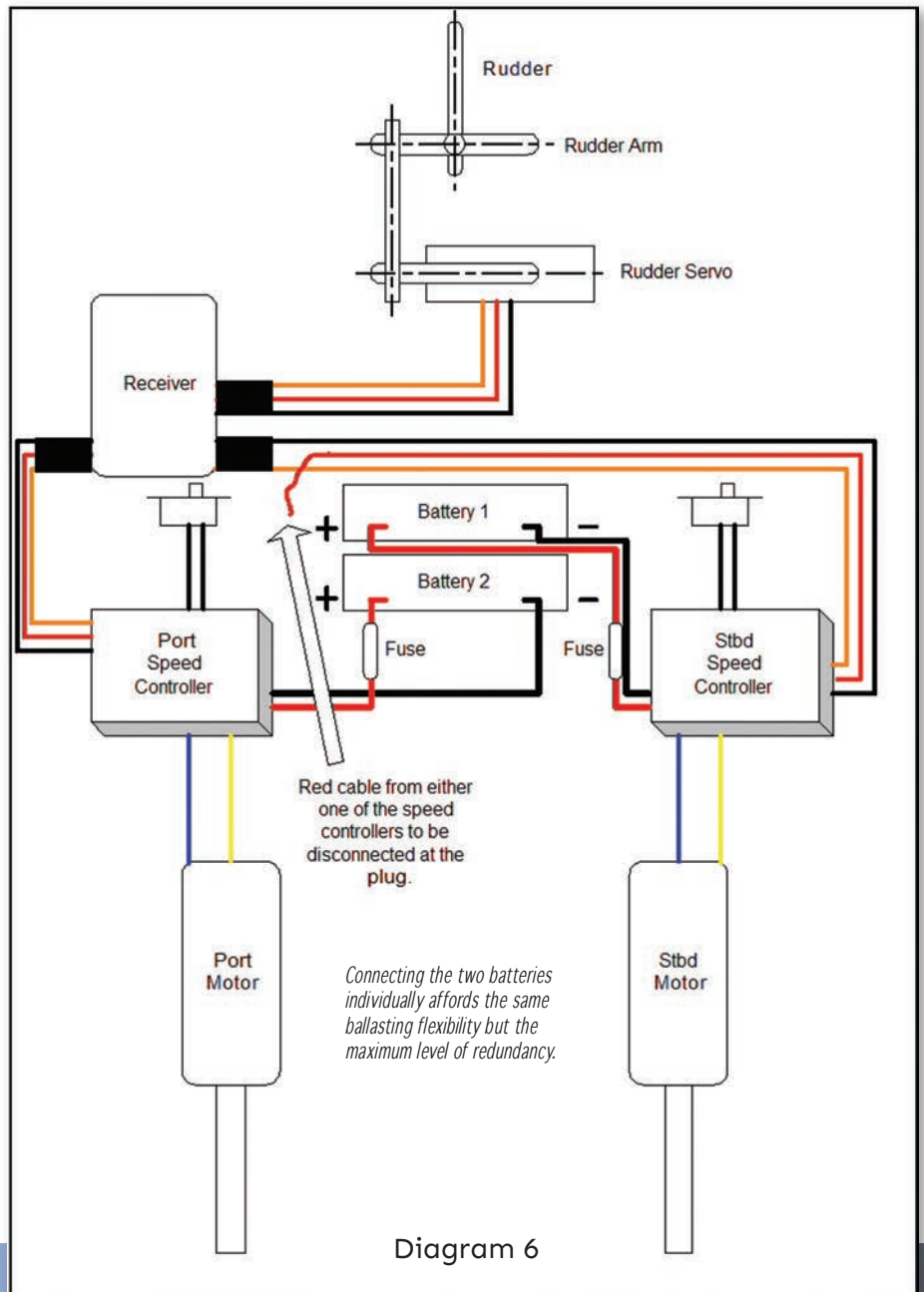
bobbing effect of the model on the water. Spreading the ballast out throughout the length of the model will help to reduce this and make the model more stable. With the two batteries connected in parallel they can simply be considered as a single battery of twice the capacity of a single one, so nothing on the control side is any different (see **Diagram 5**).

6) Completely independent propulsion systems

The final arrangement that you might want to consider is using two completely independent propulsion systems. This has no advantage over Option 5 as regards control, but the two batteries give the enhanced stability mentioned above, combined with the best possible levels of redundancy, unless of course you really want to go over the top and use two receivers! You then have a separate motor, speed controller and battery for both shafts of the model, so a failure of any one of these components will leave you with a fully functioning remaining shaft to get you back to the bank. Interestingly, this is how real-life marine diesel electric plants are arranged nowadays, with two separate engine rooms and two propulsion motors for the two shafts, capable of being split to enable total independent operation (see **Diagram 6**).

Conclusions

Hopefully, if you're considering a model with two shafts, one of these arrangements will suit your purpose. I would highly recommend making the decision on how you're going to control the two shafts before you start the build so you can better plan the layout. If you want to familiarise yourself with the handling of independent and simultaneous operation there will almost certainly be members at any club willing to discuss them with you, and maybe even let you have a go. ●



LCT 7074

Part 2

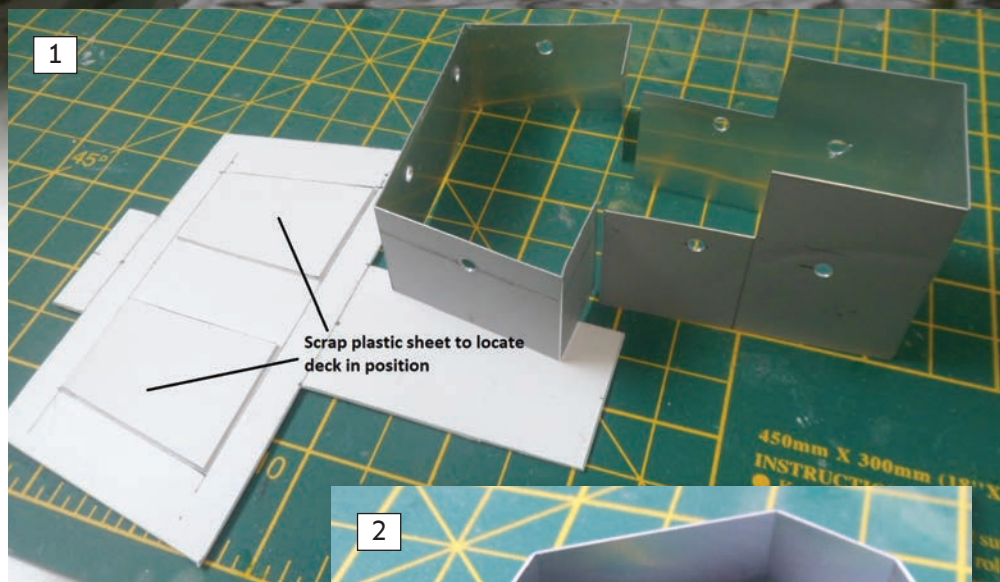


Francis Macnaughton completes his step-by-step guide to building a 1:72 scale model of this unexpected Operation Overlord survivor from the free pull-out plan included in last month's issue...

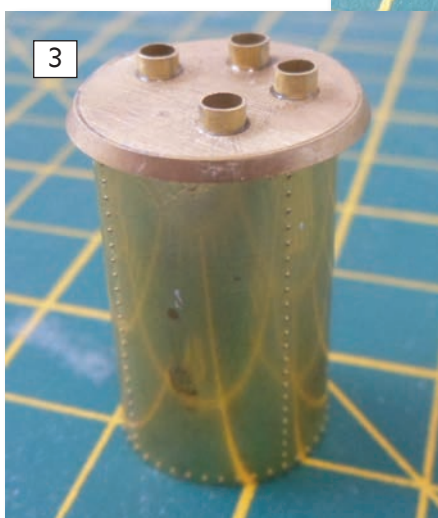
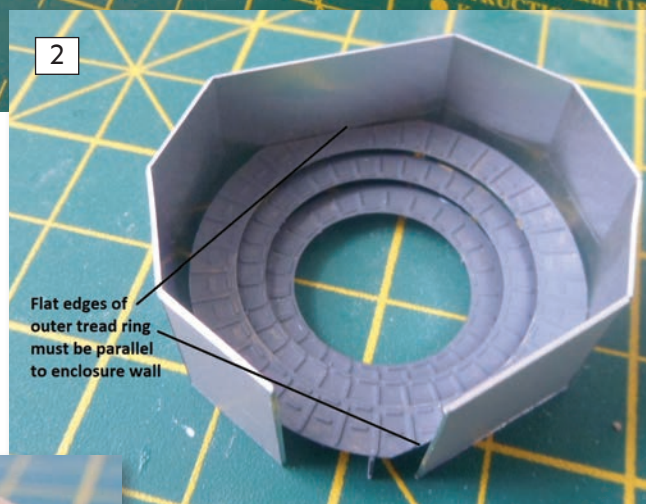
Picking up from where we left off last month, the next stage is to build the remaining larger structural items before adding all the fittings and other fine detailing. Do keep in mind that, because of the very limited space available below deck, landing craft like the LCT 3 had a lot of different fittings and gear visible on the upper deck that would be stowed out of sight in a larger vessel. How much of this detail you decide to include on your model will depend on a number of factors, including whether it is likely to be too fragile on a working model and also how much patience you have when working with lots of tiny pieces of plastic and photoetching!

Deckhouse

The largest item still to construct is the deckhouse, and the sides and deck shape for this are given in the plans. While my first preference would be to use lithoplate for the deckhouse sides, because of the ease it can be bent accurately with at each corner



(see **Photo 1**), I instead used separate pieces of plastic card glued together because of the risk of poor R/C signal reception to a receiver mounted under a metal deckhouse. The enclosure walls around the 20 mm mountings are also probably easiest if made from lithoplate, scored and bent at each corner. Care needs to be taken



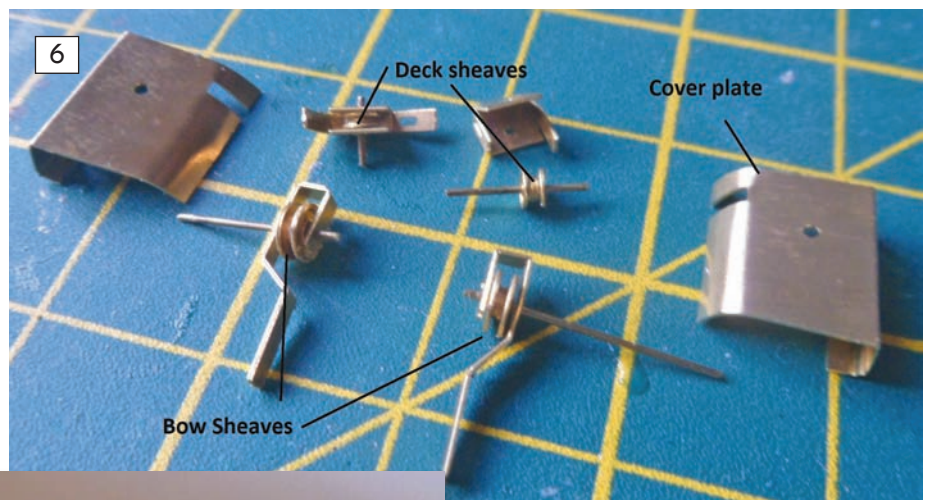
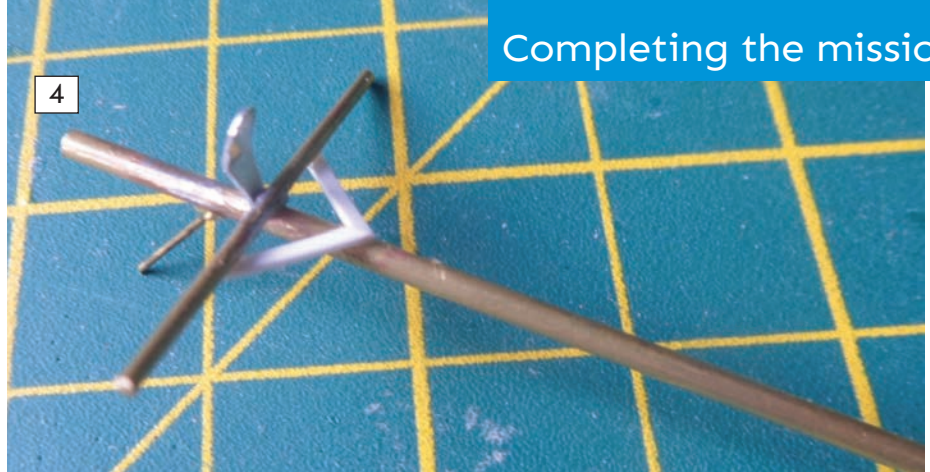
to assemble these so that there is enough room to take the outer foot-tread ring for the Oerlikon mounting inside correctly (see **Photo 2**). The PE set (more on which below) includes the whole funnel, or it could be scratch built with a suitable piece of tube and the cap made from plastic card sheet (see **Photo 3**). The mast is a length of 1.8 mm brass tube, with the yard arm made from 1 mm tube and soldered together with some scrap pieces (see

“Having used items designed by Mark Hawkins of 3D Boats in many of my recent models, I asked him about adding a complete range of fittings for LCT 7074 to his extensive catalogue and the result is six subsets of 3D printed 1:72 scale fittings. These faithfully reproducing almost every item shown in the plans”

Photo 4). **Photo 5** shows the pieces required for the various 20 mm ammunition lockers. The removable section of main deck (from Part A) that lifts off with the deckhouse is designed so that all the small and fragile fittings, like the ladders and winches, are attached to it, minimizing the risk of them being accidentally knocked off when accessing the R/C gear. The deckhouse is held in place on the hull by two small super magnets, with matching pieces of scrap steel epoxied to small shelves at the edge of the opening.

Bow ramp and cable gear

The front ramp was largely covered in Part 1 when the main hinge arrangements were installed on the bow section. The bow and deck sheaves are provided in the PE set and can be made to turn, offering the possibility of having a working mechanism to raise and lower the ramp – although the available space and size of the components in 1:72 scale makes this quite challenging, and good eyesight and a steady hand are definitely needed to assemble it all (see **Photo 6**). Do note that it is worth taking particular care



Cable should be parallel to the bow surface

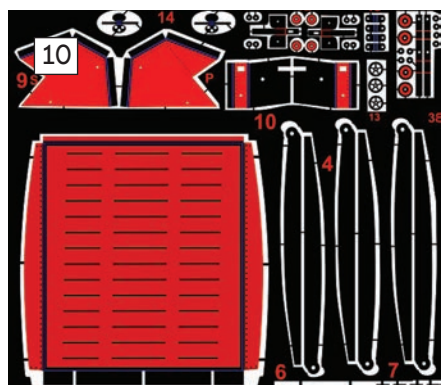
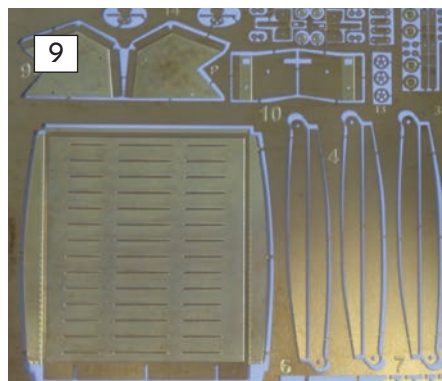
7

when fitting the lozenge shaped plates that support the ramp cable sheaves either side of the ramp opening so that, when the ramp is closed, the cable will run correctly from the sheave to the attachment point on the ramp (see **Photo 7**).

3D-printed fittings sets

Having used items designed by Mark Hawkins of 3D Boats in many of my recent models, I asked him about adding a complete range of fittings for LCT 7074 to his extensive catalogue and the result is six subsets of 3D-printed 1:72 scale fittings. These faithfully reproduce almost every item shown in the plans (full details are available at the Shapeways website, www.shapeways.com). The individual pieces are packed as closely together as possible to keep costs down, and the two deck sets and the bridge set offer good value for money, with a high

“To complement the fittings sets I have designed a photo-etch set, which is intended to provide a cost-effective way of adding worthwhile detail to the model”



number of items in each set (see **Photo 8**); note, however, that Shapeways service and postage costs add about 50% to the price given at the 3D Boats shop).

In most cases it's simply a case of washing these items carefully, then lightly under-coating with a spray can white primer to check if any further cleaning up is needed before painting them in the correct colours, after which they can be separated from the sprue and glued in place. I find a fairly thick CA type of glue, which allows a few seconds for adjusting the position of each item, works best here. The other three sets are, potentially, optional, as in some cases they are not required; for example, not all LCT3s had the Mulock ramp extensions (these were not fitted before early 1944). Some modellers may already have the life rings and Carley floats in their spares box, while some may prefer alternative sources where more robust materials have been used for fragile bits like the 20mm Oerlikon gun barrels.

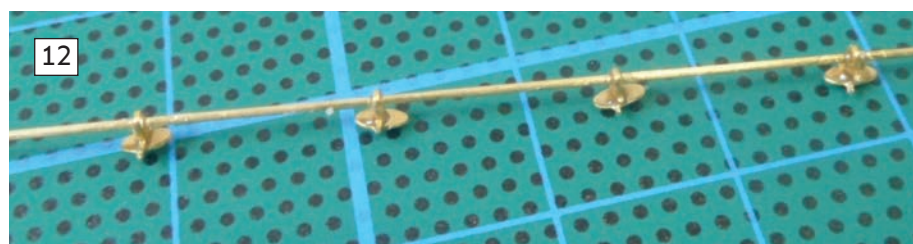
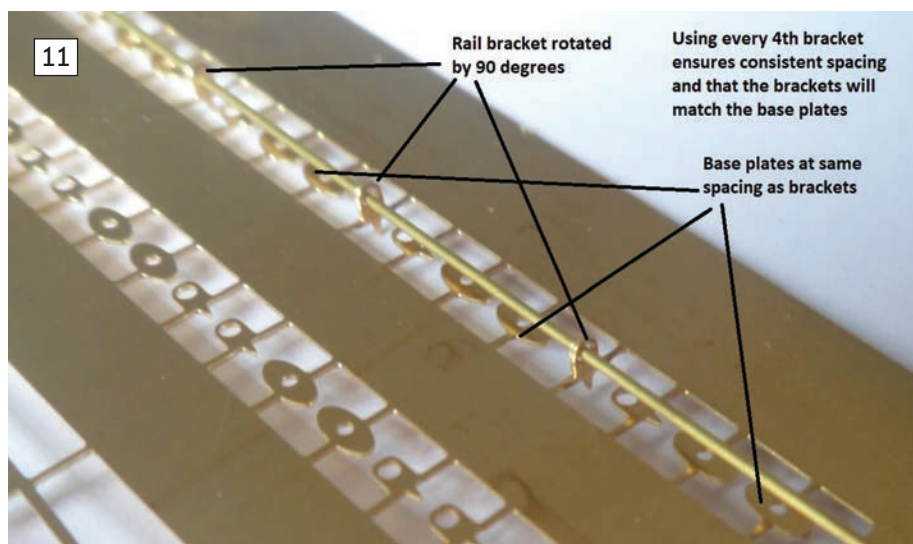


Photo-etch sheet

To complement the fittings sets I have designed a photo-etch set, which is intended to provide a cost effective way of adding worthwhile detail to the model, particularly where the aim is to portray the texture of prominent surfaces, such as deck treads and riveting, which would be very time consuming if done by hand or where a large number of identical items are needed, for example the 30+ oval tank top plates or the 40+ triangular strengthening frames for the side bulwarks. The brass sheet used is relatively thick at 0.3 mm, as this offers the best compromise between strength and detail resolution.

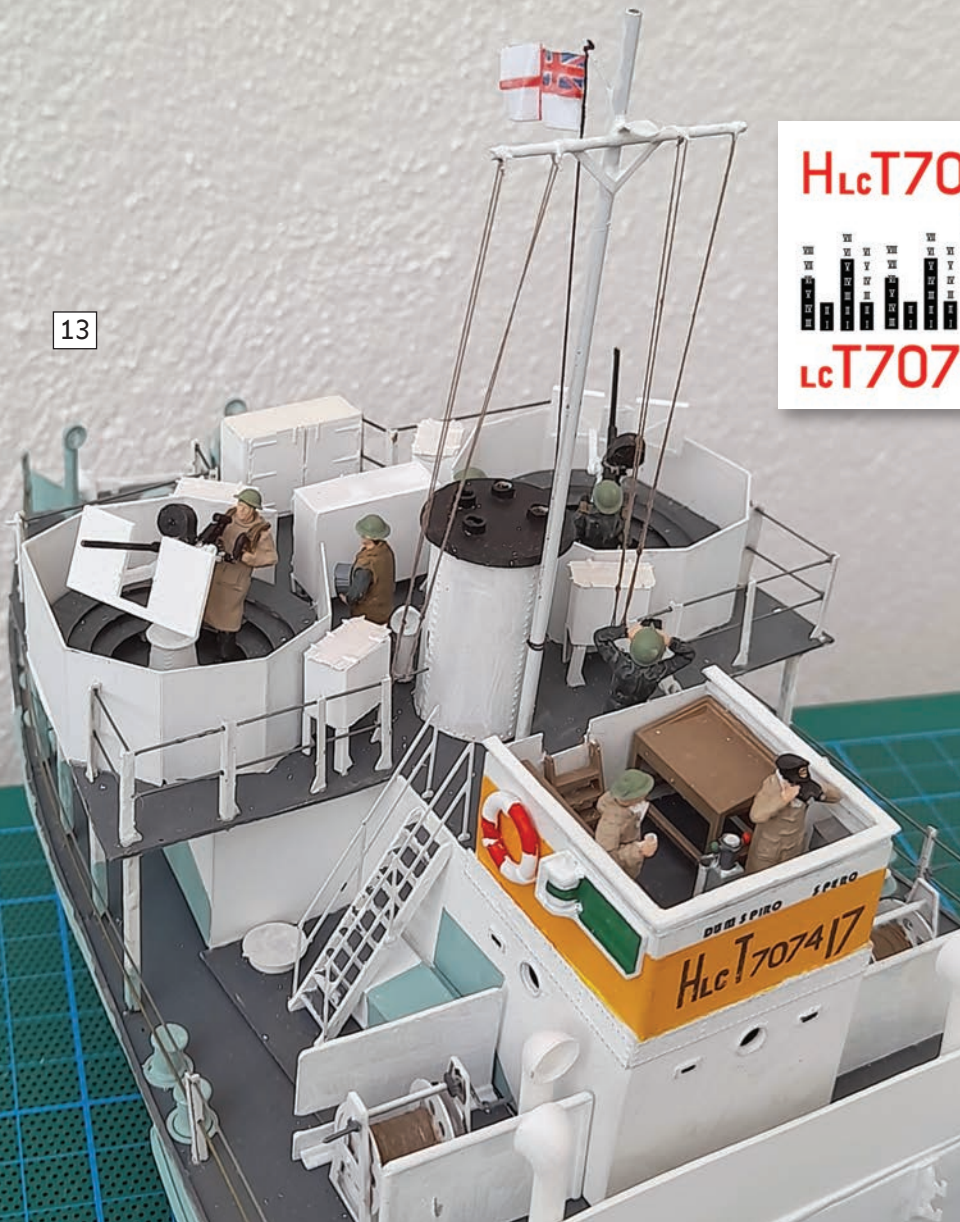
It is planned that the PE set will be available from the specialist model tank firm Millicast – again, details will be posted to the forum at www.modelboats.co.uk; there is simply not enough space available here to explain everything that is included, and in any case the instructions for the photo-etch sheet are included in my dedicated LCT 7074 thread on the MB website forum.

I have highlighted below where the PE should enhance particular areas of the model. Even if you are not using the PE, do have a look at the PE artwork I have also included, which will provide accurate templates for your own versions of individual items. **Photos 9 and 10** show many of the parts needed for the bow ramp area as PE and the equivalent artwork.

Tank deck area

The tank deck side bulwarks were particularly ‘busy’ with lots of important gear, notably the fire main on the starboard side and freshwater piping on the port side. Spare prop shafts and propellers were also stowed here, along with supports for the canvas cover over the tank deck, and lengths of rope and chains, fire-fighting gear and baulks of timber for damage control would also be visible on an operational LCT. On the outside of the bulwarks the rails running the full length of the tank deck to secure the tank deck cover are quite prominent. The PE sheet provides a way to realistically mount these rails using individual brackets without having to handle individual tiny bits of etching. This is achieved by spacing each bracket on the main sheet so that when rotated through 90° on the sheet they all align to allow a length of brass wire to be slid through the hole in each bracket, ready for a small blob of CA glue to hold everything together accurately. The section

13



of rail is then cut free from the main sheet and repositioned over the PE sheet, so that each bracket aligns correctly with a baseplate, and they can all be glued together in one session, ready to mount on the bulwark. **Photos 11 and 12** show this and the final result.

Forward of the tank deck, the area under each of the two foredecks is also full of equipment services, including the heads and washing facilities, as well as the hand winches to raise and lower the bow ramp. I had to apply a bit of interpretation to what was shown in the GA drawing – these areas do not seem to have attracted the interest of any wartime photographers! The PE set includes a complete heads structure and the two winches.

Bridge area

The bridge also benefits from extra attention beyond the chart table, voice pipes, binnacle and flag lockers supplied in the fittings set and the deck grating from the PE set, particularly the cabling runs and the various instruments and control boxes, which are always a feature of this area. I based my interpretation on an IWM photo (actually for an LCL(G) 3) and also the more detailed GA drawings for a LCT2. I have manned the key positions on the bridge

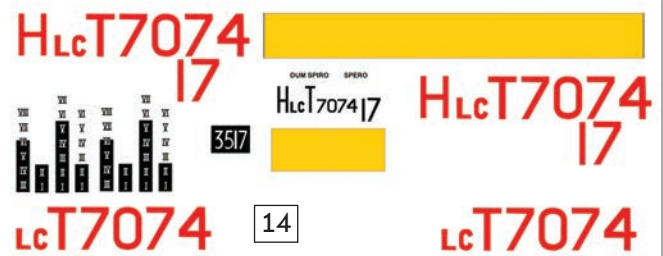
and at the 20mm guns using figures from the Dan Taylor Modelworks range which are specifically intended for landing craft (see **Photo 13**), and these could be supplemented by others from the extensive range offered by Milicast as crew for the tanks.

External hull

Finally, some may wish to portray the plating and rivet detail on the all the decks and hull sides. I did not attempt this on the model built for the article but am considering incorporating it in a second model after a further and more in-depth study of the actual arrangements onboard LCT 7074. I have in mind using aluminium tape layers to represent the different lines of plating, with rivets embossed into the tape, using a rotary rivet tool. Do also note that it is possible to overdo plating detail – LCT Mk 3s were largely built of 3/8th inch steel plates, which equates to only 0.13 mm thick in 1:72 scale.

Painting and markings

LCT 7074 had a standard RN Coastal Forces camouflage scheme, with the entire vessel above the waterline in white partially overpainted with medium blue/grey (officially



"I have manned the key positions on the bridge and at the 20mm guns using figures from the Dan Taylor Modelworks range which are specifically intended for landing craft, and these could be supplemented by others from the extensive range offered by Milicast as crew for the tanks"

called B30) patches to break up the shape. A 3 ft band of yellow was painted around the bridge front and sides to indicate that this LCT was in Force L. The decks were a dark grey and the hull below the waterline was black. Humbrol enamels – No. 27 for the deck grey, No. 65 for the B30 and No. 165 for the yellow – can be used, as they are readily available, but I can also recommend the Sovereign range.

For the various markings on the LCT, I have drawn up the artwork for a set of transfers as a pdf file, which can be downloaded from the MB website and then printed on blank decal paper intended for a laser colour printer, such as those usually found at public libraries (see **Photo 14**). Do note that the white Roman numerals on the underwater part of the hull are achieved by painting the area the transfer will cover in white beforehand – the alternative of using white decal paper would mean that each above water letter or number would have to be cut out very precisely or have a surround closely matched to the part of the vessel it was positioned on. I hope to persuade one of the existing transfer suppliers to release a full set of transfers to cover 7074 and its likely load of tanks and will advise of any progress via the MB forum.

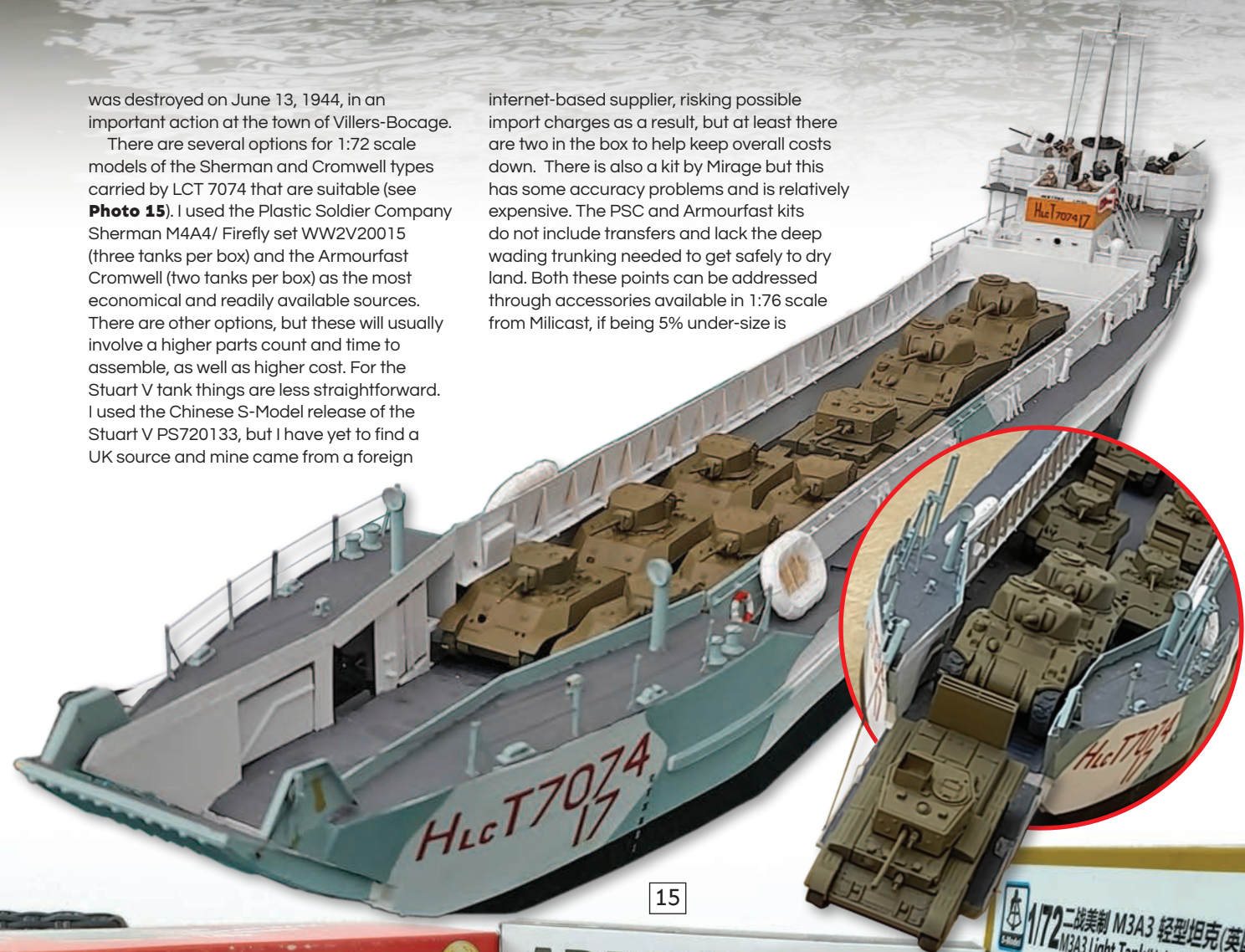
Military load

On June 7, 1944, LCT 7074 landed seven Stuart V M3A3 scouting tanks from the 5th Royal Tank Regiment, two Sherman M4A4 OP medium tanks from the 5th Royal Horse Artillery Regiment and one Cromwell medium tank from HQ 22nd Armoured Brigade, along with a total of 45 crew. This loading had been planned well in advance and registered in the operation orders as Landing Table Index Number (LTIN) 3517, which is the number prominently displayed on a blackboard on the LCT bridge front to ensure the right equipment got onboard. One of the Stuart V tanks called Elusive got into difficulties while disembarking and was flooded, while one of the Shermans

was destroyed on June 13, 1944, in an important action at the town of Villers-Bocage.

There are several options for 1:72 scale models of the Sherman and Cromwell types carried by LCT 7074 that are suitable (see **Photo 15**). I used the Plastic Soldier Company Sherman M4A4/ Firefly set WW2V20015 (three tanks per box) and the Armourfast Cromwell (two tanks per box) as the most economical and readily available sources. There are other options, but these will usually involve a higher parts count and time to assemble, as well as higher cost. For the Stuart V tank things are less straightforward. I used the Chinese S-Model release of the Stuart V PS720133, but I have yet to find a UK source and mine came from a foreign

internet-based supplier, risking possible import charges as a result, but at least there are two in the box to help keep overall costs down. There is also a kit by Mirage but this has some accuracy problems and is relatively expensive. The PSC and Armourfast kits do not include transfers and lack the deep wading trunking needed to get safely to dry land. Both these points can be addressed through accessories available in 1:76 scale from Milicast, if being 5% under-size is



15





"The motors certainly provide sufficient power to readily achieve the scale equivalent of the full-size vessel's 10 knots and the steering is responsive enough to keep out of trouble"

18



17

acceptable. If opting to build a different LCT, other combinations of vehicle types might be easier to get hold of, such as nine Cromwell or Sherman tanks or five Churchill heavy tanks. For further detail and advice on the individual vehicles I can heartily recommend the Missing-Lynx website, where several acknowledged experts on the subject regularly contribute.

On the water

As expected, weight did not prove a problem with the completed model ready to sail weighing about 700g, and the tanks add at most another 300g. Hopefully, **Photos 16-18** of the completed model compare well with those of the real invasion fleet on their way to Normandy. On the

water the motors certainly provided sufficient power to readily achieve the scale equivalent of the full-size vessel's 10 knots while the steering going ahead is responsive enough to keep out of trouble. Directional control astern was very limited, however, much like the full-size craft by all accounts!

Over to you...

This project has been considerably more involved than my previous efforts because of the aim to make it easier for other modellers to achieve a workable and detailed finish. I hope, therefore, that there will be plenty of completed examples to be seen on model boating ponds, and in the Your Models section of this magazine, in the future! ●

Reference points

General Arrangement (as fitted)
drawings LCT 7058 & 7105

Details of Combined Operations
Landing Craft and Barges and
Addendum CB 04304

LCT 7074 D-Day Survivor, ISBN978-
184165-921-3, Pitkin Publishing 2020
(Available from The D-Day Story
Museum shop)

Imperial War Museum Photos A 23941,
B5135, CL71, A 12355, A 24193, A 20674
A 20676, FL22409

US Naval History and Heritage
Command photos 80-G-286432,
80-G-286430

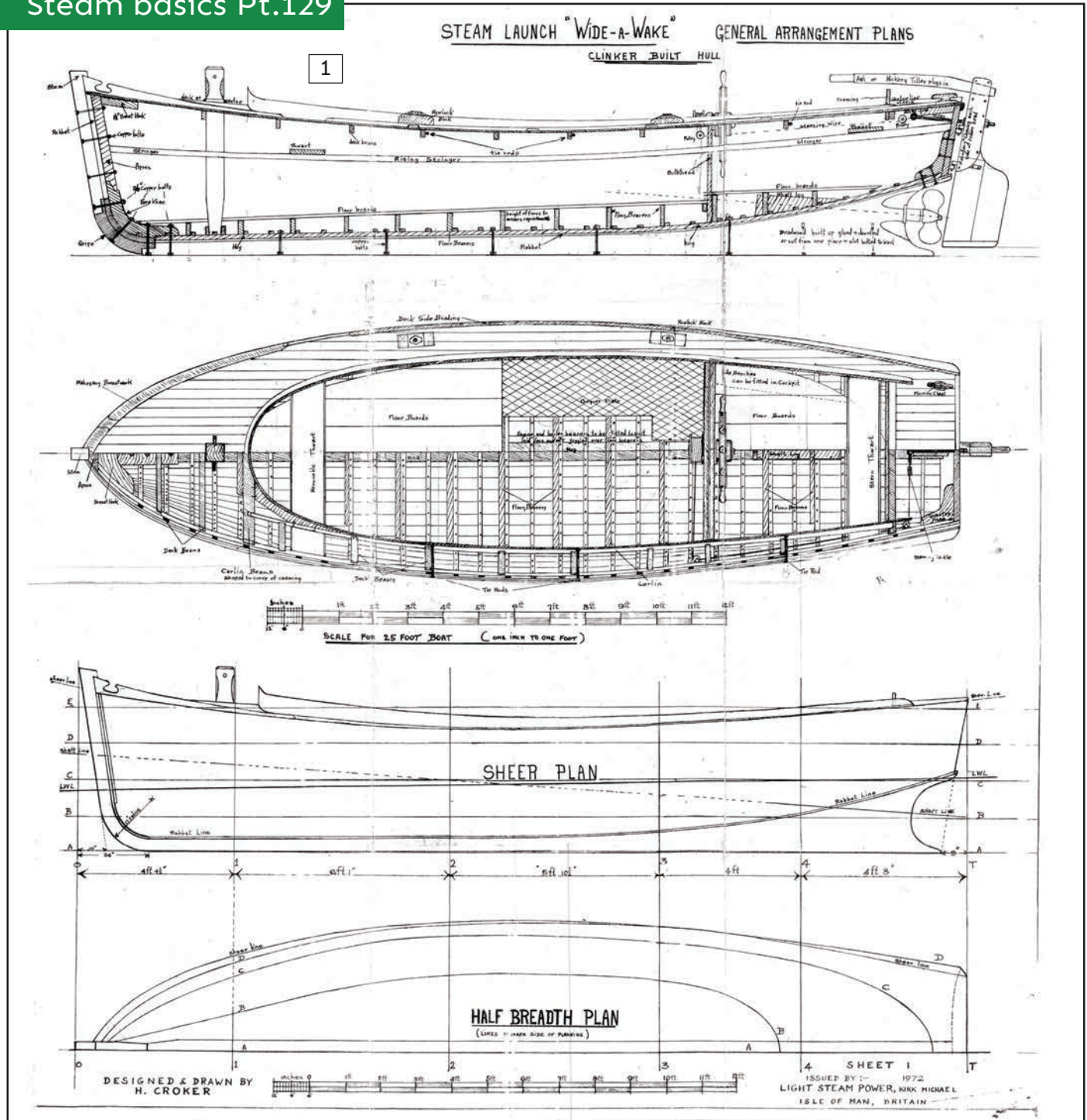
Rivet Counting – The Archaeology of
a Landing Craft YouTube Webinar by
Stephen Fisher

LCT 7074: The Archaeological Record
of D-Day's Last Landing Craft Tank by
Stephen Fisher

Dedicated LCT 7074 thread at <http://ww2talk.com/index.php?threads/lct-7074.77063/>

Sunderland Museum photo of LCT
being fitted out in Hendon Dock, <https://www.flickr.com/photos/137368687@N02/23701970242/>

Blog LCT 7074 – Hebburn's remarkable
D-Day survivor, <https://blog.twmuseums.org.uk/lct-7074-hebburns-remarkable-d-day-survivor/>



Boiler Room

Richard Simpson begins the first of four instalments that document a recent build in which he's been able to test out some innovative new equipment...

Regular readers will remember that in Boiler Room Pts.122 and 123 (featured in the November and December 2021 issues of Model Boats) I described how after having had a good old dig through some of the long unused items I had stashed away in my workshop I was able to use the bits and pieces unearthed to put together a working steam launch model. Part of the reasoning behind that project was not just to put a hull

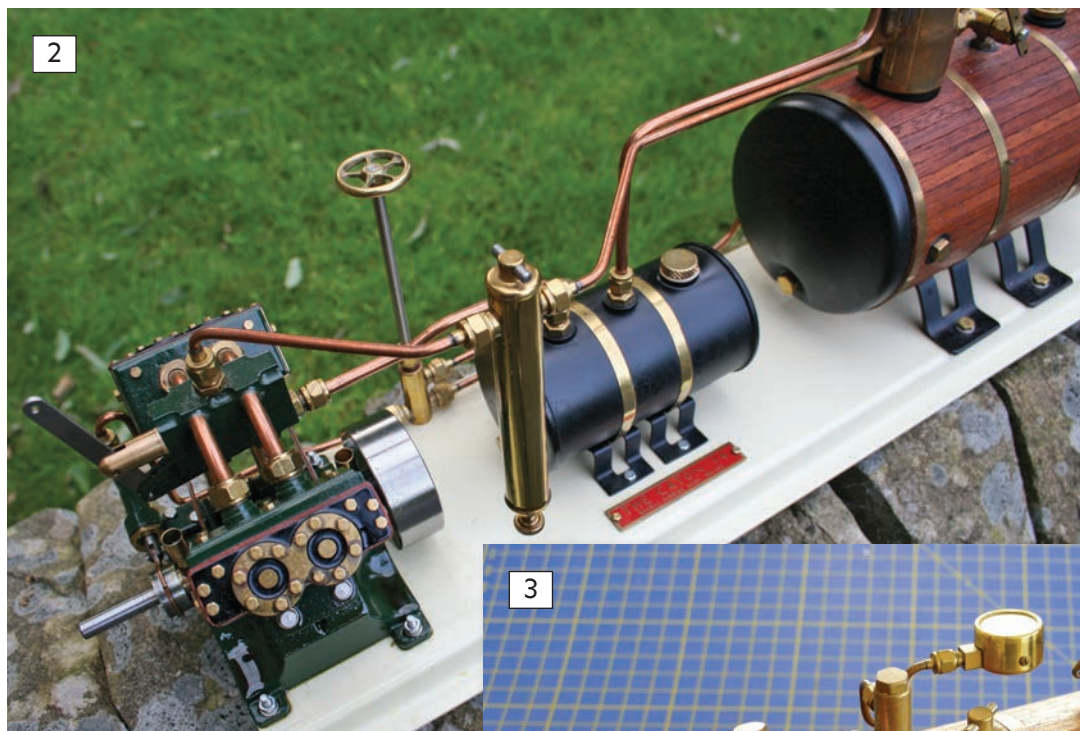
and a plant that had long been redundant to good use again but also to serve as a practice run and test bench for another project...

From inspiration to inertia

Around 14 years ago I got my hands on a set of plans that were originally produced by *Model Engineering Magazine* in 1972. These were drawn by Mr. H. Croker of Australia

Just one of the pages of the very comprehensive Wide-A-Wake plan. A series of articles in Model Engineering magazine were published to describe the build of the model from the plans using a Stuart Turner D10 engine.

and were based on an open hulled steam powered launch called the *Wide-A-Wake*, which used to operate on Lough Erne and was frequently used as a regatta guard boat for the sailing events that were held on the lake below the town of Enniskillen prior to World War I (see **Photo 1**). The original boat was clinker built, 25 foot long, with a beam of 7 ft 6 ins, and the plans were designed for a 1:6 scale model. These plans included the layout to fit a Stuart Turner D10 engine and boiler, which, the series of supporting articles published in the *Model Engineer Magazine* indicated, gave the model not only respectable performance but an appropriate size and weight of plant that looked realistic.



LEFT: Luckily, at around the same time as the hull was being built, along came a Hemmens Caton 'V' four plant in almost unused condition. The plant consisted of a horizontal twin poker burner boiler, a separator tank, the Caton engine, reversing and speed control valves and a long displacement lubricator.

RIGHT: To provide the required amount of heat to drive the engine, the boiler uses two poker burners. Steam is raised in just a few short minutes from cold, but ideally a feed system is required to keep the boiler supplied with water.

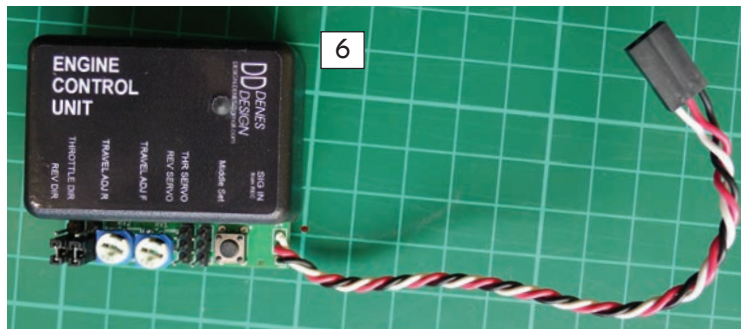
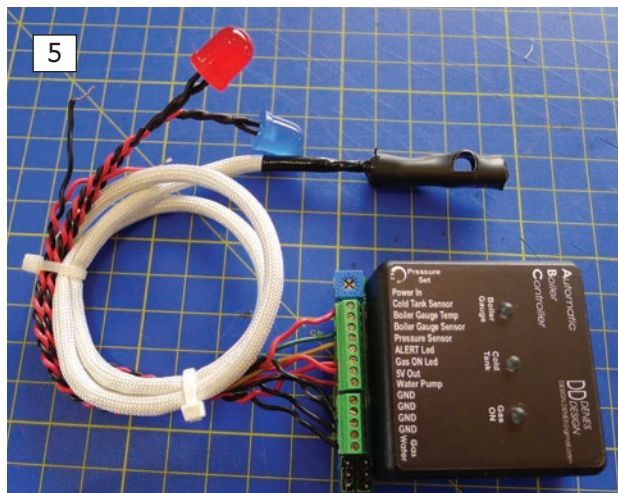
BELOW: When the hull was received, it was a work of art! It's amazing, Richard points out, how such superb, smooth, curved lines can be created from straight planks of wood in a clinker hull, traditional boat building at its best.



Back then I was working away from home most of the year, so I approached a retired boat builder in Southampton to enquire about the possibility of him making a traditional clinker-built hull from the original plans for me. Fortunately, he was happy to oblige. At around the same time I happened to come across a Hemmens Caton 'V' four plant for a reasonable price and decided that the

four smaller pistons were probably of a fairly equal power to the two cylinders of a D10, so purchased the plant with the idea of fitting it in the hull. The 'V' four engine also provided the visual interest that such a large open model deserved, and with four pistons and four piston valves it made for a stunning looking piece of machinery (see **Photos 2 and 3**). When I collected the hull, I was extremely pleased with

the quality of the construction and the overall looks and lines of it, although it included a number of internal items, such as a deck and lockers, that were possibly not going to be used (see **Photo 4**). I started playing around with building a new deck and working out where the steam plant components could be fitted, before then consigning the project to a shelf for somewhere in the region of 13 years!



LEFT: In Boiler Room Pt.118 (MB, July 2021) Richard shared the results of the bench test he undertook on the Automatic Boiler Control unit. But, he explains, you really need to see it in a working model on the water to determine if everything functions just as it should. ABOVE: Then, in Boiler Room Pt. 127 (MB, April 2022), Richard looked at a new device for controlling a valve engine with a single proportional radio channel. Again, however, this unit needed to be trialed in proper working environment to see how it would perform.

Wide-A-Wake again!

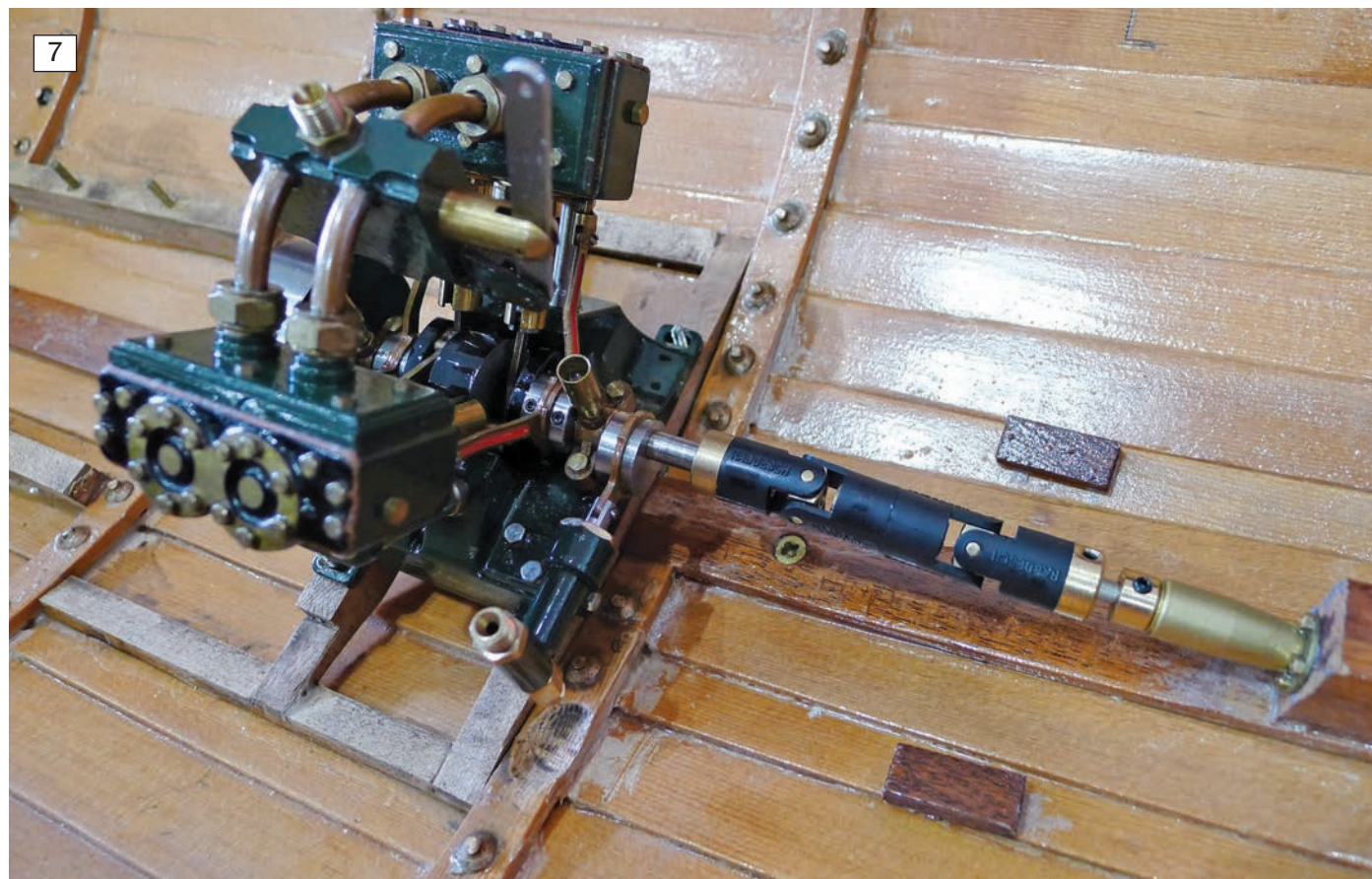
Having languished on that shelf for way too long, I realised the Wide-A-Wake project needed an injection of renewed enthusiasm. Lockdown and retirement finally provided me with plenty of time, but one of the other main driving forces was the recent experimentation with the Denes Designs' electronic units I'd evaluated for Model Boats magazine: the Automatic Boiler Control Unit featured in Boiler Room Pt. 118, July 2021 (see **Photo 5**) and the Engine Control Unit featured in Boiler Room Pt. 127, April 2022 (see **Photo 6**). The Wide-A-Wake project gave me the perfect opportunity to get both of these new devices into a working model, thereby enabling an in-depth

evaluation of them in a live environment. With renewed passion, the workshop decks were cleared, and the bits and pieces of the Wide-A-Wake model were all dusted off.

Layout planning

The hull had already been fitted with the stern tube and shaft, so the position of the engine was already narrowed down. What made things a little more constrained, though, was that I wanted to maintain the use of the original cockpit area. This consisted of a forward bulkhead and a deck with bench seats attached. The shaft did not come further forward than this forward bulkhead;

however, with a double universal joint added the connection was accessible to the engine shaft. Using this to locate the engine, bearers were fitted between two of the frames in the bottom of the hull, which had cap head stainless steel screws set into them from below to give a safe and secure mounting. This was bonded to the hull with two-part epoxy (see **Photo 7**). The other item that I wanted to locate as low as possible was the boiler. Again, I chose to use longitudinal bearers between frames on which to mount the boiler, which I didn't want it to sit too far forward, as this would push the bow down. A fairly amidships location was chosen after some trials in the test tank. Before this was



While the shaft didn't project forward far enough to clear the cockpit bulkhead, donated by the two locating lugs on the hull, the double universal coupling brought it sufficiently far enough forward.



To completely seal the undersides of the deck after construction was finished, it was given two liberal coats of polyurethane varnish. In this view, it's easy to see the transverse beams that locate alongside the hull frames, the longitudinals, including the main beam that sits on the keel, and the braces to keep everything rigid.

finalised, however, thought was put into the other main components. I knew I was going to use a boiler water feed tank, which would be as far forward as possible, and I always had this idea of using another tank to house the gas canister. I therefore purchased two 1:6 scale oil drums, started to paint these up employing some weathering processes, and had a loose play with their locations. Eventually I was happy that I could get the feed tank right up into the bow, and the gas cylinder to one side in front of the boiler. This left me with suitable areas to locate the electronics installation, which was going to consist of two independent packages, each with its own battery. One would be on the starboard side midships and would house the receiver and Engine Control Unit and the other one would be on the port side opposite the gas tank and would house the Automatic Boiler Control unit. I roughly had in the back of my mind the locations of the servos and pipe runs to connect everything together. The separator should just slot in behind the starboard locker, so steam pipework was not going to be a major re-hash. The cockpit was going to have a couple of 1:6 scale figures, with one of them, I hoped, being able to operate the engine controls. As I was planning to use the valve on top of the engine as a reversing control and the valve on top of the boiler as a speed control, I was hoping that it would be fairly straightforward to make this happen. With all that thinking in place, and the engine and boiler positions set, it was time to start playing around with the build.

“Using an oil drum for a feed tank was always going to generate an interesting looking item but making it work was perhaps not going to be quite as straightforward...”

Getting started

Once the engine and boiler bearers were in place, the process of building the lower deck could begin. As this was going to have the feed tank mounted on it in the bow, I knew it needed to be as low as possible, but I also wanted it to generate sufficient floor space to enable the other components to be fitted. I played around with a few pieces of wood and eventually settled on building a framework for the deck, using the side frames as locating points, joined together by longitudinal pieces and braces, with the whole piece built around a spine that sat on top of the keel. The deck would therefore be loose but would be located by the hull frames and supported by the sides of the hull and the top of the keel. The decking was made from doll's house wooden flooring, supplied in paper backed sheets. This was cut up to match the transverse frames and go around the boiler and engine openings to give a firm enough floor, which could still be removed in the future if required. When everything had been completed, glue was liberally applied

to the undersides of the structure and then the undersides were given two coats of polyurethane satin varnish (see **Photo 8**). The upper surfaces would not be varnished until after weathering.

Having now created a lower deck I could start to see how the planned layout was going to work and get a better view of where things would go. The next substantial part would be the frame to carry the feed tank.

The feed tank

Using an oil drum for a feed tank was always going to generate an interesting looking item but making it work was perhaps not going to be quite as straightforward. The first job was to make a suitably equipped tank that could be used to hold feed water. The Automatic Boiler Control unit comes fitted with a sensor that sets off an alarm when the feed tank gets low. I, however, wanted my tank to be fitted with a sight glass so I could see the level at all times; this would also make for a much more visually interesting installation. I therefore purchased a sight glass kit, a feed valve, and some suitable sized and threaded brass bushes to mount them.

As the tank was made of thin tin and it was only going to hold water anyway, I decided to fit the bushes by soft soldering them. I used a small hand-held gas torch so the heat could be accurately controlled, along with some non-acidic flux that can be brushed on and doesn't require cleaning off and an easy flow solder. Using sharp new drill bits, the tank was

9



Soft solder is perfect for jobs such as this. A naked flame gives much better heat control, though, and an easy flow solder and paintable flux makes the job particularly easy. You can see the lovely fillet of solder around the edge of the bush, so can be confident that the solder has run smoothly between the joint.

10



With the soldering done, the first stages of painting could then be carried out. Richard applied a metallic base using a solvent-based acrylic rattle can, with rust-coloured enamels dry brushed over it. On top of this, the hairspray technique has been used with a water-based acrylic topcoat, which he then chipped and scratched away to give a realistic weathered finish.

11



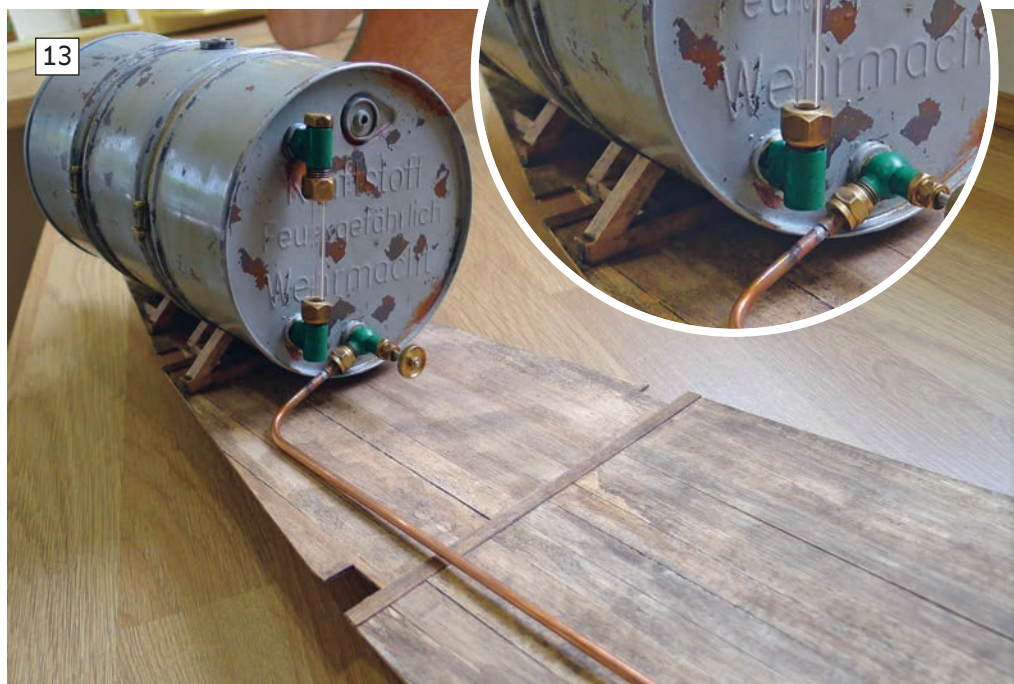
The finished tank before final weathering of the fittings: the sight glass and the globe valve have been painted to match up with the finish that will be applied to the rest of the machinery.

12



ABOVE: The cradle for the tank completed, with two boiler bands fitted ready to take the feed tank. The side braces do most of the work of holding the tank in place, with the boiler bands simply holding it down.

13



The tank located on the deck, with the boiler feed supply pipe fitted. In keeping with the weathered appearance, the cold water and gas pipe work will all be left as polished copper, with weathered fittings, while the steam pipes will be lagged with suitably weathered rough string.

drilled to suit the bushes and the bushes were then carefully fitted with gentle and controlled heating and soldering (see **Photo 9**). Once that was done the tanks could be finished with suitably chipped and weathered paint effects (see **Photo 10**) before the fittings were added with some thread tape to seal them (see **Photo 11**). Finally, the fittings themselves were painted and weathered.

Then came the challenge of mounting a circular tank onto a flat deck. I decided to go for a wooden cradle, built in situ, with the tank held in place (after checking the location with the deck in the boat) and held down with some boiler banding (see **Photo 12**). It didn't need to be too tightly held down, just enough

to prevent movement in a choppy water, as the cradle does most of the work of keeping it in place (see **Photo 13**).

Once the tank was located and fixed to the cradle the whole deck assembly was then weathered with some watered-down washes and the upper surface of the deck sealed with two coats of matt polyurethane varnish to protect everything.

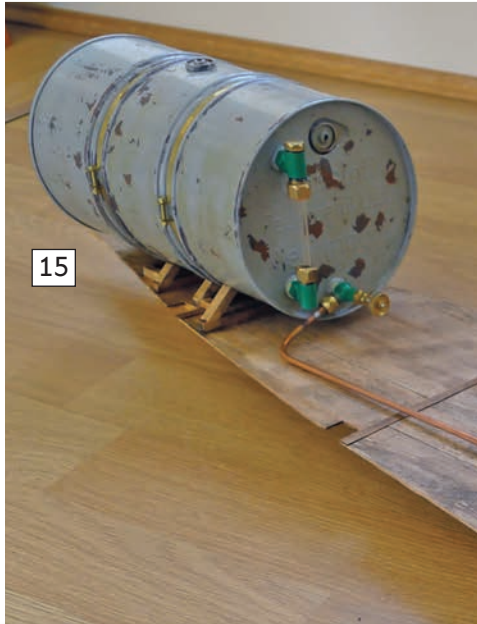
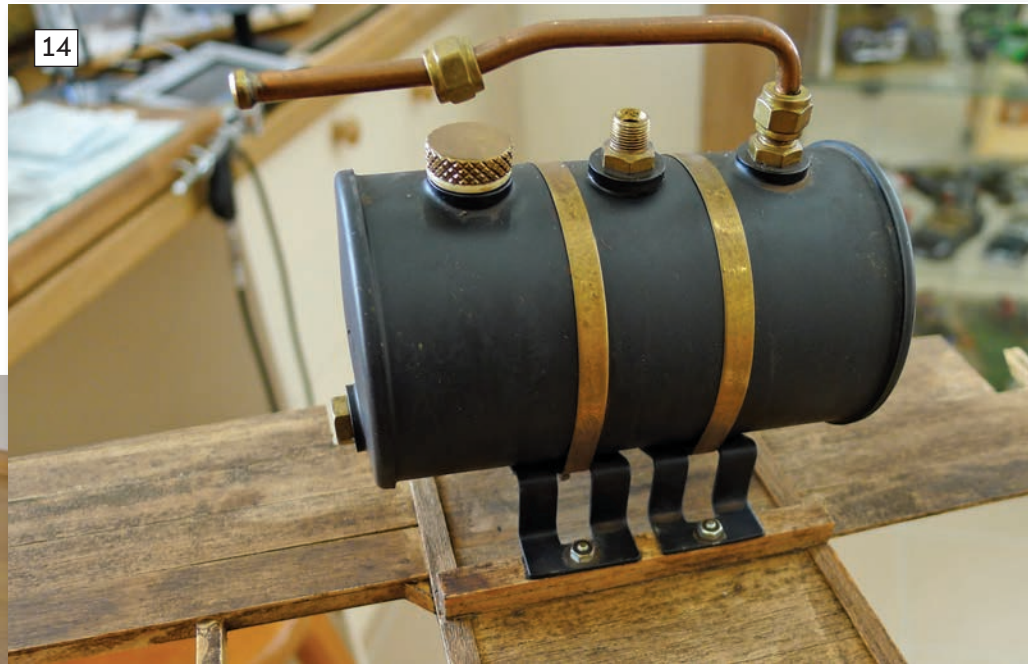
The separator tank

As the separator tank had its own mounting brackets, which incorporated drilled feet, fitting it to the deck was relatively straightforward.

Two bearers were glued to the decking to

RIGHT: The separator tank sat on its two bearers. The thin planked deck wouldn't be strong enough to hold the tank firm but the two bearers, which transfer the load to the two adjacent transverse frames, stiffen everything suitably.

BELOW: The complete modular deck unit ready for all the rest of the machinery to be added. This can be removed at any time in the future, as it simply sits in place and is held down by the weight of fitted items.



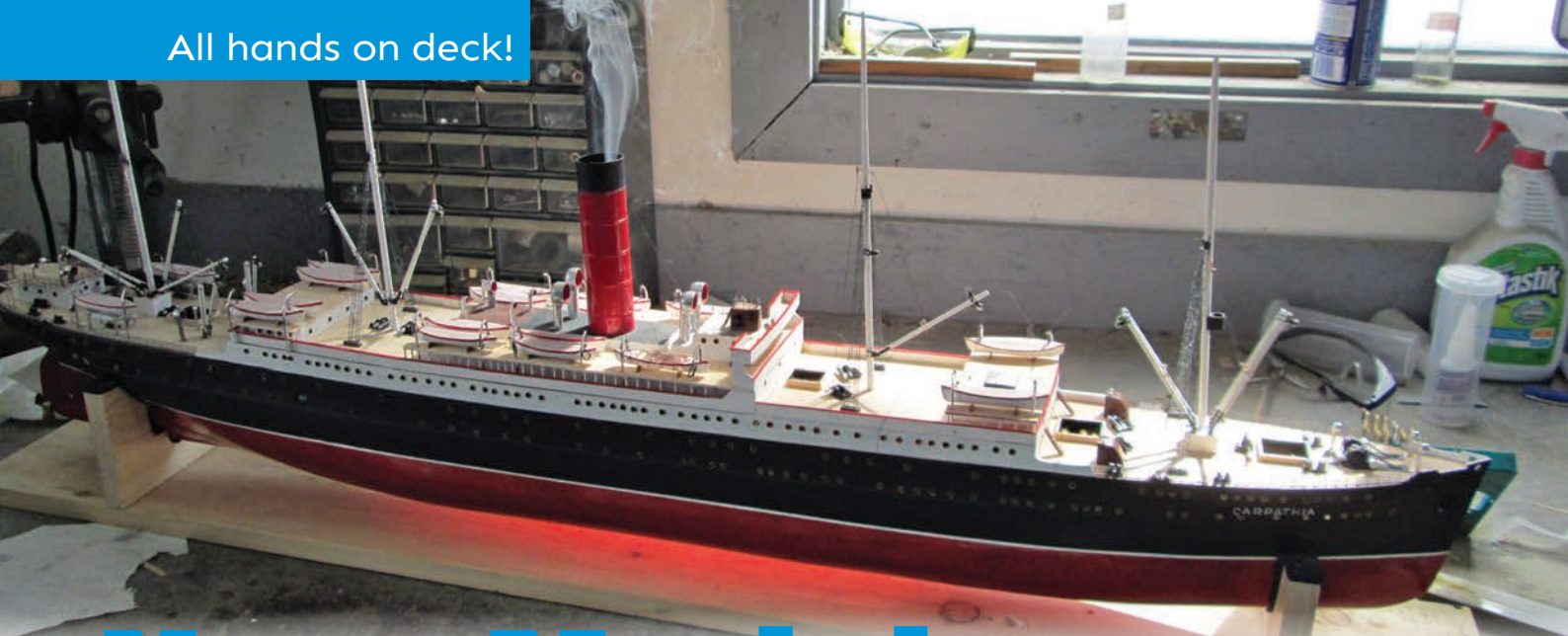
INSET: The feed tank sat neatly in the forward bow section. The tanks have a plastic plug in the side, which will be aligned with a small hole in the deck to enable a piece of copper pipe to be fitted into it for filling from outside. This can be done while watching the sight glass.

BELOW: The deck in place, ready for the next part of the build. Note the available bearers for the boiler and the engine fixed to the hull to keep the weight of those items away from the deck and directly into the boat structure.

spread the load a bit, with captive screws fitted again from behind before the tank was dropped in place and held down with some stainless-steel nuts. The tank was given a coat of a dirty enamel wash to help it visually blend in and I then spent around two hours trying to remember where I'd put the filler cap 13 years ago! It was eventually located in one of the compartments of a toolbox, much to my relief and fitted again to keep it safe (see **Photo 14**).

The deck could then be dropped into the hull as a complete modular unit (see **Photo 15**), with the feed tank sitting neatly in the bow (see **Photo 16**), ready for other components to be fitted (see **Photo 17**) – but more on that in next month's issue. ●





Your Models

ABOVE: Clark's impressive 1:144 scale scratch-built working model of *Carpathia*.

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



*Despite the perilous nature of *Carpathia*'s voyage from Halifax, Canada to the European shores during World War I, and the cramped conditions onboard, moral in this charming photo, thankfully preserved in Clark Seaborn's family archive, appears to be high!*

RMS CARPATHIA & CO

I was interested to see your *Carpathia* article in the October 2021. Since receiving some of old family photos from dad some years ago, I've always been fascinated by the history of the famous rescue ship *RMS Carpathia*, on which my grandfather sailed to the European battles during World War I. She, therefore, became my model boat building project of choice over the long Covid winter of 2020-21, and I built her to 1:144 scale, as accurately as possible using some museum drawings, internet photos and my grandfather's family photos (more on which below) for reference purposes.

Launched in 1902 at Newcastle upon Tyne England, *Carpathia* was designed for

the travel of Hungarian immigrants to North America. She was not a fast or classy ship in the Cunard fleet, and with her low headroom decks, numerous deck hoists, hatches and cattle stalls was designed to haul cattle and livestock owned by the immigrant farmers from the primitive dock facilities on what is now the Croatian coast.

On the late night of April 14, 1912, *Carpathia* was steaming eastbound about 400 miles out of New York City when her radio operator received a message that the unsinkable *Titanic* had struck an iceberg and was, in fact, sinking. *Carpathia*'s Captain Arthur Rostron, after having verified the

message was not a hoax and gathered his wits about him, changed course for *Titanic*'s reported position. During the 60 miles ahead, he prepared his crew and lifeboats to assist. He summoned all stokers to shovel coal fuel into her boilers, shut off cabin heat to have all steam pressure available for speed, and pushed the ship from her designed maximum speed of 14 knots up to 17 knots. As he closed in on the site of the *Titanic* the many floating icebergs created real peril for the speeding *Carpathia*. *Carpathia* was not equipped with a headlight and simply relied on a lone lookout person high up in the crow's nest of the forward mast. Captain Rostron, a religious man, later reflected: "I can only conclude another hand than mine was on the helm".

As history reported, the *Carpathia* and crew saved some 703 passengers that night, who had managed to make it to one of the open lifeboats but who were still in danger, many of them being soaking wet, freezing and in shock. Urgent need of medical attention and provisions for the survivors made it necessary for Captain Rostron to return to New York, where he was lauded for his decisive action. In recognition of his actions, Cunard promoted Rostron to the captaincy of Cunard's largest liner, the *Mauretania*.

Slightly more than two years after the rescue, Canada became embroiled in World War I. *Carpathia* was commissioned for the Canadian expeditionary forces passage from Halifax to the European shores. It would seem that the cattle accommodation of *Carpathia* was ideally suited to the task of carrying of troops destined for the muddy trenches of the Western Front. My grandfather, Lieutenant Colonel W.E. Seaborn made that passage (April 10-22, 1917) along the 600-man 210th Battalion, recruited from around Moose Jaw, Saskatchewan,

Our family photos of this voyage show my grandfather on the ship's bridge together with three other senior officers from other battalions, as well as the newly appointed Captain Prothero of the *Carpathia*. One of the photos shows the army officers witnessing the loading and sighting of the 4.7-inch cannon installed on *Carpathia* to deter the



ABOVE LEFT: As well as performing beautifully on the water, Clark's build has allowed him to have real fun with extra detailing scenarios, as can be evidenced from this horse/donkey being loaded into the hold! ABOVE RIGHT: Clark's grandfather on the Carpathia's bridge, together with three other senior officers from other battalions, as well as the ship's newly appointed Captain Prothero.

German submarines lurking in the Atlantic. Carpathia continued this perilous wartime work until July 17, 1918, when she was torpedoed by the German sub-U-55, Captain Prothero being one of the last to exit the sinking Carpathia into a lifeboat.

In 2001 an underwater search team headed by novelist Clive Cussler located and photographed Carpathia on the ocean bottom some 268 miles off Plymouth. Photos do not show the installed cannon.

My son, Jeff, recently helped me with a short movie of the ship sailing on a local lagoon, and in his humour added *The Love Boat* theme song as a sound track (this can be viewed on YouTube by keying <https://youtube.com/watch?v=LqQIKLkHTs> into your search engine). Obviously, it was not a 'Love Boat' for my grandfather; the troops mostly were crowded into cramped quarters, even cattle stalls, as the ship was originally intended for immigrant and cattle hauling. It was a perilous journey, too, as a German submarine torpedoed the ship in the year following grandfather's voyage.

I've also prepared an information board on this vessel and at some point – I expect when I've had sufficient fun making the environmentalists mad with the smoke trails my model leaves around the public lagoon here in Calgary – I'll maybe I'll find a place for her in the military archives in Moose Jaw, Saskatchewan (where my grandfather lived for most of his life).

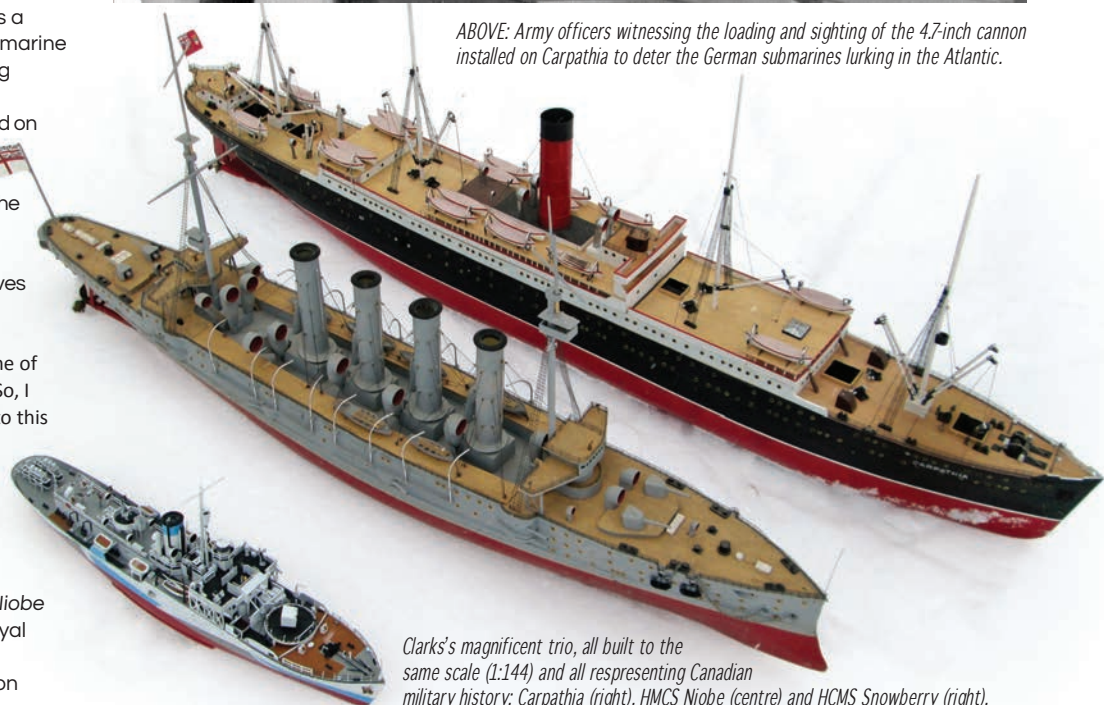
My 1:144 Carpathia is, however, only one of the projects I've undertaken in this scale. So, I am also sending a photo of all three built to this same scale, and all related to Canadian military history.

Along with Carpathia, the grey vessel pictured is the cruiser HMCS Niobe, built in basswood and based on photos and drawings ordered from your Maritime Museum in Greenwich. Niobe was the first vessel operated by the Royal Canadian Navy when purchased from Britain in 1910, operating from Halifax on our east coast. During World War I she was employed off New York harbour intercepting German freighters carrying war materials. The small vessel is the Flower class corvette, HMCS Snowberry, built from a Revell kit and powered by R/C.

It is interesting that the cruiser Niobe was by far the largest Canadian navy vessel until the years following World War II, when



ABOVE: Army officers witnessing the loading and sighting of the 4.7-inch cannon installed on Carpathia to deter the German submarines lurking in the Atlantic.

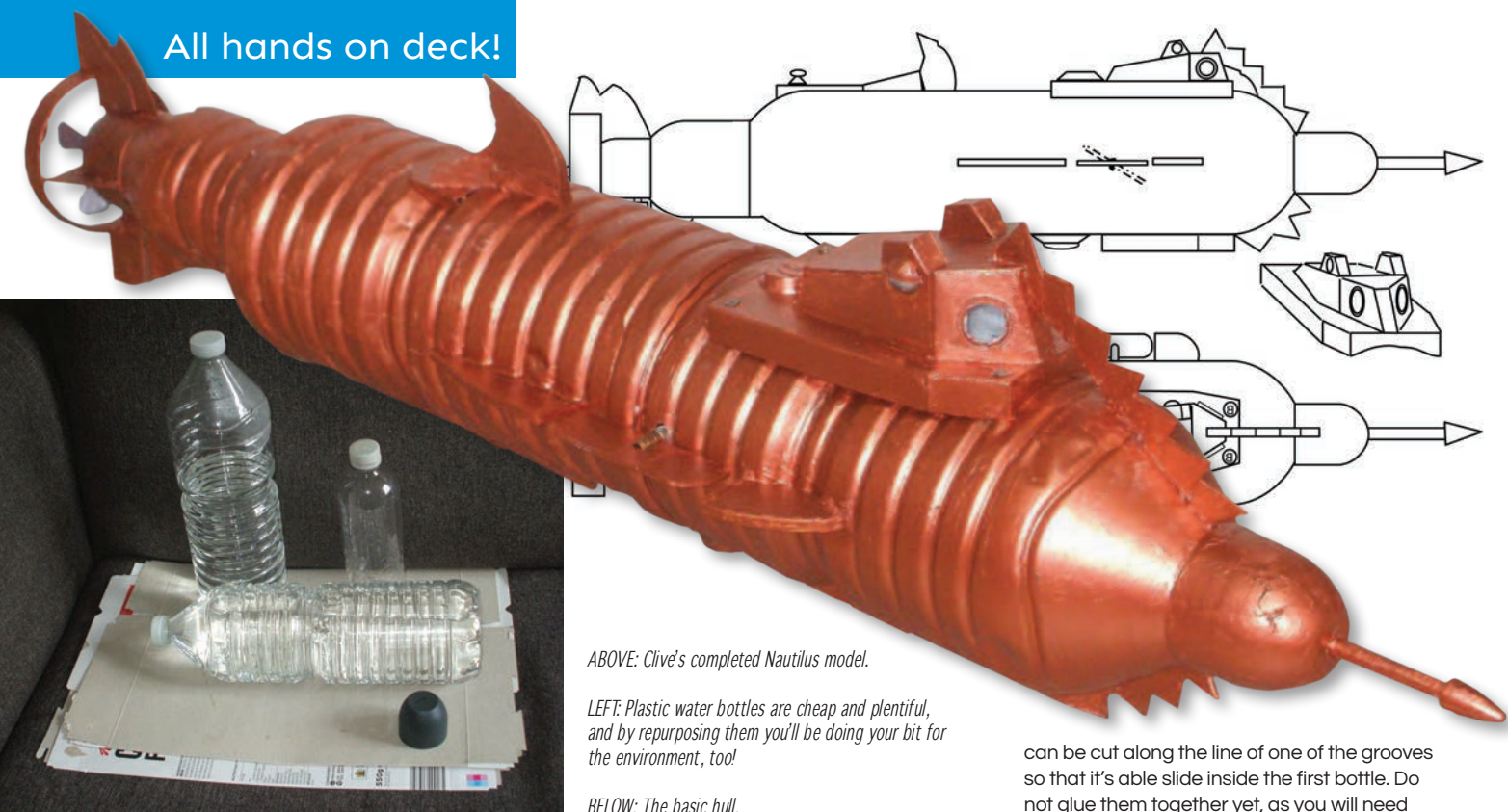


Clark's magnificent trio, all built to the same scale (1:144) and all representing Canadian military history: Carpathia (right), HMCS Niobe (centre) and HMCS Snowberry (left).

Canada purchased aircraft carriers. The typical RCN ships during the inter-war and World War II years were corvettes, frigates and destroyers, most barely exceeding 1,000 tons displacement.

CLARK SEABORN
CALGARY, ALBERTA, CANADA

Thank you so much for affording us the honour and privilege of being able to share these truly fascinating old photos from your family archive, John – and, of course, your superb models of the RMS Carpathia, HMCS Niobe and HMCS Snowberry. Ed



ABOVE: Clive's completed Nautilus model.

LEFT: Plastic water bottles are cheap and plentiful, and by repurposing them you'll be doing your bit for the environment, too!

BELOW: The basic hull.

can be cut along the line of one of the grooves so that it's able slide inside the first bottle. Do not glue them together yet, as you will need access to fit your interior before permanently fixing these two parts together. You can, if you wish, however, tape them together temporarily.

Machinery compartment

You can let your imagination run riot here. When Jules Verne's novel was published back in 1870, no-one had any idea that the next Nautilus would be the USS Nautilus, the world's first operational nuclear submarine (commissioned in 1954). Nuclear submarines could eventually travel 'Twenty Thousand Leagues Under the Sea' if enough food could be stored and the crew's sanity survived!

Suggested materials for construction of the interior

Listed below are some of the bits and pieces I used, but feel free to get creative!

- * The top off a washing machine liquid soap bottle
- * An old lipstick casing (not mine!)
- * 2 x washing up bottle tops and the caps of toothpaste tubes (to construct my version of pumps with electric motors on top)
- * Safety razor guards (for supporting brackets)
- * Bendy drinking straws (invaluable!)
- * The packaging for two fillets of fresh fish (which I used to make up the deck – I know it is a bit well-worn, but think outside the box!)
- * Press studs (for the valve hand wheels on the piping) – these were held in place with dressmaking pins

Astern

The base of the 500 ml bottle needs to be removed and fixed in place aft to form the 'main motor' compartment. I then fixed a deodorant stick top (with a flat face) to that; this in turn made securing my home-made propeller easier. There were many propeller designs over the years (they are probably still working on improving designs today) but I settled for an old-fashioned looking four-bladed version, made from scrap cardboard. You may have a suitable brass one in your spares box or could perhaps buy one.



NAUTILUS FOR NEXT TO NOTHING

Following on from my two-part Midget Nuclear Submarine feature published in the November and December 2021 issues of Model Boats, I thought I would share another fun, easy-build, project of a similar nature. The idea for this model goes back a long way. I'm not sure when I first saw the film *Twenty Thousand Leagues Under the Sea*, but how Jules Verne envisioned the possibilities of future submarines was rather amazing and it seemed to have stayed with me, prompting me to volunteer for service in submarines in the 60s, just as the nuclear era emerged.

This static (non-working) model can be put together mostly from materials found around the home and using basic tools. I make no apologies to the more seasoned model boat builders amongst you for its sheer simplicity, as the whole idea behind the concept is to encourage youngsters and newcomers to the hobby to take the plunge by providing them with a (possibly first) project that is easy, inexpensive, environmentally friendly and a whole lot of fun!

There are two possibilities; my version shows the hull not fully painted, allowing views of the machinery section and some details for'd, but if you want to simplify things yet further, you can just opt to model the hull, the casing and the conning tower.

Materials required

For this you will need:

- * 2 x 2-litre plastic water bottles
- * 1 x 500 ml plastic water bottle
- * 2 x caps from roll-on deodorant sticks
- * Strong cardboard (cut from cereal boxes or similar)

N.B. Some plastic drink bottles do not feature the grooves seen on mine (e.g., lemonade bottles) but can, of course, also be used.

The very easy build version

You will first need to remove the base end of one of the 2-litre bottles, making sure you cut around the point of maximum diameter, before gluing your two bottles together. Once you've done this, leave your partially constructed new 'hull' on a flat surface, to keep everything level while the adhesive sets. While waiting, I built a rudimentary stand out of strong card, to keep the hull steady during the rest of the build.

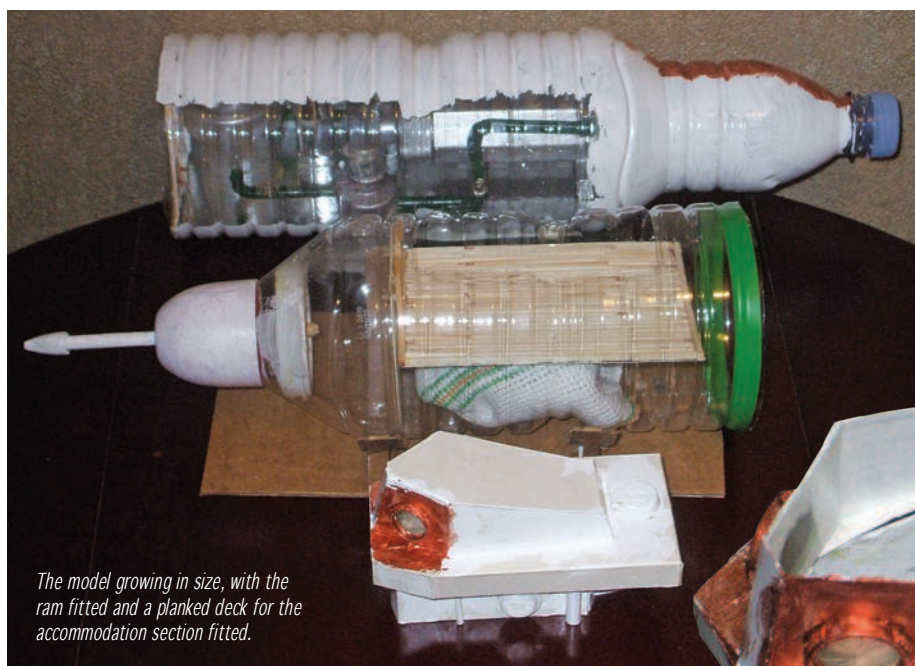
The next step is to remove the base of the 500 ml bottle and glue this to one end, before fitting the deodorant top to the other. You now have your basic hull. Easy!

The easy build (but more detailed) version

If you're going for this option, remove the bases of both 2-litre bottles. Again, one needs to be cut at its maximum diameter, while the other



ABOVE: All the 'bits' required for this project are items you're likely to already have at the home.



The model growing in size, with the ram fitted and a planked deck for the accommodation section fitted.

At the bow

On my model, at the bow you will see a ram fitted. For this I used a short length of 5mm wooden dowel and at the end of the ram I fitted a cut-down cap from a ballpoint – although a short cone of cardboard, strengthened with adhesive, could be fitted. You could, of course, simply sharpen the dowel with one of those little devices that sharpens pencils, thereby avoiding the need to use a knife).

An aside, when Verne designed his submarine, the ram fitted to the bows of battleships was still considered to be a powerful weapon. During Royal Navy exercises off Tripoli in 1893, however, HMS Camperdown accidentally rammed the starboard side of HMS Victoria, 12-feet below the waterline. Victoria capsized in just twelve minutes, with the death

of 358 sailors. So, perhaps this incident heralded the beginning of the end for the ram.

One of the other ideas that Verne included in his plans was an 'air-lock', allowing frogmen (divers) to exit and re-enter the submarine, and this was fitted to the World War II X-class midget submarines. Anyway, I digress!

The Conning position

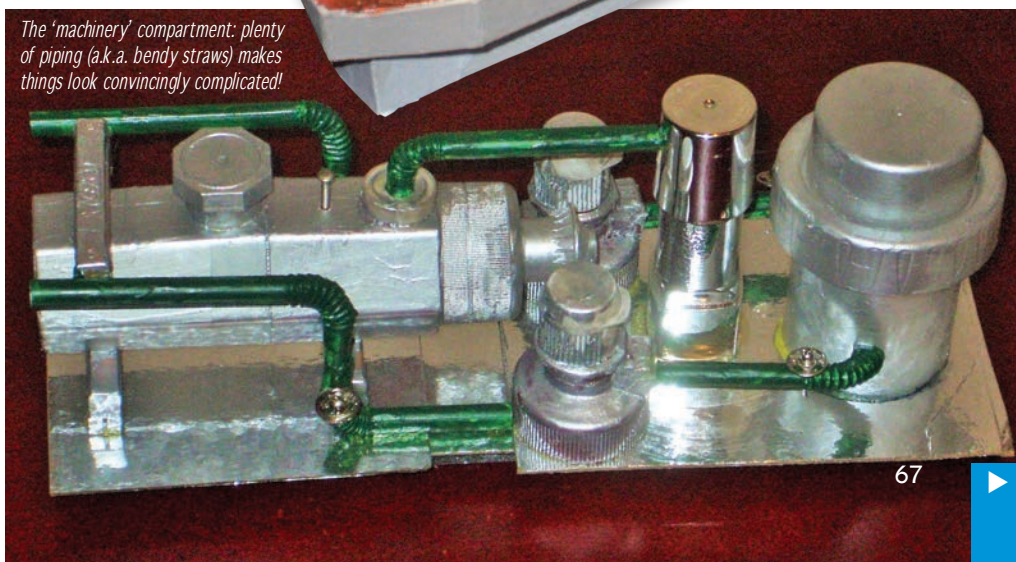
The plan and photos included here should help with construction of your model, but as this submarine is fictional, obviously the materials and instructions don't have to be followed verbatim. I used strong cardboard to build my version, starting with an inverted tray, which I tapered at its front end, with then cut both ends to fit the curvature of the hull (see Plan on page 68). The upper section contains the circular lookout windows, and above that the 'eyes' that caused other ships to believe it was an underwater monster! My two eyeballs were the domes of mirror screws, glued in place with painted 'eyelids' covering the top halves, but you may well have your own ingenious own solution.

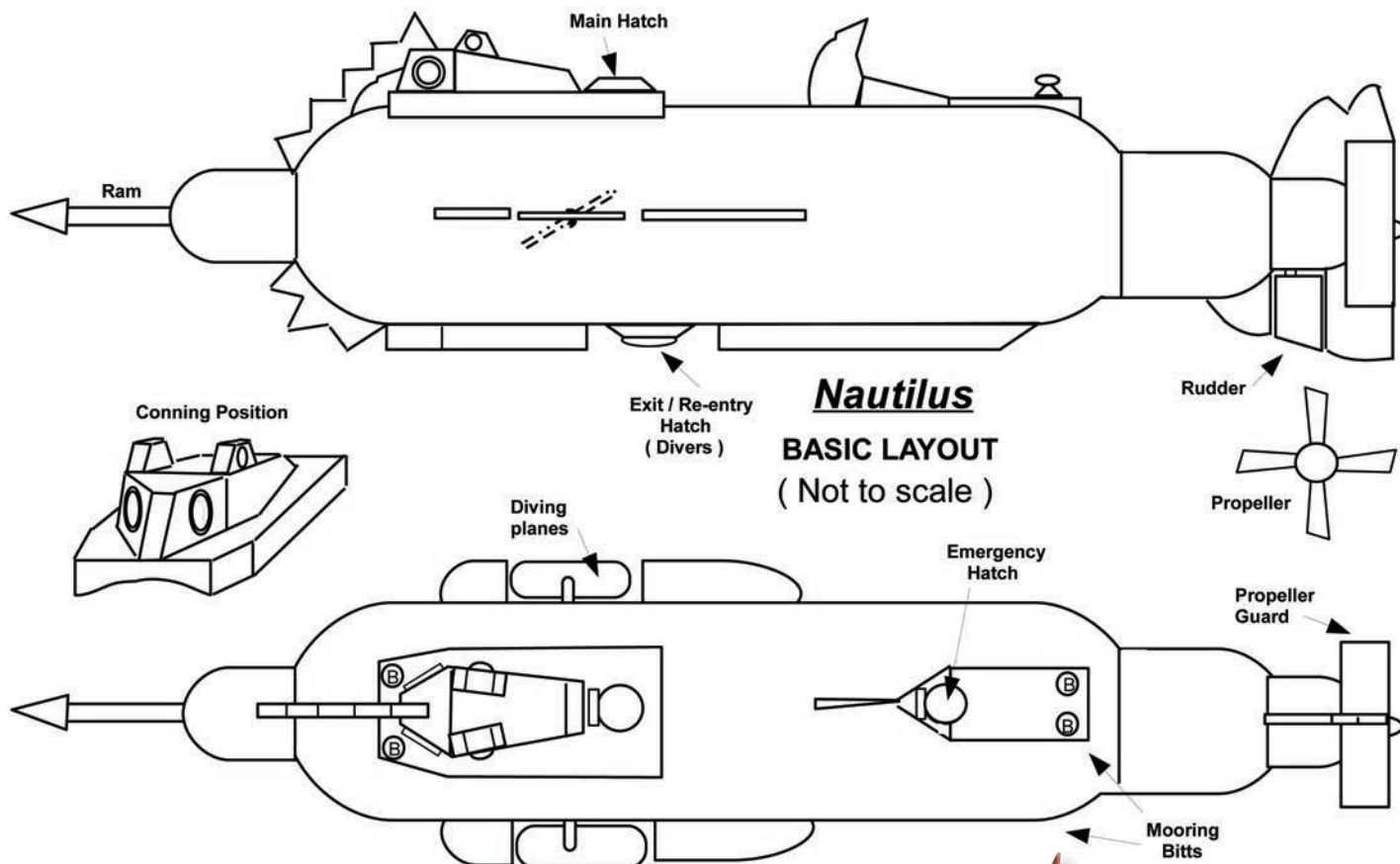
Once complete, I knew nothing would be particularly visible through the windows, but for my own satisfaction I fitted a telegraph handle (for controlling the main engine) and a voice pipe to the main steering compartment below, in the safety of the hull – all optional, of course.

Aft on, the casing for the main entry hatch (see Plan) was formed simply from the cap off a toothpaste tube and cardboard hinges. Most casings are not watertight, and air can

RIGHT: The conning position being constructed.

The 'machinery' compartment: plenty of piping (a.k.a. bendy straws) makes things look convincingly complicated!





be trapped there, making diving slower, so I fitted blowholes to release the air. Also, I included mooring bitts (bollards): two on the casing for'd, and two further aft (see Plan)

Aft of the conning position is a 'dorsal fin' protecting the emergency exit hatch (for which another toothpaste top cap was used). Aft, again, is a walkway leading to the after mooring bitts.

Diving planes (hydroplanes, in modern terms)

There's one pair of diving planes, fitted amidship, and protected by fins, fore and aft (see Plan).

The diving planes, the fins (both protective and the attacking saw-teeth ones for'd), the propeller guard and its supports, the rudder, etc, were all made using double thickness card. Others may prefer to use plastic sheet; there are no hard and hard and fast rules here. The real beauty of 'junk modelling' is, of course, if you get something wrong it's not going to be a costly mistake, as you just scrap it and start again.

Keel

The keel is square shaped cross section and split in two to allow the exit/re-entry facility. Before I finally attached the keel(s) to my hull, I added small scarp balsa blocks inside each one so that I could fit a support base below the

hull, which could be removed again should the need arise. My base was simply a repurposed plastic tray of the type supermarkets use to package fillets of meat or fish.

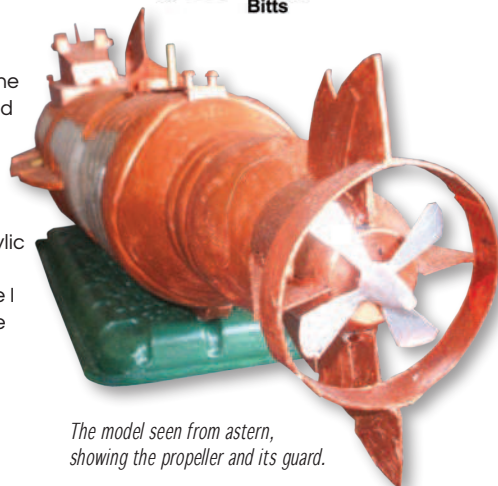
Painting

I got my paint from a local hobby store; acrylic copper, but, of course, how you choose to finish your model is up to you. Also, because I was going to allow some of the interior to be visible, I painted the inside of the hull white.

Depth of detail

The submarine built for the film (easy to find images of online) includes a small ship's boat, stowed integrally in the after casing. To simplify my build, I didn't bother to include this; I told myself I could add it later, but of course I haven't! It's yet another good example, though, of how, while things can be kept as basic as a children's 'Blue Peter'-type project, there's enormous scope when it comes to the level and complexity of detail it's possible to incorporate with a little bit of modelling skill and a whole lot of imagination. Enjoy!

CLIVE HALLIWELL
EMAIL



The model seen from astern, showing the propeller and its guard.

Bravo on coming up with another easy, fun, affordable and much-appreciated modelling project, Clive! As you point out, it may not appeal to those who've been building model ships/boats for decades now, but I think we need to be doing all we can to keep things financially inclusive and encourage youngster and newcomers into trying out the hobby **Ed**



Detail of Nautilus as completed by Clive.



MIDAS

Following up on my experiments with water ballasting, as documented my article That Sinking Feeling that you kindly published in the May issue, I thought fellow readers might

like to see a photo of Midas finally on the water – and, thankfully, still afloat!

JOHN MILESON
EMAIL

*Hang on, I'll grab my waders!
Just kidding, John.
She's a real beauty. Ed*



HMS GRENVILLE

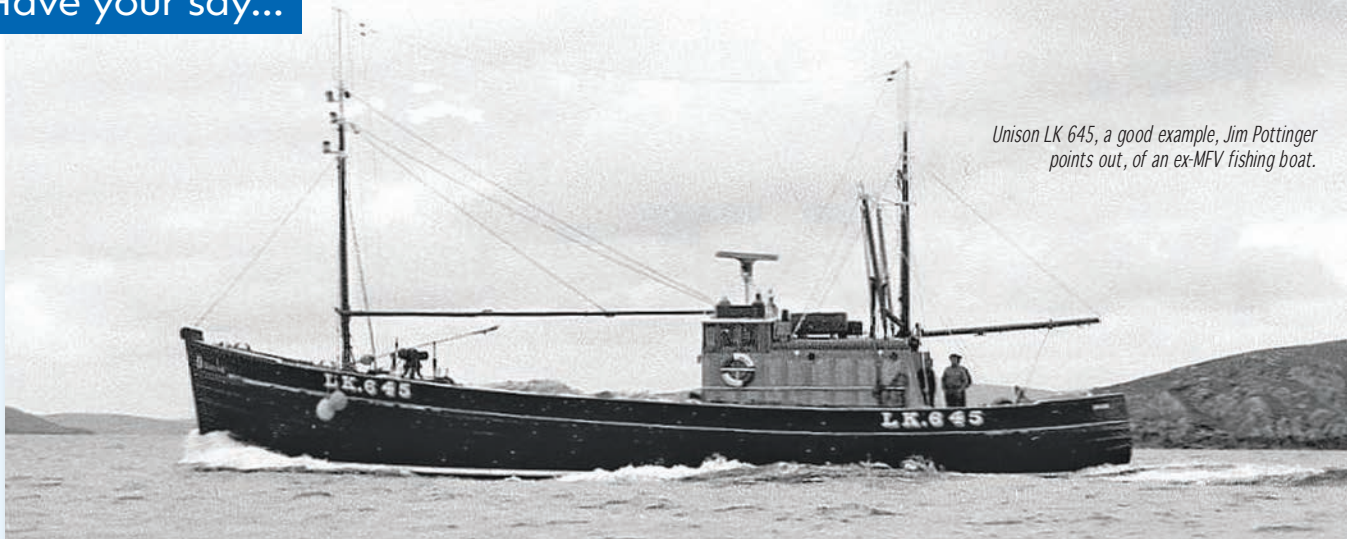
You featured my 'Overlord' model railway in the April 2020 issue, just as the first lockdown started and the world turned on its head. When the photos included were taken, both my HMS Grenville

and SS Jeremiah O'Brien were mere static exhibits and had sadly been so for far too many years. I did say I was going to get them sailing again eventually. Well, I thought you would like to know that the destroyer has now successfully made it onto

the water at Wilton Park, Batley, and even though I am somewhat biased, she looks and sails darned well after all this time of inactivity. Hopefully, the Liberty Ship will not be far behind.

CHRIS MEAD
EMAIL

Excellent news and well done, Chris. I, and I'm sure your fellow readers, are looking forward to also seeing the SS Jeremiah O'Brien on the water, too – no pressure, then! Ed



Unison LK 645, a good example, Jim Pottinger points out, of an ex-MFV fishing boat.

ADMIRALTY MFVs

I was most pleased to see Charles Chamber's excellent and realistic 'MFV Ocean Crest' model in the May issue of Model Boats. I drew the original model plans for this a number of years ago (which show it's a 75ft, not 65ft, boat) for a company I

think was then called Jotika, who developed these into a kit. Actually, this example was not known as Ocean class but was in fact one of the vessels known collectively as Admiralty MFVs, a series of 45ft, 61.5ft, 75ft (as per the model) and 90ft craft.

The latter was developed from a Richards Shipbuilders design of a steel hull, while the others were based on typical Scottish fishing boats hulls. I've drawn model plans for all these types; these plans having been published in past issues of either Model Boats or Marine Modelling.

I am sending you a photo of Unison LK 645, an example of

the 75ft class representative of rig when converted as a fishing boat; in most cases a new wheelhouse was fitted, and the deckhouse shortened.

**JIM POTTINGER
EMAIL**

A font of knowledge as ever, Jim. Much appreciated! Fabulous photo, too, by the way. Ed

Your Letters

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



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

FOLKBOAT HOPE



in the Your Models section of the mag. We used to sail a 1:1 version around the west coast of Scotland, which was sold on decades ago. I have, however, always hankered after a decent-sized sailing model, which I know are popular sur-le-continent, particularly in Germany and Sweden (from where the design originates), and these, too, are around 1 metre in length.

So, I'm just wondering if Charles accepts commissions and if he would undertake another build on this basis? Would it be possible for you to check out this prospect with him and/or provide an email address or other contact link with his permission?

**GORDON McLELLAND
LLANTRISANT, WALES**

Having fond memories of sailing a 1:1 scale folkboat around the west coast of Scotland many years ago, it was love at first sight when Gordon McLelland spotted Charles Chambers charming little builds in the Your Models section of last month's issue.

I wanted to express my gratitude for the latest, as 'they' say where I come from "pure dead brilliant", May issue of Model Boats, received today. It's great news about the transfer of ownership and that future sailings are secure!

I was especially intrigued and impressed by Charles Chambers' folkboat models

I'm really glad you enjoyed the May issue and I love that expression, Gordon. I may just have to adopt it, although I'm sure won't sound half as good in my accent as I imagine it does in yours!

Very envious of your sailing trips around the beautiful west coast of Scotland – there surely can't be many places in the world where the scenery gets better.

I've passed your details on to Charles and he assures me he will be in touch, so fingers crossed you'll get your folkboat! Ed

Next month in **model Boats**

In our July 2022 issue, on sale from June 17, 2022, be sure not to miss...



• A FREE PULL-OUT PLAN FOR OSPREY

Plus a helpful guide to building this pretty little freelance trip boat



• Bristol Channel Pilot Cutter

Back to the 'Age of Romance' – via the potting shed!



• USS Roosevelt (DDG-80)

A 1:96 scale model of this Arleigh Burke-class destroyer with a particularly nifty working feature!

PLUS A thematically varied selection of feature-length articles, all your favourite regular pages – including Your Models, Your Letters, news, reviews – and lots more (Please note: content may be subject to change)

You will find more about the exciting content coming next, features of particular interest you may have missed in past editions and details of the very latest subscription offers on our website at www.modelboats.co.uk

You can, of course, order your copy of the July 2022 issue, which goes on sale at all good newsagents from June 17, now, but why not treat yourself to an annual subscription, as monthly copies will then be delivered directly to your door.

What's more, the unique subscriber number allocated to you will provide website access to digital copies of the current issue and to our archive of back numbers. It will also unlock subscriber exclusive bonus material not featured in the magazine.

If you can't always find a copy of this magazine, help is at hand!



Complete this form and hand in at your local store, they'll arrange for a copy of each issue to be reserved for you. Some stores may even be able to arrange for it to be delivered to your home. Just ask!

Please reserve/deliver my copy of
on a regular basis, starting with issue.....

Title..... First name.....

Surname.....

Address.....

.....

.....

Postcode.....

Telephone number.....

If you don't want to miss an issue





Starling Models

The UK specialists in small scale ship kits and accessories

New releases!



STK11
HMS Glamorgan County Class DDG, 1982
1/700



STK15
Bangor class minesweepers
HMS Rhyl and HMCS Kelowna
1/350

Resin kits with photoetched and 3d printed parts and decals



Visit our online shop at www.starling-models.co.uk

FOR SALE DUE TO ILLNESS

BILLINGS COLIN ARCHER 414

Plastic hull with fully planked deck and all deck fittings either fitted or made.
Masts and rigging to finish, original box and contents, instructions, certificate included. Approx 127cm long.
New kit about £495, already cost me well over £450. **Offers please.** Can be static or R/C

FIBREGLASS FAIREY TYPE HULL

I think a Supermarine, unstated with detachable superstructure,
hull 38 inches long, with cradle. **£65** ideal for R/C lots of room in hull!

POWERCRAFT DRILL STAND

new never used **£20**

UNIMAT 1 CLASSIC

Lathe set, hardly used as new. **£170**

AERONAUGHT CLASSIC SPEEDBOAT

Fully made with motor, prop and rudder fitted. **£45**

For more information call Terry Calvert

0121 709 2279 or email: tcsohull@blueyonder.co.uk

Pickup from Solihull only

Working Plans for Model Construction

The Entire Sailing Ship & Power Craft Series of Authoritative Drawings By Harold A Underhill, AMIES

PUBLICATIONS FOR MAKING MODELS

- Plank -on-Frame , Vol I
- Plank -on-Frame , Vol II
- Mast and Rigging
- Deep Water Sail
- Sailing Ships Rigs and Rigging
- Sail Training and Cadet Ships

Illustrated list of 70 Sailing Ship Designs £4.00

Illustrated list of 35 Power Craft £4.00



Please write for further information and catalogue to:

Brown, Son & Ferguson, Ltd

Unit 1A, 426 Drumoyne Road, Glasgow, G51 4DA

Tel: +44 (0) 141 883 0141

Email: info@skipper.co.uk Website: www.skipper.co.uk



www.nylet.co.uk

1932 – 90 years of sailmaking
The longest established professional model sailmakers in the world.

Everything for the model yachtsman, 600 items in price list. Fine Sails with "wind catching" shape. Makers of sails to The National Maritime Museum Cornwall.

Nylet Mail Order Service is operating normally. The Finest Quality sails, Special Commissions undertaken for Museums & Collectors. IOM racing sails in racing scrim or white Dacron. Class sails, J Class. Plus all the popular designs, Starlet, Victoria, Seawind, Fairwind & 180 other sail suits. Fine "Vintage" cotton sails made incl STAR, Bassett Lowke, Alexander, Moonbeam, Mascotte, Breeze, Katie (Sarik). Large range quality deck & mast fittings, wires, cordage, brass & st. steel screws, 7075 alum mast/boom tubing, tools, IOM sail rig carry/stowage bags, sailwinches, Nylet 'how to' booklets. Specialist Vintage Yacht Restoration Service.

Phone or email your order for fast response.

Prices & Products see website

(A5 paper catalogue £4 UK)

Sending letters/parcels, phone for postal address.

Some of many customer comments -

- The sails are wonderful, they fit like a glove! **Mark, Surrey.**
- Cotton sails for Katie arrived – they look great, much appreciated. **Andy, Lancs.**
- Starlet sails arrived today and am delighted with the quality. **Bill, Northants.**
- Thanks again for your great products and service! **KW, Hong Kong.**
- Just received my glorious suit! Magnificent!
I raise a glass to you Sir, **Roger, USA.**

Fast world-wide mail order
(since 1958)



NYLET, Salisbury, UK
Telephones: 01722 239251 & 07474 939535
Email: frank.nylet@outlook.com

Fast world-wide mail order

PayPal & VISA accepted

FLEETSCALE

WWW.FLEETSCALE.COM

GLASSFIBRE BOAT & WARSHIP HULLS, FITTINGS AND SEMI KITS IN MOST SCALES AND ERAS

EXTENSIVE SECURE ONLINE STORE

MILITARY & CIVILIAN RANGES

19TH, 20TH & 21ST CENTURY

IN1/24TH, 1/32ND, 1/48TH, 1/72ND, 1/96TH, 1/128TH

TEL: 01822 832120
FAX: 01822 833938

WESTWARD MOULDINGS LTD

Australia's Premier Maritime Hobby Shop

FLOAT a BOAT

Fine Models Since 1962

48c Wantirna Road, Ringwood Victoria 3134 Australia
Tel. 61 3 9879 2227
www.floataboat.com.au Mail Order

Call Angela to advertise in

model Boats

01507 529411
aprice@mortons.co.uk

CLEVEDON STEAM

Supplier of steam engines, plants and Cheddar Models compatible accessories

Tel: 01326 291390 • Mobile: 07818 044648
www.clevedonsteam.co.uk

www.maritime-models.co.uk

SECURE ON-LINE SHOPPING – MAIL ORDER ONLY

We stock a range of fittings from Aeronaut, Caldercraft, Krick and Robbe also tools, paints, props, propshafts, couplings and much more check out the web-site for our full range.

Official stockists of BECC accessories and kits from Caldercraft, Krick & Aerokits. Commissions & restorations also undertaken!

E-mail: info@maritime-models.co.uk
Telephone: 01432 263 917 or 07786 781 421

Balsa Oak **SLEC** Ash Poplar

Spruce Cherry

Obechi **Manufacturing** Cedar

Plywood's **Buy on Line** Pine Bass

Beech **www.slecuk.com** Mahogany

Laser & Router Cutting Service

Slec Ltd Tel 01 953 885279 Fax 01 953 889393
E-mail: sales@slecuk.com

Call Angela to advertise in

model Boats

01507 529411
a.price@mortons.co.uk

Starling Models The UK specialists in small scale ship kits and accessories

visit our online shop: www.starling-models.co.uk

MANTUA MODEL **www.mantua-model.co.uk**

179 Dedworth Road Windsor Berks SL4 4JN Tel: 01753 856321

For all your modelling needs.

Model ship and boat specialist - Radio Control.
All types of wood - Lime - Walnut - Mahogany
Spruce - Balsa - Ply

Distributor for Mantua Model of Italy
Mantua Sergal and Panart model kits fittings and accessories fast mail order service

Tugging Ahead.....with

MOBILE MARINE MODELS

MODEL TUGNOLOGY.....at its Best

Britain's Leading Manufacturer of :-
Tugs ; Workboats ; Hulls ; Kits ; Propulsion Gear
Fittings ; Winches ; Lighting Sets ; Budget Boats

Pioneers of the **The Budget Building System**

www.mobilemarinemodels.com

tel: 01522 730731

MODELBOATBITS

www.modelboatbits.com 01597 870437 / 07921 032624 steve@modelboatbits.com

CUSTOM 3D PRINTING

ALWAYS IN STOCK:

Huge range of miniature fixings, including our socket servo screws.

ModelFixings.co.uk

also the home of **ModelBearings.co.uk**

- Taps, Dies & Drills • Adhesives
- Engine & Miniature bearings • Circlips, etc. etc.

Tel/Fax +44 (0)115 854 8791 Email: info@modelfixings.com

Only available direct from the manufacturer, not from any retail outlet!

Club500 Slipway



Club500 Racing...

...continues to be ever popular at our model clubs.

See our Website or call us for details of prices, colours and accessories available.

Model Specifications:

Length: 515 mm

Beam: 180 mm

Includes motor, propshaft & Tube, Propeller, Coupling and Rudder assembly with over 200 possible colour combinations and a rainbow mix of colours.

Ordering is only via the website: www.club500slipway.com
or by telephoning: Malcolm Griffett at Club 500 Slipway, 59 Shackleton Drive, Perton, Wolverhampton WV6 7SA. * Tel/fax: 01902 746905
* Mob: 07884 071122 * email: club500@hotmail.co.uk

Pendle Steam Boilers

Makers of High Quality Affordable
Steam Boilers for Marine and
Stationary Enthusiasts



t: (07452) 875912 • e: sales@pendlesteamboilers.com

www.pendlesteamboilers.com

FAIREY HUNTSMAN



23" £85.50 47" £189.60



WIDE SELECTION OF FITTINGS



FAIREY HUNTRESS 34" £164.99



PILOT BOAT 34" £124.50 NOW IN STOCK



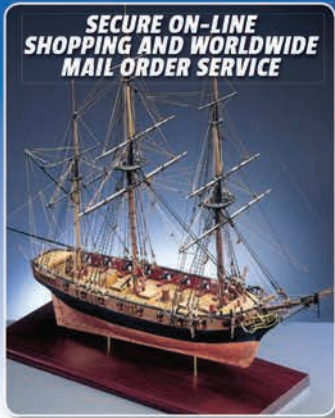
FAIREY SWORDSMAN 25" £112.50

Bring your plans to life with our
Plan Tracing, CNC & Laser cutting service

SLEC Ltd—Units 8-10 Norwich Road Industrial Estate, Watton Norfolk IP25 6DR

Tel: +44 (0)1953 885279 Email : sales@slecuk.com www.slecuk.com

**SECURE ON-LINE
SHOPPING AND WORLDWIDE
MAIL ORDER SERVICE**



**WE HAVE A LARGE RANGE
OF MOTORS, PROP SHAFTS
AND ESC S. TO KEEP YOUR
BOAT MOVING DURING
THE SUMMER.**

CORNWALL MODEL BOATS

www.cornwallmodelboats.co.uk

Highfield Road Industrial Estate, Camelford, Cornwall PL32 9RA

Telephone: **01840 211009**

**SECURE ONLINE SHOPPING
& MAIL ORDER SERVICE**

Free mainland UK delivery on orders over £100
(*excludes surcharge areas)

**WE STOCK A WIDE RANGE OF RADIO CONTROL AND
STATIC DISPLAY KITS, FITTINGS, TOOLS AND PLANS**

**SPECIALIST ADVICE
AVAILABLE!**



**CMB GIFT VOUCHERS
MAKE GREAT BIRTHDAY AND
ANNIVERSARY PRESENTS**

Aeronaut

Classic Sportsboat	67.00
Rabourator Springer Tug	85.99
Jenny 1930s American Motor Boat	129.00
Capri Sport Boat	144.00
Marina	145.99
Raboline: Push lighter	176.95
Hansajolle Sailing Yacht	244.00
Bellissima Sailing Yacht	249.00

Amati

Hannah US Schooner - Ship in a Bottle	44.95
Trabaccolo Merchant Ship Length 400mm	46.96
Bragozzo Venetian Fishing Boat	71.94
Americas Cup Challenger 1:80	73.99
Rainbow J Class Yacht 1:80 Scale	73.99
Egyptian Ship Sahure Dynasty 1:50 Scale	74.00
Greek Bireme 480BC Length 560mm	74.95
Blue Nose Fishing Schooner	83.95
Chinese Pirate Junk 400mm long	84.00
Nina Caravel Of Columbus 1:65 Scale	89.95
Q-Ship Hunter Length 580mm	94.50
Greek Galliot 18th Century 1:65	103.00
Columbia Americas Cup Defender 1958	110.00
New Bedford Whaleboat 1:16 Scale	112.00
Santa Maria 1492 1:65 Scale, Length 540mm	119.00
Bellezza Italian Sports Boat R/C	125.00
Xebec 1753 1:60	144.00
Mayflower English Galleon Length 650mm	159.95
Sexy Lady Riva type launch R/C	160.00
Fifie Scottish Fishing Vessel 1:32 scale R/C	220.00
Robert E Lee Mississippi Steam Boat 1:150	243.95
Endeavour Americas Cup Challenger	255.00
Riva Aquarama - Italian Runabout	279.00
Titanic 1912 1:250 Length 1070mm	370.00
Bismark 1:200 Scale	490.00

Billings

Mini Oseberg Viking Ship B302 - Beginners	20.00
Dana Fishing Cutter B200	49.00
Torborg B910 Sailing / Paddle Boat	51.00
Rainbow Shrimp Cutter B201 - Beginner boat	55.00
Waveney Class RNLI Lifeboat - Beginner boat	56.00
US Coast Guard B100	57.00
Le Bayard Fishing Boat B906	58.00
Henriette Marie Pilot Cutter B904	62.00
Bluenose II B600 Schooner	91.00
America Racing Yacht B609	93.00
HMS Renown B604 50Ft Pinnace	94.00
Roar Ege Viking Ship B703	96.00
Colin Archer B606 Sailing Boat	103.00
Kadet B566 R/C Vacuum Formed Hull - Beginners	110.00
Andrea Gail - Perfect Storm B608 Static Kit	122.00
Phantom B710 R/C Classic American Runabout	124.00
Marie Jeanne B580 Fishing Boat	134.00
Hoga Pearl Harbor Tugboat R/C B708	155.00

Sir Winston Churchill Schooner B706	169.00
African Queen/Vessel used in African Queen Film	185.00
Mayflower B820	187.00
Boulogne Etaples R/C B534 Stern Trawler	188.00
Slo-Mo-Shun B520 R/C Race Boat	194.00
Viking Ship Oseberg B720	241.00
Andrea Gail - Perfect Storm B726 R/C	247.00
Banckert B516 R/C	249.00
Nordkap Trawler B476	269.00
Zwarte Zee Tug B592 R/C	297.00
Wasa B490 - Expert Range	365.00
Norske Love B437 Three Masted Warship	374.00

Caldercraft Static & R/C Boats / Aerokits

Fifie Amaranth C7010	158.00
Sea Commander 34" Cabin Cruiser C2001	219.00
Sea Queen 46" Cabin Cruiser C2000	249.00
Milford StarSide Trawler C7019	340.00
Branarren Swedish Coastal Tanker C7015	450.00
Him Schooner 1804 C9013	79.99
HM Cutter Sherbourne 1763 C9010	99.00
HM Yacht Chatham C9011	119.00
HM Mortar Vessel Convulsion C9012	126.00
HM Schooner Pickle 1778 C9018	174.00
HM Brig Supply 1759 C9005	189.00
HM Brig Badger C9017	224.75
HMAV Bounty C9008	256.99
HMS Snake 1797 C9002	260.00
HMS Mars 1794 C9007	264.00
HMS Cruiser 1797 C9001	269.00
HMS Jalouse 1794 C9007	295.00
HM Bomb Vessel Granado 1756 C9015	298.00
HM Bark Endeavour 1768 C9006	315.00
The Mary Rose Tudor Warship C9004	339.00

Corel Static Display Kits

Starter kits available from	47.00
Liaut Spanish Fishing Boat	72.00
Sloup Brittany Oyster boat 1:25 Scale	72.00
Flatlie Chesapeake Bay Fishing Boat 1:25 Scale	72.04
5.5 Metre Yacht 1:25 Scale	85.00
Ranger American Cutter 1823 1:50 Scale	85.00
Shenandoah American Cutter 1804 1:50 Scale	135.00
La Toulannaise Spanish War Ship	146.00
Cocca Veneta, 16th Century Merchant Vessel	182.00
Eagle American Brig 1812 1:85 Scale	183.00
Dolphyn, Dutch Privateer SM16	202.00
Yacht D'Oro 17th C Brandenburg Yacht	203.00
Galeone Veneta 16th Century Armed Vessel	219.00
HM Endeavour Bark 1768 SM41	255.00
La Sirene 18th Century French Frigate 1:75	259.00
Mistique French Zebec 1:50 Scale	281.00
Corsaro II 1:24 Scale Ragatta Yacht	378.00
Prins Willem 1:100 Scale SM40	392.00
HMS Bellona 74 Gun Ship 1:100 Scale	395.00
HMS Victory SM23 1:98 Scale	413.00

Dumas Boats

Noahs Ark #1264	98.00
Jolly Jay Gulf Coast Fishing Trawler #1231	178.00
River Barges #1219	178.00
George W Washburn #1260	219.95
Great Lakes Freighter #1264	221.00
City Of Baffolo Lake Steamer #1278	283.00
Jersey City Tug #1248	330.00
Brooklyn Tug, A classic Tugboat #1238	421.00
Windy Airboat Kit #1506	103.39
Big Swamp Buggy #1505	150.40
Chris Craft 16' Painted Racer #1263	175.50
Chris Craft Racer 1949 #1249	248.15
Commander Express Cruiser #1244	353.00
Barrel Back Mahogany Runabout #1234	373.43
Triple Cockpit Barrel Back mahogany #1241	425.81
US Army Tug ST-74 1941 #1256	127.00
US Coast Guard 41' Utility Boat #1214	180.49
PT 109 US Navy Boat #1233	192.70
SC-1 Class Sub Chaser #1259	215.00

Krick Kits Suitable for Electric or Steam Power

Felix Hamburg Harbour Launch	108.00
Bruma Open Cruiser Yacht 1:43	124.00
WSP47 Police Motor Launch	162.00
Muritz 650mm Length	169.99
Grimmershorn Motor Vessel	289.00
Krick U Boat	399.00

Mantua & Panart R/C Boats

Mincio Freelance Mahogany Runabout	112.00
Bruma Open Cruiser Yacht 1:43	214.00
Venetian Passenger Motor Boat 1:28	259.00
Anteo Harbour Tug 1:30 Scale	395.00
Aiace Wooden Model Boat Kit Static or R/C	413.95
Almalfi Mediterranean Fishing Boat 1:35 Scale	44.95
Police Motor Boat 400mm long Ply Laser Cut	44.95
Viking Ship 1:40	74.00
Arm 82 Dutch fishing Boat 1:25 Scale	91.00
Golden Star. English Brig	94.45
Nina Caravel of Columbus 410mm long	103.00
Pinta Caravel of Columbus 570mm long	103.00
Guzzo Ligure Italian Fishing Boat 1:12 Scale	104.95
La Madeline French Fishing Boat 1:50 Scale	107.00
Caesar Roman Birmem 30 BD 1:30	109.00
Kon-Tiki 1:8 Scale 590mm Long	146.95
HMS Shine English Cutter	149.00
Mercator. Belgian Sail Training Ship 645mm Long	175.00
Santa Maria. Flagship of Columbus	175.00
HMS Endeavour 1768:1:60	194.00
Dutch Naval Gunboat Cannoniera Olandese 1:43	215.00
Astrolabe. French Sloop 1812 1:50 Scale	236.00
USS Constitution American Frigate 960mm long	290.00
La Couronne French Warship 1636 1:98 Scale	315.00
Gorch Fork German Sail Training Ship 1:90 Scale	322.00
HMS Victory. Nelson's Flagship 1.98 1070mm Long	322.00

Amerigo Vespucci. Italian Navy 1:100 Scale	359.00
Le Superbe. 74 Gun French Fighting Ship	359.00

Model Shipways Boat Kits

3 Kit Combo with Tools, Paint & Glue for Dory	155.00
18th Century Longboat Kit, Tools, Paints	62.00
Lowell Grand Banks Dory Kits, Tools. Paints	45.00
USS Essex Frigate 1:76 Scale	379.00

Ocree Static model boats/ Trams / Trains

Calella Light boat 1:15 Scale	49.94
Carmina-Galician Embarkations	49.94
Polaris 1:50 Scale 580mm long	69.95
San Juan Felucca 1:70 Scale	73.00
Palamos Fishing boat 1:45 Scale	78.95
Albatros Schooner 1:100 OC12500	86.95
Buccaneer Pirate ship 565mm Length	89.95
Ocree AEC Bus 1:24 Scale	94.94
Golden Hind 1:85 OC12003	95.00
HMS Beagle 1:65 Scale	110.00
Ocree Adler Locomotive 1:24 Scale	110.00
Essex Whaling Ship With Sails 1:60 Scale	113.00
Ocree London Tram 1:24 scale	115.00
Cross section Santissima Trinidad	125.00
HMS Terror With Sails 1:75 Scale	134.95
HMS Revenge 1:85 Scale OC13004	149.95
Corsair Brig 1:80 Scale OC13600	155.95
La Candelaria Bomb Vessek 1:85 Scale	159.95
Mississippi Paddle Steamer	185.00
Ulises Ocean Going Tug OC61001	195.00
Cala Esmeralda Topsail Schooner 760mm Long	199.94
New! HMS Titanic 1:300 Scale OC14009	209.95
Diana Frigate 1792 1:85 Scale	225.00
N S Mercedes Spanish Frigate 1:85 Scale	225.00
Bounty with Cutaway Section 1:45 OC14006	255.00
Montanes 74 Gun Ship of the line 1:70 Scale	395.00
Nuestra Seonor del Pilar 1:46 Scale	395.00
San ildefonso 1:70 Scale	395.00

Sergal Static Display Kits

French Xebec Sciabecco Francaise	89.00
Thermopylae Tea Clipper	95.00
HMS Jamaica 14 Gun Sloop	153.00
HMS Bounty 1787 1:60	193.00
HMS Peregrine Galley "Runner Class"	209.00
Dutch Whaler "Baleneria Olandese	284.00
Cutty Sark Tea Clipper	425.00
Mississippi River Steamboat	425.00

Victory Models

Lady Nelson Cutter XVIII Century	112.00
HM Bomb Vessel Granado 1:64 Scale	254.00
HMS Fly 1776 1:64 Scale	255.00
HMS Pegasus 1776 1:64 Scale	339.00
Mercury 20 Gun Brig 1:64	343.00
Revenge 1577 Navy Royal Warship 1:64 Scale	390.00
HMS Vanguard 1787 74 gun ship 1:74 Scale	684.00

ALSO:

ALL THE HARDWARE, BUILDING MATERIALS AND RC EQUIPMENT REQUIRED TO COMPLETE YOUR MODEL

Visit the website for our full range of kits:

www.cornwallmodelboats.co.uk

email: **sales@cornwallmodelboats.co.uk**

Prices are correct at the time of printing, but are subject to change without notice



Mtroniks

electronics innovation

Over 30 years of
know-how

24V VIPER Marine

Brushed speed controller
Available in 15A, 25A or 40A

FROM £41.99



No Relays or moving parts!

Ultra fine control for model boats running up to 24V. Available in different power ratings to suit all sizes of motors. 100% waterproof for trouble free modelling! See website or contact your local dealer for more information.



VIPER Marine

Brushed speed controller
15A, 25A, 40A or 75A

FROM £33.99

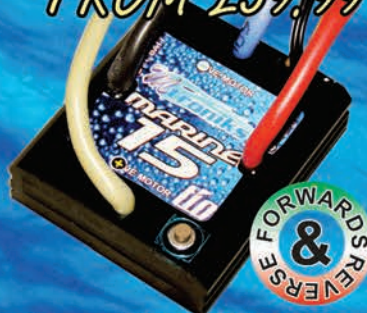


Ultra fine control for model boats running up to 12V. Available in different power ratings to suit all sizes of motors. 100% waterproof for trouble free modelling! See website or contact your local dealer for more information.

tio Marine

Brushed speed controller
Available in 15A, 30A or 50A

FROM £39.99



Ultra fine control for model boats running up to 12V, including Lipo cells! Available in different power ratings to suit all sizes of motors. 100% waterproof for trouble free modelling! See website or contact your local dealer for more information.

microVIPER

Brushed speed controller

£33.99



Ultra fine control for small model boats running up to 12V with a 10A motor limit. 100% waterproof for trouble free modelling! See website or contact your local dealer for more information.

DIGISOUND

Realistic engine sound system



£69.99

Waterproof, 12V, amplified sound module for model boats that require realistic sound with engine start/stop, horn and changing running sound. Speaker included! See website for available sounds.

24 Month Warranty on all Mtroniks electronic products



Marine motors

Brushed motors for model RC boats

M400



£7.99

M500



£9.99

M600



£19.99

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

High quality speed controls designed and manufactured since 1987 in the UK

Mtroniks
electronics innovation

41A Ilkley Road, Otley, LS21 3LP, UK
Tel: +44(0)1943 461482 Fax: +44(0)1943 468335

www.mtroniks.net
enquiries@mtroniks.net