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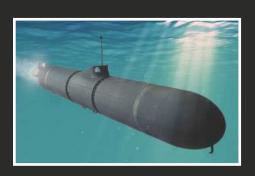
FIRE-FLOAT DENNY

The unique historic venture immortalised in 1:24 by former Chief Engineer at Dennis



NAVARINO MODELS Q&A

A fascinating interview about the wooden wonders that will make you want to go Greek!



HEAVEN SHAKER

Mikro Mir's macabre but conversation provoking 1:35 scale Kaiten Type 2 manned torpedo kit



to make building this charming little model yacht plain sailing

SO, YOU WANT TO RACE...
BUT ARE YOU READY?___



A simplified explanation of surface drive model boat set up for absolute beginners



The Model Dockyard



PO BOX 104, Redruth **TR15 9BJ**

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Plastic Kits

Trumpeter HMS Hood 1:200 scale Trumpeter HMS Nelson 1:200 scale
Trumpeter HMS Nelson 1:200 scale
Trumpeter HMS Nelson 1:200 scale
Trumpeter USS Missoun 1:200 scale 1352mm
Trumpeter USS Missoun 1:200 scale 1255mm
Heller HMS Victory 1:100 scale
Heller Le Soleil Royal 1:100 scale
HTB Vosper St. Nazaire Raid MTB 74
Trumpeter HMS Repulse 1941 1:350
Trumpeter HMS Hood (1941) 1:350
Trumpeter Miss Usen 1945 1:350
Trumpeter Admiral Hipper 1941 1:350
Trumpeter HMS Cornwall Cruiser 548mm 1:350
Trumpeter HMS Eveter Cruiser 500mm 1:350
Trumpeter HMS Eveter Cruiser 500mm 1:350 Trumpeter HMS Nelson 1:200 scale

Plastic Kit Upgrades

Plastic Kit Upgrades

HMS Cornwall fittings upgrade etch 1:350

HMS Draadnought 1907 Railing Set 1/350

HMS Hood detail sheet pack 1:350 scale
Bismarck etched detail Tamiya Bismarck 1:350

S-100 Schneilboot gun detailing etch 1:350

S-100 Schneilboot gun detailing etch 1:350

Jermiah O'Piene Liberty Ship etch 1:350

Jermiah O'Piene Liberty Ship etch 1:350

Prinz Eugen etched set. 1:350 scale

Vosper MTB 1:72 scale

Prince of Wales etch sheet pack 1:350

Admiral Hipper etched sheet set 1:350 scale

U-boat VIIC/41 for 1:72 scale Revell kit

Gato class submarine for 1:72 revell kit

Elco PT596 1:35 scale

U-boat VIIC/41 for 1:72 scale Revell kit

Elco PT596 1:35 scale

Tippiz (designed to be used with Tamiya kits)

Wooden deck & Etch for Bismarck 1:200

Wooden deck & Etch for Bismarck 1:200

Wooden deck & Etch for Bismarck 1:200

SW wooden deck and etch Nelson 1:200 scale

DX Wooden deck and etch Nelson 1:200 scale

DX Wooden deck Tale Pack for Nelson 1:200

Wooden deck for Finz Eugen 1:350 scale

Wooden deck for Finz Eugen 1:350 scale

Wooden deck for Prince of Wales 1:350

Wooden deck for Finz Eugen 1:350 scale

Wooden deck for Prince of Wales 1:350

Wooden deck and etch Nort Missouri 1:200

DX Wooden deck and etch for Arizona 1:200

DX Wooden deck for HMS Hood 1:200 DX Wooden deck and etch set for Hood 1:200 DX Wooden deck for HMS Hood 1:200 Wooden deck for Graf Spee1:350 scale Wooden deck for HMS Repulse 1:350 scale DX Wooden deck and Railing for Bismarck 1:350 Flower Class Corvette Deck & Fittings Set 1:72 Flower Class Corvette Type `C' Bridge Set 1:72

Harold Underhill Plans

Harold Underhill Plans

Cutty Sark Clipper Ship 698mm
Marie Sophie of Falmouth 1033mm
Lady of Avenel. Wood. 850mm
1. Adv. 1045 Avenel. 1187 Avenel. 1187

R/C Boat Plans

MM1348 Miranda Steam Launch:42in MM1040 Enterprise: 1:12 Northumbrian Coble MM1390 Tyne Lifeboat: 740mm 1:19 scale MM1246 H.M.S Inflexible battle-cruiser 1:192 MM1256 H.M.S Exeter cruiser 1:192 MM1387 H.M.S Diamond destroyer 1:96 MM1387 H.M.S. Diamond destroyer 1:96 MM690 Brave Bordere: 36in Vosper P.B. MM672 H.M.S. Hood: 1:192 scale MM1367 Norfolk Wherry: 1:48 scale MM1389 Will Everard Thames Barge: 1:48 scale MM189 Will Everard Thames Barge: 1:48 scale MM1980 Tank Landing Oraft MikV: 1:48 scale MM1950 Tight, Landing Oraft MikV: 1:48 scale MM1950 Director: navy paddle tug. 1:48 scale MM156 Janes Salfey Barder: 1:12 scale 43in MM19280 Director: navy paddle tug. 1:48 scale MM1365 Cleriot Thames Salfey Barge: 1:24 MM1441 Formidable: Steam drifter 1:33 MM1435 Son James 124

MM697 Cervia: Thames tug in 1:48 scale
MM897 HM. Skent : 1:96 early cruiser 58in
MM120 E. HM. S Dreadnought 33in
MM1310 Clochight Clyde Dreft :136
MM1448 Liverpool Lifeboat: 1:12 scale
MM1448 Liverpool Lifeboat: 1:12 scale
MM1478 Inchcolm Clyde puffe 1:32 scale
MM1778 Inchcolm Clyde puffe 1:32 scale
MM1775 Revive Brixham salling trawler 1:60
MM1757 Revive Brixham salling trawler 1:60
MM1375 Revive Brixham salling trawler 1:60
MM1375 Revive Brixham salling trawler 1:60
MM1375 Telleen: motor fishing boat 1:24
MM737 Eileen: motor fishing boat 1:24
MM390 Cossack: 38in Tribal class destroyer
MM1335 Vosper 73ft rescue launch 1:24 scale
MM1407 Smit Nederland: 1:28 scale tug.
This is just a selection of the huge range available.

Static Discolar With Plane

Static Display Kit Plans

1004 Greek Bireme plan 560mm 1006 Vikingship, Osjberg plan 1:50 440mm 1009 Santa Maria plan 1:65 scale 540mm 1013 Mayflower plan, Scale 1:60.

1016 HMS Prince plan 750mm
1019 Greek Galley plan, Length 560mm.
1021 Chinese Junk, plan 1:100 400mm
1028 HMS Victory plan, 1:100 950mm
1032 HMS Bounty plan 1:60 720mm
1032 HMS Bounty plan 1:60 720mm
1030 HMS Bounty plan 1:60 720mm
1040 New Bedford Whaler plans 1:16. 550mm.
120003 Rva Aquarama plan 1:10 scale 860mm
120010 Endeavour J Class Plan 1:33 51130mm
120003 Evadeavour J Class Plan 1:33 51130mm
120003 Evadeavour J Class Plan 1:35 1130mm
120004 Endeavour J Class Plan 1:35 1130mm
120004 Endeavour J Class Plan 1:35 1130mm
120005 HMS Vergee plan 1577 1:64 scale 885mm
110006 HMS Fyel Plan 1:64 800mm
110006 HMS Pegasus plan 1:64 800mm
110006 Mercury plans, Scale 1:16.
971 Open Whaler, plans, Scale 1:16.
977 Victory Bow section, plans, Scale 1:178.
977 Armed Pinnace, plans, Scale 1:16.
978 Royal Caroline, plans, Scale 1:16.
979 Royal Caroline, plans, Scale 1:16.
115 is just a selection of over 1000 plans available
R/C Equipment

R/C Equipment

RadioLink 8 channel + 2 receivers combo Planet 2+2 4 Channel Combo Planet 2-2 4 Channel Combo
Viper Marine 40 amp speed controller
Viper Marine 25 amp speed controller
Viper Marine 25 amp speed controller
Viper Marine 15 amp speed controller
Viper Marine 15 amp speed controller
Viper Micro Marine 10 amp speed controller
Viper Micro Marine 10 speed controller
Mitroniks High PowerMicro Switcher
Programmable mixing module
Waterproof mixing module (w-tail)
Full range of R/C installation equipment available

Motors

Motors

Schottel drive unit 40mm dia prop
Schottel drive unit 50mm dia prop
Schottel drive unit 50mm dia prop
Schottel drive unit 70mm dia prop
Mabuchi 540
Motor mount for MFA 800/850 Motors
385 Motor 6 to 150, Volt with mount
540 Motor 6 to 12.0 Volt with mount
REB00 Motor 12.0 Volt with mount
REB00 Motor 12.0 Volt with mount
REB00 Motor 12.0 Volt with mount
Motor mount for 540/850,550 and 600 Motors
MFA 540 Motor and 2.5 1.1 Gearbox 4.5 -15v
MFA 385 Motor and 2.5.1 Gearbox 4.5 -15v
MFA 385 Motor and 6.1 Gearbox 4.5 -15v
S50 series 385 Motor and 6.1 Gearbox 4.5 -15v
S51 series S51 Motor and 6.1 Gearbox 4.5 -15v
S50 series 365 Motor and 6.1 Gearbox 4.5 -15v
S50 series 365 Motor and 6.1 Gearbox 4.5 -15v
S50 series 365 Motor and 6.1 Gearbox 4.5 -15v
S50 series S51 Motor and Gearbox 4.5 -15v
S50 series S51 Motor and Gearbox 4.5 -15v
Causalinary Assemblies

Coupling Assembles

Single Universal Joint Coupling Double Universal Joint Coupling Double Universal Joint Coupling Coupling set includes one UJ, 2 inserts of your choice and an allen key. Inserts sizes 2.0, 2.3, 3.0, 4.0, 5.0, 6.00mm plain M3, M4, M5 thread

Rudder Assemblies

MA306240mm x 27mm Rudder Assembly RO1433 Steerable Kort nozzle with 50mm I/D RO1487 Fixed Kort nozzle with 60mm dia prop RO1591 Rudder assembly 30x27mm U1 45mm x 30mm Rudder

Standard M4 Propshafts

Standard M4 Propshafts
in long tube 4mm threaded Propshaft
to long tube 4mm threaded Propshaft
to long tube 4mm threaded Propshaft
to long tube 4mm threaded Propshaft
2in long tube 4mm threaded Propshaft
Zin long tube 4mm threaded Propshaft
Tall sin long tube 4mm threaded Propshaft
This is just a selection from our huge range

Water Proof Propshafts

300/00 WP Propeller Shaft M4 290mm 301/02 WP Propeller Shaft M4 186mm 301/03 WP Propeller Shaft M4 211mm 301/04 WP Propeller Shaft M4 236mm 301/05 WP Propeller Shaft M4 261mm

Raboesch Brass Propellers

Brass Propeller (A Type) 20mm -3 Blade-M4 Brass Propeller (A Type) 25mm -3 Blade-M4 Brass Propeller (A Type) 25mm -3 Blade-M4 Brass Propeller (A Type) 30mm -3 Blade-M4 Brass Propeller (A Type) 35mm -3 Blade-M4 Brass Propeller (A Type) 40mm -3 Blade-M4 Brass Propeller (A Type) 45mm -3 Blade-M4 Brass Propeller (A Type) 50mm -3 Blade-M4 Brass Propeller (A Type) 50mm - 3 Blade-M4 Brass Propeller (A Type) 55mm - 3 Blade-M4 Brass Propeller (A Type) 60mm - 3 Blade-M4 Brass Propeller (A Type) 60mm - 3 Blade-M4 Brass Propeller (A Type) 65mm - 3 Blade-M4 Brass Propeller (A Type) 65mm - 3 Blade-M5 Brass Propeller (A Type) 75mm - 3 Blade-M5

Raboesch Bow Thrusters

Bow thruster unit with motor 14mm I/D Bow thruster unit with motor 16mm I/D Bow thruster unit with motor 19mm I/D Bow thruster unit with motor 22mm I/D Bow thruster unit with motor 22mm I/D Bow thruster unit with motor 25mm I/D Bow thruster unit with motor 10mm I/D Bow thruster unit with motor 30mm I/D

Asst CAP Maquette Fittings

CAP/R113 Modern boat fender, 48mm long CAP/R112 Modern boat fender, 39,mm long CAP/R112 Modern boat fender, 59mm long CAP/R14 Modern boat fender, 56mm long CAP/R48/15 Searchlight, 21mm dia x 28mm high CAP/R48 Danforth anchor 50mm long CAP/R494 D's section fender 9mm ligh 2 mt CAP/R64 US section fender 9mm light 2 mt CAP/R64 US secti CAP/R6 Literatt container 58mm long CAP/A62 Enclosed round radar array 30mm dia CAP/A83 CQR Plough anchor. 60mm long CAP/R70/20 Orange Lifebelt 30mm dia

CAP/A91/10 Motorboat/yacht winch 47mm wide CAP/R103 Modern boat fender, 32mm dia CAP/R112/10 Echo sounder 23mm x 19mm CAP/R312/10 Echo sounder 23mm x 19mm CAP/R34/20 Section fender 15mm high 2 mt CAP/R30/15 Fire monitor kit 37mm high dia CAP/R86 60mm dia ship's wheel. Chrome CAP/A1016 Fix Badar receiver and stand. 19mm CAP/A88/15 GPS receiver radome 10mm high CAP/A111/15 GPS receiver radome 10mm high CAP/A11/10/Echo sounder/ 23mm x 19mm This is just a selection of the range available.

BECC Letter & Number sets

2A Arial Lettering 2 mm 3A Arial Lettering 3 mm, 4A Arial Lettering 4 mm, 4A Arial Lettering 4 mm, 6A Arial Lettering 6 mm, 8A Arial Lettering 8 mm, 10A Arial Lettering 10 mm, 12A Arial Lettering 12 mm, 15A Arial Lettering 25 mm, 20A Arial Lettering 25 mm, 5A Arial Lettering 5 mm, Available in most colours

Waterline Marking Sets

Water line Marking Sets
Hull Markings Imperial, Colour: White, Size: 1:24
Hull Markings Imperial, Colour: White, Size: 1:32
Hull Markings Imperial, Colour: White, Size: 1:32
Hull Markings Imperial, Colour: White, Size: 1:48
Hull Markings Imperial, Colour: White, Size: 1:72
Hull Markings Imperial, Colour: Black, Size: 1:72
Hull Markings Imperial, Colour: Sizek, Size: 1:96
Hull Markings Imperial, Colour: White, Size: 1:96
Hull Markings Metric, Colour: White, Size: 1:96
Hull Markings Metric, Colour: White, Size: 1:96
Hull Markings Imperial and Metric White 1:150
This is just a selection of the range available.

BECC Flags

GB02 White Ensign, Size: AAA 10mm
GB02 White Ensign, Size: AA 15mm
GB02 White Ensign, Size: A 20mm
GB02 White Ensign, Size: B 25mm
GB02 White Ensign, Size: B 25mm
GB02 White Ensign, Size: C 38mm
GB02 White Ensign, Size: C 35mm
GB02 White Ensign, Size: F 75mm
GB02 White Ensign, Size: F 75mm
GB02 White Ensign, Size: G 125mm
GB02 White Ensign, Size: H 150mm
GB02 White Ensign, Size: H 150mm
Also available, Naval ensigns in Red, Blue as well and

Quaycraft Ship's Boats

Quaycrart Snip's Boats
R271:96 Scale 27ft Whater 85mm
OD24 1:24 Scale 14ft Clinker Dinghy
GS77 1:72 27ft Clinker whater 115mm
OD20 1:24 Scale 10ft Clinker Dinghy
OD38 1:32 Scale 10ft Clinker Dinghy
OD38 1:32 Scale 10ft Clinker Dinghy
OD38 1:32 Scale 10ft Clinker Ship s Lifeboat
OL37 1:32 Scale 16ft Clinker Ship s Lifeboat
OL59 1:48 Scale 25ft Motor double ended
OR16 1:96 Scale 10ft Dinghy 51mm
OD34 1:32 Scale 14ft Clinker Dinghy
OR26 1:96 Scale 14ft Clinker Clinghy
OR26 1:96 Scale 10ft Clinker dinghy, QS70 1:72 Scale 16ft Clinker dinghy, QAL37 1:48 Scale 24ft Clinker Ship s Lifeboat QAL37 1.48 Scale 24ft Clinker Ship s Lifeboat QL43 1.48 Scale 18ft Clinker Lifeboat QL53 1.48 Scale 20ft double ended lifeboat QR32 1.96 Scale 32ft Cutter post 1920 QP27 1.48 Scale 27ft Royal Navy Whaler QP25 1.48 Scale 27ft Royal Navy Whaler QP25 1.48 Scale 28ft Motor cutter 162mm QAP12 1.48 Scale 12ft Clinker dinghy QS75 1.72 Motor cutter 2 cabins 109mm QP16 1.48 Scale 16ft Royal Navy dinghy QP14 1.48 14ft Cinker dinghy 89mm This is just a selection of over 100 boats available

Robbe Fittings

R01485 Ships crane with 160mm reach R01485 Fine-fighting monitor 80mm high R01577 Inflatable boat with 12.5 140mm R01580 Control Pulley set R01565 Ships boat crane 90mm reach R01483 Working Towing hook 77mm wide R01433 Nat lamp set lighting board 30mm long R01453 Short set 5mm x 25mm (Pack of 6) R01440 Moutherd moter 1.5 scale 60mm R01404 Outboard motor 1:25 scale 60mm R01404 Deck illumination lamp 9mm dia 6v (2) R01300 Radar barred array type 80mm R01484 Radar barred array type 1:50 73mm R01518 Round deck hatch 29mm dia 2pcs

Reade Vintage Fittings

KEAGE VITILAGE FILLING
LESP14 Naval Searchlight 26mm dia
LESP15 Naval Searchlight 26mm dia
LESP15 Naval Searchlight 17mm
LESP21 Lifebelt 25mm
LESP22 Lifebelt 17mm
LESP22 Lifebelt 17mm
LESP25 Lifebelt 17mm
LESP24 Ships Wheel 25mm dia
LESP34 Cowl Vent 40mm high
LESP34 Cowl Vent 32mm high
LESP4 Cowl Vent 32mm high
LESP5 Cowl Vent 27mm high

1:72 scale Warship Fittings

1:72 scale Warship Fittings
Flower Class Corvette Deck & Fittings Set 1:72
Flower Class Corvette Type C' Bridge Set 1:72
Flower Class Corvette Depth Charge Set
4in Gun Mark IX Breech Loading Gun 1:72*
Coastal Forces Guardrail Set
21in Torpedo and Tubes Set (2)*
Moored Mine & Sinker Set
Single 20mm Oerlikon Guns (2)
2 Pdr. Pom-Pom Gun with Bandstand 1:72*
16fi Dinghy & Stowage 67mm long 1:72 scale
Oval Carley Floats 43mm x 25mm (2) 1:72*
2 flish Torpedo and Tubes Set (2)*
Rectangular Carley Floats 38x30mm (2) 1:72*
2 flish Torpedo and Tubes Set (3)*
Rectangular Carley Floats 38x30mm (2) 1:72*
Ledigehog Anti-Sub. Weepon 1:72* scale
Oval Carley Floats Set (3)*
Single Depth Charge & Chute Set
Type A Mine Set (4)*
Twin .303 Vickers Gas Operated MG Set (2)
Sin Porthole (Souttle) Set 4mm O/D (60)
Twin .303 Lewis Guns et 1:75*
Trin 305 vickers Gas Operated MG Set (2)
This is just a selection of the range available

This is just a selection of the range a

Brass Portholes

K67008 Porthole, 8mm, With 6 Hole Flange, (Pack 10)
K67010 Porthole, 10mm, With 6 Hole Flange, (Pack 10)
K67012 Porthole, 12mm, With 6 Hole Flange, (Pack 10)
K67014 Porthole, 14mm, With 6 Hole Flange (Pack 10)
K67014 Porthole, 15mm, With 6 Hole Flange (Pack 10)
K67018 Porthole, 15mm, With 6 Hole Flange (Pack 10)
K67018 Porthole, 18mm, With 6 Hole Flange (Pack 10)
K67020 Porthole, 20mm, With 6 Hole Flange, (Pack 10)

Brass Stanchions

K66206 2 Hole Stanchion, Brass 6mm (Pack of 10)
K66210 2 Hole Stanchion, Brass 10mm (Pack of 10)
K66210 2 Hole Stanchion, Brass 15mm (Pack of 10)
K66212 2 Hole Stanchion, Brass 15mm (Pack of 10)
K66220 2 Hole Stanchion, Brass 20mm (Pack of 10)
K66220 2 Hole Stanchion, Brass 25mm (Pack of 10)
K66230 2 Hole Stanchion, Brass 35mm (Pack of 10)
K66230 2 Hole Stanchion, Brass 35mm (Pack of 10)
K66240 2 Hole Stanchion, Brass 35mm (Pack of 10)
K66240 2 Hole Stanchion, Brass 40mm (Pack of 10)
K66013 3 Hole R.N Stanchion, 11mm 1:72 (Pack of 10)
K66012 3 Hole R.N Stanchion, 5mm 1:72 (Pack of 10)
This is just a selection of our massive range.

Crew Figures

Crew Figures
DF11 Civilian/R N Officer wearing cap and pullover
DF12 Seated ships captain wearing cap and pullover
DF13 Seated vilian crew mearing waterproof jacket
DF15 Seated civilian crew figure
DF21 US Marine sitting
DF3 Standing civilian captain in sheepskin jacket
Standing civilian crew member
DF3 Standing R N/Civilian officer with binoculars
DF9 Seated civilian crew member DF96 1:96 scale crew figure set Ships cat, stiling 1:48 Scale Bearded Officer, 1:32 Scale Crew member 1:32 Scale Officer, clean shaven, 1 32 Scale Officer, clean shaven, 1 32 Scale Dearded Officer 1:48 Scale Crew member, leaning on rail 1:48 Scale Young boy, 1:48 Scale Wodern crew wearing dungaress 1:30 60mm Modern crew wearing dungaress 1:30 60mm Modern crew in smock 1:30 scale 60mm GM72/004 RN 1:72 Officers (Working Dress) (3) GM72/005 RN 1:72 Ratings — pullovers (3) GM72/005 RN 1:72 Crew — duffle coats (3) GM72/006 RN 1:72 Crew — duffle coats (3) GM72/007 RN 1:72 Crew — duffle coats (3) GM72/007 RN 1:72 Crew — duffle coats (4) GR144/02 Royal Navy Gunners 1:144 (Pack of 4) GR144/02 Royal Navy Guners 1:144 (Pack of 4) GR144/04 Royal Navy Officer and Sailors 1:144 (4) GR144/04 Royal Navy Officer and Sailors 1:144 (4) GR144/04 ROyal Navy Officer and Sailors 1:144 (2) CMF72113 Under Crew for U-Boat 1:72 (3) CMF32504 Schnellboat Crew at Rest 1:35 (2) CMF32152 Schnellboat Crew at Rest 1:35 (2) CMF3216 Cookout Crew for U-Boat 1:72 scale (3) CMF72115 Lookout Crew for U-Boat 1:72 scale (3) CMF72133 Lookout Crew U-Boat 1:72 scale (Pack of 3) Boat Fenders 1:96 scale crew figure set Ships cat, sitting 1:48 Scale

Boat Fenders DOAL FEHULET :
7381/25 Fender:Tyre 25mm Dia (Pack of 10) 7381/28 Fender:Tyre 28mm Dia (Pack of 10) 7381/28 Fender:Tyre 28mm Dia (Pack of 10) 7381/38 Fender:Tyre 38mm Dia (Pack of 10) 7381/38 Fender:Tyre 38mm Dia (Pack of 10) 7381/38 Fender:Tyre 43mm Dia (Pack of 10) CAPIR112 Modern boat fender; 39.mm long CAPIR13 Modern boat fender; 48mm long CAPIR14 Modern boat fender; 58mm long CAP/R114 Modern boat fender, 56mm long CAP/R901 Modern boat fender, 24mm long CAP/R901 Modern boat fender, 30mm long CAP/R902 Modern boat fender, 35mm long CAP/R903 Modern boat fender, 45mm long CAP/R904 Modern boat fender, 55mm long

Scalelink Etched Brass

ScaleIIINK EtCNed Brass

Itmm 3 rail stanchions & railing 840mm 196

1:96 R.N 3 rail stanchions and railing 11mm

1:128 scale vertical laddering

1:72 R.N pattern 3 rail stanchions and railing

1:192 R.N pattern 3 rail stanchions and railing

1:192 R.N pattern 3 rail stanchions

Clarendon serif Letters 2:5, 3 and 5mm high

1:200 Angled step ladders with handrail

Vertical rung ladders 4.5mm & 5.5mm wide

1:128 Angled step companionway ladders

1:128 scale vertical laddering

5mm and 6mm wide Angled step ladders

6mm & 8mm vertical rung laddering

This is just a selection from the huge range available

Relaving Pins

Belaying Pins

Delaying Prins
Belaying Pins Walnut 8mm (Pack of 10)
Belaying Pins Walnut 8mm (Pack of 10)
Belaying Pins Walnut 6mm (Pack of 10)
Belaying Pins Walnut 10mm (Pack of 10)
Belaying Pins Walnut 10mm (Pack of 10)
Belaying Pins Brass 8mm (Pack of 10)
Belaying Pins Brass 12mm (Pack of 10)
Belaying Pin Bronzed metal, 9mm (Pack of 10)
Belaying Pin Bronzed metal, 9mm (Pack of 10)
Belaying Pin Brass, Length 5mm. (Pack of 10)

Rigging Thread

Rigging Thread, 0.1mm Natural Rigging Thread, 0.25mm Black Rigging Thread, 0.25mm Black
Rigging Thread, 0.5mm Black
Rigging Thread, 0.5mm Black
Rigging Thread, 0.5mm Black
Rigging Thread, 0.5mm Black
Rigging Thread, 0.75mm Black
Rigging Thread, 0.75mm Natural
Rigging Thread, 1.7mm Black
Rigging Thread, 1.3mm Black (10mt)
Rigging Thread, 1.3mm Black (10mt)
Rigging Thread, 1.3mm Black (10mt)
Rigging Thread, 1.7mm Natural 5 mtr
Rigging Thread, 1.7mm Natural 5 mtr
Rigging Thread, 2.5mm Natural (2.5mtr)
This is just a selection of the range available.

Rigging Blocks & Deadeyes

Single Block, 2mm Walnut (Pack of 10) Single Block, 3mm Walnut (Pack of 10) Single Block, 4mm Walnut (Pack of 10) Single Block, 5mm Walnut (Pack of 10) Single Block, 5mm Walnut (Pack of 10) Single Block, 5mm Walnut (Pack of 10) Single Block, 10mm Walnut (Pack of 10) Single Block, 10mm Walnut (Pack of 10) Double Block, 3mm Walnut (Pack of 10)

Double Block, 4mm Walnut (Pack of 10)
Double Block, 5mm Walnut (Pack of 10)
Double Block, 6mm Walnut (Pack of 10)
Double Block, 7mm Walnut (Pack of 10)
Double Block, 7mm Walnut (Pack of 10)
Deadeye, 9mm Walnut (Pack of 10)
Deadeye, 7mm Walnut (Pack of 10)
Deadeye, 7mm Walnut (Pack of 10)
Deadeye, 3mm Walnut (Pack of 10)
Deadeye, 3mm Walnut (Pack of 10) Deadeye, 2mm Walnut (Pack of 10)
Deadeye, 12mm Walnut (Pack of 10)
This is just selection from our massive range.

Display Bases and Columns

5695/30 Varnished Hardwood Base 300x100mm 5695/40 Varnished Hardwood Base 400x120mm 5695140 Varnished Hardwood Base 400x120mm 5695160 Varnished Hardwood Base 500x150mm 5695160 Varnished Hardwood Base 800x550mm 5695180 Varnished Hardwood Base 800x550mm 5690128 26mm high Brass mounting column 5690129 29mm high Brass mounting column 5690129 35mm high Brass mounting column 5695100 Turned Wood Mounting Column 28mm 5685100 Turned Wood Mounting Column 28mm 5685103 27mm Walnut mounting column 5685103 27mm Walnut mounting column 5685103 27mm Walnut mounting column

Timber

Lime Strip 0.5mm x 2mm x 1000mm
Lime Strip 0.6 x 10mm x approx 1 metre long
Lime Strip 0.6 x 10mm x approx 1 metre long
Lime Strip 0.6 x 4mm x approx 1 metre long
Lime Strip 0.6 x 4mm x approx 1 metre long
Lime Strip 0.5 x 5mm x approx 1 metre long
Lime Strip 0.5 x 5mm x approx 1 metre long
Lime Strip 0.5 x 7 x approx 1 metre long
Lime Strip 0.5 x 15 mm x approx 1 metre long
Lime Strip 1.5 x 15mm x approx 1 metre long
Lime Strip 1.5 x 15mm x approx 1 metre long
Lime Strip 1.5 x 2.0mm x approx 1 metre long
Lime Strip 1.5 x 3.0mm x approx 1 metre long
Lime Strip 1.5 x 3.0mm x approx 1 metre long
Lime Strip 1.5 x 3.0mm x approx 1 metre long
Lime Strip 1.5 x 3.0mm x approx 1 metre long
Lime Strip 1.5 x 3.0mm x approx 1 metre long
Lime Strip 1.5 x 3.0mm x approx 1 metre long
Lime Strip 1.5 x 3.0mm x approx 1 metre long
Lime Strip 1.5 x 4.0mm x approx 1 metre long
Lime Strip 1.5 x 3.0mm x approx 1 metre long 4.0mmPlywood Sheet x 300 x 1200mm long 0.5mm Plywood Sheet x 300 x 1200mm long U.Sinim Plywood Sheet x 300 x 1200nim long

This is just a selection of sizes. Other woods stocks include Walnut, Maple, Beech, Balsa, Obechi

Admiralty Paint Sets

Admiralty Paint Sets

HMS Diana Paint Set

HMS Cruiser Paint Set

HMS Snake Paint Set

HMS Snake Paint Set

HMS Agamemon Paint Set

HMS Agamemon Paint Set

HMS Agamemon Paint Set

HMS HASE Paint Set

HMS Jalouse Paint Set

HMS Jalouse Paint Set

HMS Jalouse Paint Set

HMS Jalouse Paint Set

HMS HASE Paint Set

HMS Mars Paint Set

HM Gutter Sherbournel'ald yelson Paint Set

HM Yacht Chatham Paint Set

HM Wortar Vessel Convulsion Paint Set

HM Short Paint Set

HM Schooner Ballahoo Paint Set

HMS Wictory Paint Set

HM Brip Badger Paint Set

HM Brip Badger Paint Set

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MKS125 1/16 Brass Tube (Pack of 3)
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6 Compass 360

This month's news round up and some great give-aways not to be missed

Vol.70 Issue 840: October 2020

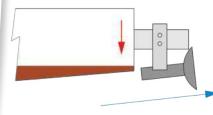


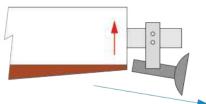
12 MB Q&A

Our Ed chats to Charalambos Karkatsoulis, co-owner of Navarino Models and the design genius behind some wonderful wooden wonders

16 Fire-float Denny

Richard Norman, former Chief Engineer at Dennis, reveals the history behind his 1:24 scale build of what's believed to be company's only venture into marine fire-fighting installations...





22 Get set-up

Want to start racing but daunted by all the complex issues to be considered? Ian Williams provide a simplified beginners' guide to surface drive boat set ups...

26 Heaven Shaker

Mike Williams reviews Mikro Mir's 1:35 scale Kaiten Type 2 and explores the back story of this sinister World War II manned torpedo prototype...

34 Free Palex 6 plan

Harry Hitchenes supplies build instructions for this month's free plan: a pretty little yacht which, although inspired by a toy, sails like a dream...



12 FULL HALF HALF 40 WIN a superb engine room clock for your workshop! Make sure you get your entry into this month's Batela Giftware prize draw in good time

44 Hitting the beach – Part 2

Nick Brown continues his Mountfleet Models' 'stand-off' scale Landing Craft LCM(6) mission...

50 Soobrazitelnyy – Part 19

Dave Wooley continues his 1:72 scale build of the new Russian multi-purpose Soobrazitelnyy corvette...



56 Boiler Room

Richard Simpson provides a simple and easy to understand guide to safety values and their maintenance

Model Boats October 2020



60 Flotsam and Jetsam

John Parker takes a nostalgic look back at some of the electric motors that once powered our model boats...

66 Your models

Welcome to this month's launch party

69 Your letters

Views aired and information shared



WELCOME TO THE OCTOBER ISSUE OF MODEL BOATS....

hanks so much for the fantastic response to my appeal for feedback. Likewise, I'm very grateful to all of you who've shared the stories behind, and fabulous photos of, your latest triumphs. Working on the Your Letters and Your Models sections is proving to be an absolute pleasure, so please keep the contributions coming.

Many of you have also messaged me to ask why the Classified section appears have been dropped and when/if it's likely to return. Unfortunately, I'm afraid the answer is: "Not for the foreseeable future". Why? Well, the majority of these private listings are, due to the size and fragility of the items in question, offered on a 'buyer collects' premise and, with no immediate end to the COVID-19 pandemic in sight, I'm sure you'll understand why we can no longer advocate such transactions. I guess it's just another frustrating reminder of the impact this microscopic virus is having on almost every aspect our lives.

I must confess that while interviewing Charalambos Karkatsoulis of Navarino Models for this month's MB Q&A (see pages 12-15) it hit me how much I long to holiday in Greece again – and at the same time, another random thought occurred to me... Before travel restrictions, I'd often see 'experience' holidays being promoted and I think I may just have spotted a very specific gap in that market: model boat building holidays! One of the Greek coastal resorts or islands would be the perfect location. Imagine being able to sit on a bougainvillea-clad terrace somewhere overlooking the big blue of the Aegean while crafting something beautiful to take home with you; all under the watchful eye of an instructor, there to provide hands on help, hints, tips and tricks. I doubt it would prove a hard sell to your other half either, as you could both do your own thing during the day and then spend the warm, balmy evenings together watching the sun go down while enjoying drinks and dinner at a charming local taverna.

Enough daydreaming! Time to cast off. Oh, and on the subject of time, be sure not to miss the opportunity to win a stylish Batela engine room clock in this month's prize draw (see pages 40-41). There's also a couple of great give-aways up for grabs in Compass 360 (see pages 6-7), too!

Enjoy your read,

Lindsey

COMPASS 360 Our hobby-related news round-up

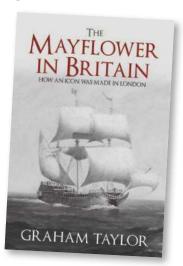
If you have a news story for these pages, please contact the Editor, Lindsey Amrani, via e-mail at editor@modelboats.co.uk or pick up the phone and call 01689 869840

Apologies to Amberley Books

In last month's issue we incorrectly attributed Graham Taylor's new book *The Mayflower in Britain – How an Icon Was Made in London* to the wrong publishing house. This title has, in fact, been released by Amberley Books (www.amberleybooks.com), so our sincere apologies to the folks there and for any confusion caused.



In the last month's issue, the supplier of the etched work for the Soobrazitelnyy build was listed



as 4D but was in fact supplied by **PPD Ltd**. Orders can be placed (please quote product reference number 27678) by calling 01546 603029 or via e-mail at: **enquiries@ppdltd.com**.

BANKSY HEEDS SOS

nonymous street artist Bansky has once again hit the headlines; this time by acquiring a former French naval vessel for use as a refugee rescue boat, having first adorned it with a bright pink depiction of a little girl in a life vest holding a heart-shaped safety buoy. The mission statement of the motor yacht, which has been named the *Louise Michel*, is to "uphold maritime law and rescue anyone in peril without prejudice". She's currently operational in the Mediterranean and crewed entirely by volunteers with previous search and rescue experience.

Unfortunately, as the budget won't stretch to a trip to the Med, and all images posted online have copyright attached, we can't show you a photo (a quick Google search, however, will call up plenty of shots). It perhaps goes without saying that as far as modelling projects go, this is one of those builds that will attract attention, get reactions and prove very controversial for years to come – a political hot potato of a model boat!

WIN!

WIN HAYNES' ROYAL NAVAL MOTOR GUN BOAT MANUAL!

Courtesy of the kind folks at Haynes Publishing, we've got one copy of the only just published Royal Naval Motor Gun Boat Owners' Workshop Manual to give away. This beautifully illustrated hardback book (ISBN 978 1 78521 142 3), jointly

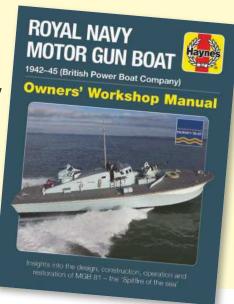
penned by the highly respected maritime historian Stephen Fischer and the Director of Marine Operations at Portsmouth Naval Base Property Trust, Diggory Rose, provides some fascinating insights into the design, construction, operation and restoration of MGB 81 – the Spitfire of the sea'. All you have to do to be in with a chance of winning

it is complete the form included here it and mail it back to us at:

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Please note, to be included in the draw, all entries must be received by no later than October 23, 2020.



GUN BOAT BOOK PRIZE DRAW

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EXCITING NEW PLANS
FOR APPLEDORE
SHIPYARD

ollowing its acquisition of the famous Harland
6 Wolff Shipyard in Belfast last year, UK based
company InfraStrata has now also sealed a £7
deal on the historic Appledore Shipyard in North Devon
(located on the estuary of the River Torridge).

Explaining InfraStrata's vision for the shipyard, which will now be known as Harland & Wolff (Appledore), InfraStrata's CEO, John Wood, points out: "We see Appledore playing a key role in an exciting new era for UK shipyards and shipbuilding. Our vision is to transform it into a thriving centre of excellence that creates jobs, trains apprentices and reestablishes this country at the forefront of a new generation of shipyards.

"For decades our outdated and unwieldy shipyards have been in decline and have continued to deliver programs late, whilst overseas yards have led the way in productivity and efficiencies. This is a once in a lifetime chance to re-build, modernise and re-shape the industry".



Signals

PONDSIDE BLING

nother modelling project candidate likely to divide opinion is the luxury £16 million super yacht, the *Bellami*, which sailed into Canary Wharf,

east London, this September, as the 170ft long vessel is covered in 600 square metres of gold vinyl wrap. The ultimate status symbol or vulgarity at its height? The wrapping procedure, normally associated with supercars, can last for several years and also protects the metal from damage caused by the elements and sun rays (anyone ideas on replicating that?).

The yacht itself can accommodate up 12 people and

boasts a large pool, a spa, a glass waterfall, six ensuite rooms: one master suite, a VIP stateroom, the double cabins and a twin cabin.
That, of course, all comes at a price, as a week's holiday on the *Bellami* will set you back £185,000!

WIN REVELL'S 1:83 SCALE MAYFLOWER 400TH ANNIVERSARY KIT

Also up for grabs this month is our example of Revell's 1:83 scale plastic kit for the *Mayflower*, just released in special 400th Anniversary packaging (Ref. 05684) and still in its sealed packaging.

As well as the components for the vessel itself, this Level 4 (aimed at the more experienced modeller) kit, which carries an RRP of £29.99, includes crew figures, a decal set, paints, adhesive, a flag chart, a stnd incorporating nameplate, full instructions and a complementary poster for display.

To be entered in this draw, complete the relevant form and send it back to us at:

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Enterprise Way
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Kent TN8 6HF

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Oh, and by the way, should you be lucky enough to win this kit, we'd love to see some photos of your completed build and be able to share them in the Your Models section of the magazine. Good luck!

to another individual and no cash or other alternatives will be offered. The promoters reserve the right to amend or alter the terms of the competitions. The winner will be chosen from all correct entries received by the closing date specified. Please note that data will be managed in compliance with GDPR law. Our privacy policy can be found at www.mytimemedia.co.uk/privacy. The decision of the judges is final and no correspondence will be entered into.



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"When you start a business, you have to ask yourself what your unique selling point is going to be..."

For centuries Greece has been a sea-going nation, with ship building arguably the oldest form of occupation for its people. Athens-based Navarino Models is now continuing that tradition in miniature and this month our Ed, Lindsey Amrani, chats to owner and designer Charalambos Karkatsoulis about the brand...

I must confess, Charalambous, that I know very little about Navarino Models, so to get started, can you tell me and, of course, the readers of Model Boats magazine, a little bit about the brand, the story behind it, what you see as the unique selling point and your role within the company...

Navarino Models was launched when I and a group of friends who all share a passion for wooden ship model building got together.

Greece, as you've already mentioned, has a nautical history that goes back for at least of three millennia, You'll see boats of varying description all around the country's coastline and throughout its numerous islands, even in the smallest of seaside villages. Most of them are recorded, but there are no models of them. We want to fill this gap.

As a company, we cooperate with our country's museums and over the last three years have been working with professors from the National Technical University of Athens on projects of Experimental Archeology.

I've been modeling for 42 years now and during the last 27 I've exclusively focused on wooden ship models. I love working with wood; it's an honest, natural material. I used to build wooden ship models from scratch for myself and for friends who wanted something unique for their collections/homes. Then, in 2001, I got involved in the project Argo and constructed a 1:8 scale model of Jason's mythical Monoreme Pentikontoros.



An avid modeller himself for the past 42 years, Charalambos Karkatsoulis now mixes work with pleasure.



From that the team went on to build an actual vessel and in 2006 conducted an experimental trip, so I feel really proud to have been responsible for the digital design and building of the prototype model. As all of our model boat designs are inspired by the special feelings we have for the vessels themselves and their beautiful lines, it was perhaps inevitable then that we'd go on to incorporate this experience into a Navarino Models kit.

But, of course, when you start a business, you have to ask yourself what your unique selling point is going to be. By 2015, it was impossible for us to invent the wheel, because the wheel already existed. So, we decided not to produce one more model of HMS Victory (I love this ship) but to offer the model boat builders something completely different, in terms of design and philosophy.

We promised to ourselves we would not produce versions of models already marketed by others, but instead be as original as possible by choosing subjects no-one else has tackled. Take, for example, Monoreme Pentikontoros: our kit is made entirely from wood, and is built in the same way that ships were back in 1400 BC, so the modeller has to work using the same (shell first) method and techniques employed by the ancient Greeks.

You specialise in wooden kits, featuring some resin and brass parts. Are all the components in your kits manufactured as well as designed in Greece? And if so, how difficult is it economically to compete with the multitude of kits on the market that are produced, I assume much more cheaply, in factories in China and the Far East?

Our kits are entirely designed by us; where possible, by painstakingly scaling down the blueprints for the full-size vessel. This means that when we need a component which doesn't exist in the European market, we can design and produce it ourselves. Portholes and hinges, for example, can be purchased from European manufacturers we try to support Greek companies first so that the market can support us later and the same goes for the European market – but components such as the funnel of Brockley Combe or the capstan for the Aris were designed and crafted by Navarino Models. While very much using traditional techniques, we also make use of the wonders of modern technology; the figurehead of Aris. for example. was scanned in the National Historical Museum, scaled down and then replicated in miniature with the use of a 3D printer.

Yes, it's very difficult to compete with China's production

Navarina modelia

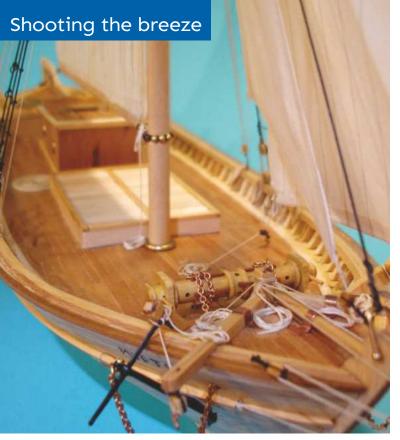
If you love working in wood, you'll find the oh, so Greek 1:35 Trechantiri a truly wonderful project.

lines and prices, but we're trying to rejoice in what we're doing – and so far, so good. As a result, we can make all of our own production decisions and can take full control of the raw materials we use. With plastic models, many modellers will buy a kit and then end up spending at least the same amount of money they shelled out for it on quality/detail modifications/upgrades. We take a far more holistic approach with our kits.

When customers receive their Navarino Models kits, what can they expect to find included and what sort of skill levels are required to achieve the results shown in the fabulous completed build images shown your website?

When someone orders a model from Navarino Models the transaction is done usually via PayPal. We post the parcel via the Hellenic Postal Service and we advise customers of the tracking number. On the box cover, there's a photo of the finished model. Everything that appears in the photo – these can also be viewed on our website – is provided in the kit.

The package is sealed with a Navarino Models sticker. Opening the box, the customer will find a part lists and an instruction manual – in English, as well as the drawings of the model, which number the elements. Not included are the glues and paints – as we appreciate modellers will have their own personal preferences.



The fittings supplied in Navarino Models' kits are cast in either brass or copper, although aluminium has been used for the fishing net winch on the new Trechantiri.

The bulkhead frames and the keel are made of Russian birch for solidity and they are cut by CNC router technology. This way, we avoid darkness to the edges. All fittings are supplied in bags or plastic trays.

We don't use white metal fittings; we don't like them. We

use brass or copper, although for the new *Trechantiri* (a truly traditional Greek boat) kit we've used aluminum for the vessel's fishing net winch.

The planking strips are made of lime wood, ramin, walnut, beech wood, etc. It depends on the part being constructed.

BELOW & INSET: To mark the 200th anniversary of the Hellenic Revolution against the Ottoman Empire in 2019, Navarino Models produced this limited edition 1:50 scale kit for the brig Aris; the components, plans & instruction manual presented in a stylish wooden box with sliding lid.

"There are no good or bad modellers; there are simply the experienced and less experienced"

When a ship model has sails, these are cut from high quality cotton, while the rigging lines are all made from either Greek or Egyptian cotton.

On our website, there are articles (blogs) that provide some help for beginners. At the moment they are written only in the Greek language, since in our country those in the ship modeling community don't, generally speaking, tend to be as experienced as those who read your magazine. Visitors to our website will note, however, that we've divided our models into three different skill suitability levels. As someone once wisely pointed out to me, though: "There are no good or bad modellers; there are simply the experienced and less experienced". OK, so the beginner is a beginner, but does he want to learn? Does he have the patience to deal with each aspect of the build separately? Because by viewing a project like this, you can then tackle lots of small project individually and then eventually combine them to achieve a really satisfying end result. In other words, take things step by step. As infants, we don't get up and run straight away; first we learn to crawl, then to walk and finally we run!

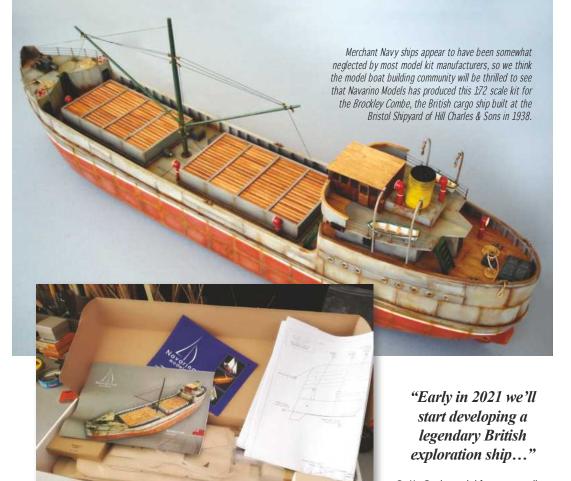
The current range includes not only some fascinating historic ships, one of which being the beautifully presented and packaged limited edition 1:50 scale 1918 brig Aris, but also some gorgeous traditional but relatively more modern 1:35 scale Greek boats, which will be very evocative for anyone who has enjoyed holidays in the Greek islands. What, then, is the criteria when making subject choices?

All the historical documentation is there but the vessel doesn't already exist as a kit, we have only one question to answer: would I put this model in my office, or in my living room? If the answer is yes, then we move on. And we always start working with the construction of the most difficult/demanding aspects first.

Considering the above, it's fantastic, but surprising, to see that you've added a 1:72 scale kit for the British cargo ship Brockley Combe to the range. How was that decision arrived at?

I'd built the Brockley Combe from scratch to 1:50 scale back in 2011, as I simply love her gorgeous old hull. As I'd taken a photo of my wife standing alongside her, I decided to change the name on my completed model





Detailed plans and a full instruction manual are included with all of Navarino Models' kits.

to that of my wife's, so she became the Eleni. Later, while doing some market research for Navarino Models, we realised that there was no kit for this classic cargo ship available, so that's where the idea came from. Frustratingly, despite having checked out the Lloyds records, we couldn't find any history for her, but we liked her enough to go ahead anyway. In 1:72 scale, she's perfect to display or include on a diorama alongside a Spitfire or a submarine...

Can you give us any hints as to what's on the horizon, i.e. what model builders can expect next from Navarino Models?

Good question! As a team, we're like children in a toy store – we want to get our hands on everything! Seriously, though, we have plenty of competitors and many of them are excellent, so why would anyone want to buy a

Cutty Sark model from a small Greek firm? Our goal is to build kits for models that don't already exist, mainly Greek. By the end of the year, we'll release another kit within the Trechantiri range. This will come in 1:20 scale and will be more modern subject matter wise; the kind of boat one can see fishing in the Greek islands. Early in 2021 we'll start developing a legendary British exploration ship. I read this ship's diary 15 years ago and found myself totally absorbed by it, so it's long been in my mind to model her.

Any final words for our readers?

As evidenced in this shot of Navarino's 124 scale Chaniotiki Gaita (representative of the type produced in Chania, Crete during the early 20th century – examples of which survive to this day), different colour paints and weathering effects can be employed to make each individual completed build totally unique.

Shooting the breeze

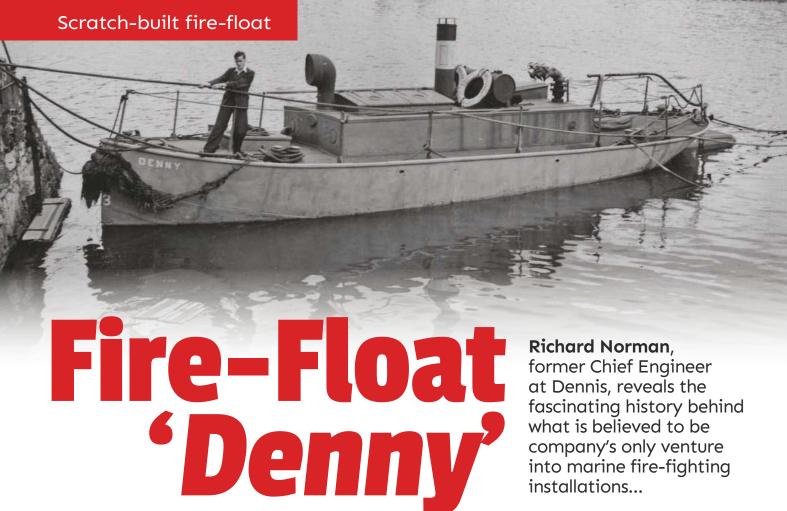
QUICK FIRE QUESTIONS



- **Q** As a little boy, what did you want to be when you grew up?
- A fighter jet pilot what else?
- **Q** If you weren't in the model boat business, what would be your dream job be now?
- A surgeon
- **Q** What's the best piece of advice you've ever been given?
- A Persevere, and be patient
- Q Do you have a nickname?
- A Babiskark
- **Q** When you want a break from Athens, which Greek island is your go-to R&R (rest and relaxation) destination?
- A Hydra in the wintertime, Angistri in the spring (1-2 hours from Piraeus port)
- **Q** Someone is going to cook for you: what's food heaven and what's food hell?
- A Steak with French fries is my idea of food heaven Feta cheese is the road to hell. (I love Chris Rea!)
- **Q** Name something you've always wanted to do/learn but haven't got around to yet?
- A Learning to fly.

Yes: ours is a great hobby filled with some wonderful characters, so please all stay safe and healthy. It's very important we continue to build models with which to inspire the next generation!





"Can anyone reading, I wonder, advise why fire-fighting vessels are uniquely referred to as fire-floats in Britain but fire-boats in the rest of the world?"



Probably best known for its fire engines, fascinatingly, Dennis Bros did once test the water with a marine fire-fighting installation...

installations...

was employed by Dennis for many years and held the position of Chief Engineer there from 1985 right up to my retirement in 2010. The history of the company, however, goes back way beyond my time. Dennis Bros started building vehicles in the Surrey market town of Guildford in 1895, so this year celebrate 125 years of continuous manufacturing in the town. Indeed, those of you who have also have an interest in vintage vehicles may be aware John Dennis, the grandson of one the founding Dennis brothers, has kept the rich heritage of the company alive by competing in over 60 London to Brighton Veteran Car Runs in his 1902 Dennis car. This beautifully preserved car originally hailed from the first purposebuilt Dennis factory (a Weatherspoons' pub now sits on the site in Guildford's town centre). Over the years the company, perhaps best known for its fire engines, has passed through the hands of a number of different owners and as Alexander Dennis is today the UK's largest producer of buses.

No smoke without fire

During my time at Dennis, as a keen model boat builder in my spare time, I became intrigued by a rumour within the company that Dennis had once produced a fire-float. (Can anyone reading, I wonder, advise why fire-fighting vessels are uniquely referred to as fire-floats in Britain but fire-boats in the rest of the world?).

Frustratingly, for some years it seemed that fire-float would remain just hearsay. But then, as luck would have it, during a clear out of the archives pending a factory move drawings of the float finally surfaced.

"She was christened Denny not, as one could be forgiven for imagining, as a play on the Dennis name"

Excitement dampened down

At this point, I took the opportunity to make copies before the originals were passed to the Surrey History Archive in nearby Woking. While the drawings, dated 1915, showed the installation of the propulsion and fire pump, however, I quickly realised there was insufficient hull detail from which to draw up plans for a model. Somewhat disappointed, therefore, I simply took the copies home and filed them away (see **Photos 1** and **2**).

Enthusiasm rekindled

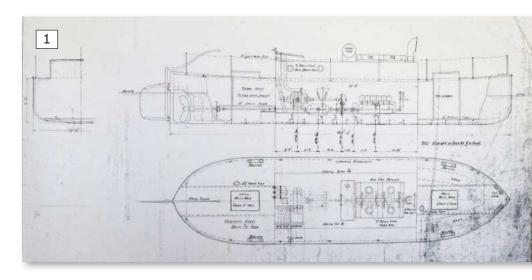
It was not until my retirement, when I eventually pulled them out again, that I noticed the drawing's title included the words 'Bristol Fire Float'; so, although I felt it would be a long shot, I decided to contact the Bristol M Shed Museum. Almost by return, and much to my delight, I received two photos of the float – which, I discovered, had been named Denny, together with other historic material featuring sufficient detail to make the project a viable proposition.

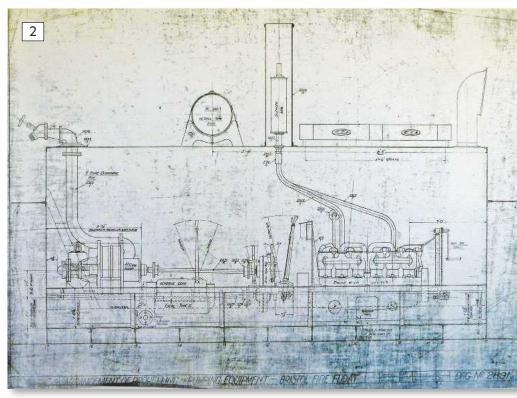
Denny's history unravelled...

Denny entered service with the Port of Bristol Authority in 1916 and is one of the earliest examples of a dedicated fire-float with an internal combustion engine. This engine was used for both propulsion and to drive a turbine pump through a power take off.

Early waterborne fire-fighting vessels were either steam tugs fitted with a fire pump or, as was the case in Bristol docks, rowing boats equipped with a coal fired steam pump. As such, it was often the case that a fire had burnt out before the fire float could reach the scene and raise steam to power the pump. A self-propelled vessel with a quick starting internal combustion engine that could rapidly get to the scene of a fire and raise water, therefore, would have been a major advance at the time.

Denny had a length of 40ft, with a 10ft beam, and was constructed of riveted steel. The hull and superstructure for Denny was manufactured in Sudbrook, Monmouthshire on the Welsh side of the Bristol Channel by C.H Walker & Co. Ltd. The village of Sudbrook was originally built to house workers constructing the nearby Severn Rail Tunnel, which was completed in 1888. The tunnel's contractor and chief engineer, Thomas Andrew Walker (died 1891), who owned the Sudbrook estate, then opened a shipyard in the vicinity to take advantage of the existing infrastructure and skilled workforce. In 1902 his nephew Charles, formed C.H. Walker and Co Ltd to continue the shipbuilding industry in the area, manufacturing steel hulled vessels up to 700 tons. The yard closed in 1922.



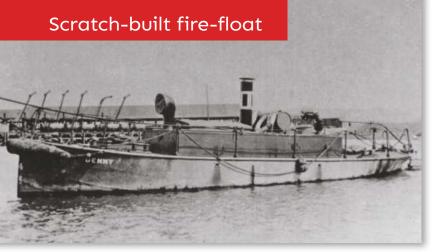


From 1908, Dennis Bros began pioneering the introduction of motorised fire engines; these often replacing horse-drawn, coal-fired, steam pumps. It's perhaps not surprising, therefore, that the Port Authority looked to the Guilford-based manufacturer for its equipment and expertise when it came to installation of the propulsion and fire- fighting equipment. Interestingly, this float is believed to be the only venture by Dennis into the supply of marine fire-fighting installations; although the company maintained its position as a leading manufacturer of fire engines in Guildford right up to the cessation of production in 2007, a period just short of 100 years.

Denny was powered by a White & Poppe 127x150, 11.4 litre 6-cylinder petrol engine, with an output of 95bhp at 1180rpm. White & Poppe was a Coventry-based engine manufacturer and Dennis used its 4-cylinder engine in road-going fire engines, trucks and buses. In 1919, Dennis Bros acquired White & Poppe, moving production to its rapidly expanding Guildford site.

The float's fire pump was a Gwynne turbine pump, as fitted to Dennis fire engines prior to the introduction of a pump of Dennis's own manufacture introduced in the 1920s. Turbine pumps provided a much smoother delivery compared to the reciprocating pumps prevalent at the time.

She was christened *Denny* not, as one could be forgiven for imagining, as a play on the Dennis name but, in fact, after *Denny* Island – a small rocky isle located in the Bristol Channel. Stationed in Portishead Docks, she is believed to have seen service as a fire-float up until 1953, although she survived for some time after being decommissioned and is said to be have still been around as a converted boat until the late 1990s. Her ultimate fate, however, appears to be unknown.





DENNY. Built Sudbrook 1916. Ph. 15. 6.37.

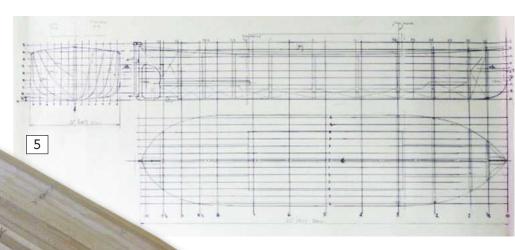
ABOVE: The two photos of Denny supplied by Andy King of the Bristol M-Shed Museum show the float moored at the same pier, although judging by her condition these must have been taken some years apart.





Building Denny in 1:24

The two photos of Denny that were kindly supplied by Andy King from the Bristol M-Shed Museum show the float moored at the same pier, although judging by her condition these were taken some years apart. Dimensions were measured from these photos using 'Brava! Reader' software



"Having fabricated one stanchion support from brass and plastic card, the thought of making another 14 exactly the same quickly saw me looking for an alternative method!" (free to download). These measurements, together with two arrangement drawings from the Dennis archive, provided sufficient details for construction of my model.

Using the profiles from the side and plan

elevations and the section amidships
from the drawings, balsa blocks were
shaped for the bow and stern
sections using the photographs
as a guide (see **Photo 3**). The
profiles for the hull sections
were then taken from
these patterns (see

Photos 4 and 5).

6









13









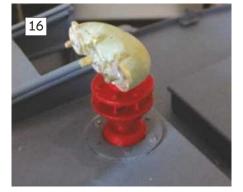
The branch manifold for the fire hose connections was constructed using a fabricated brass armature filled with Milliput,

which was then filed and sanded to shape (see **Photos 14**, **15**, **16** and **17**).

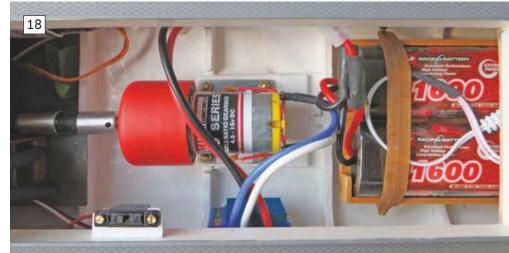
I incorporated a 2-channel radio control for forward/astern and rudder control, and a 7.2 volt NiMH battery to power a low drain 385 motor with a 2.5:1 reduction gearbox for propulsion (see **Photo 18**).

The drawings appear to show a two-bladed propeller (although this may have been just for ease of drafting); however, as this was still the early days for propeller driven craft, and I have seen similar sized old working boats with a two-bladed prop, I decided this was the way to go.

I had anticipated a dynamic paint scheme of fire engine red so was somewhat disappointed when the Museum advised that Denny was actually grey, with a black funnel black and Bristol Port Authority markings. The old black and white photos show a slight









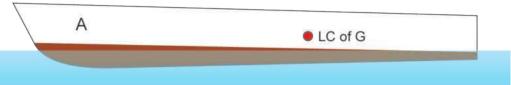


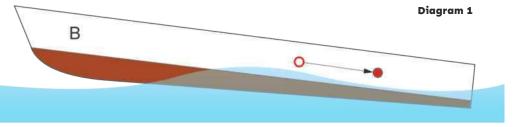
Want to start racing but daunted by all the complex issues to be considered? **Ian Williams** provide a simplified beginners' guide to surface drive boat set ups...

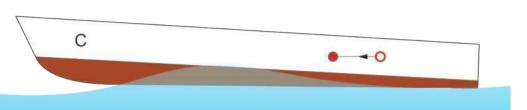
his article was inspired by some of the more typical questions posed by inexperienced modellers who want to start racing but who first need some help and advice in terms of set up. Concerns are frequently voiced on aspects such as shaft angle and what might happen if this is got wrong, CofG (Centre of Gravity)

positioning, etc; hardly surprising, as most racing boats are presented as bare hulls and include no set up data at all! Let me see, then, if I can help... I should point out that I am going to be concentrating on surface drive boats here, although I will start with CofG, where the same principles also apply to submerged drive.

"You will hear people talking about getting a boat's centre of gravity right; what they are actually talking about is the longitudinal centre of gravity"







CofG for planing hulls

A) Mono hulls and Cats

While this is a fairly complex subject, for the purpose of brevity, I am going to simplify things to death!

In short, what you mainly need to take into account with model planing hulls is the longitudinal centre of gravity. (LCofG). You will hear people talking about getting a boat's centre of gravity right; what they are actually talking about is the LCof G.

For every particular hull and speed there is an optimum LCofG, but as speed increases the optimum LCofG moves aft. **Diagram 1** (Drawings A, B and C) should, hopefully, help to explain this statement. Drawing A shows a basic hard chine type mono hull at rest, floating to its waterline marks. As the boat accelerates (see **Drawing B**) the bow rises and the stern squats. As the attitude of the hull changes so the LCofG moves further aft, until the hull gets over the hump of its own bow wave and the attitude of the hull becomes more stable. (see **Drawing C**). At this point the LCofG will have moved forward towards the bow, but not as far forward as its original position when the boat was stationary. So, if you get the LCofG wrong initially this will cause problems when you



"If you use a fixed solid drive and get the angle wrong, you'll be in trouble"

run the boat. If the LCofG is too far forward, it could run too wet. Too far rearwards and it could become unstable in turns or bog down the prop. Porpoising can also occur here if the LCofG is too far to the rear. Porpoising, however, does not seem to be quite such a problem on stepped mono hulls, as opposed to standard monos. Any number of things can happen and don't forget it's not only the LCofG that affects the running attitude of the boat. We'll get to that later!

Now, there is a rule of thumb appertaining to LCofG, which is that it should be around 30% of the waterline length of the hull, measured from the transom forward, and this applies to both monos and cats. While this is, of course, not a hard and fast rule, it is at least a starting point! The CofG would normally lie in the centre line of the fore and aft plane of the hull; how high it is above the bottom of the hull alters different parameters such as how 'tender' the hull is, roll rate, etc, although this doesn't really apply all that much to racing hulls, especially catamarans. Note that the CofG in a fast electric racing mono hull need not necessarily be on the centre line! As they have flood chambers on the left side of the hull to facilitate self-righting after a flip, they almost always have a list to port when at rest in the water. This list is often considerable, as the batteries, and sometimes extra weight, will be placed on the left to aid the self-righting action. This lateral displacement of the CofG normally has no effect on the LCofG and will generally move back to the fore and after centre line when the boat is running up on plane.

You can alter the CofG slightly to allow for different water conditions; forward for rougher water to keep the hull planted, or rearwards to free up the hull in flat water conditions. This is about all you can do if you

have a solid fixed angle prop shaft. There are, however, several other things which can affect and change the running angle of the hull, which we will get to in a little while...

B) Outrigger hydros

Calculating the CofG for a 'rigger' is different to that for a mono or cat hull. It is normally stated as 15 to 20% of the water-plane distance. Unlike the mono hulls, the CofG is measured backwards from the rear of the front sponsons towards the rearmost suspension point of the hull (the water-plane distance). The rear suspension point could be a ski ramp, rear sponsons or simply the prop itself. Hydroplanes usually do not usually benefit all that much from altering the CofG. The balance point is usually pretty fixed on a hydro and more or less has to be designed in. It is virtually the same for whatever conditions you are running in, although there is a little wiggle room. Scale hydros can be difficult to get onto the plane, with a very forward CofG often tending to submarine. With an outrigger, space is often limited, making it almost impossible to move things around. One of the worst things with a rigger is to have the CofG too far forward; this will cause the rear of the boat to bounce up and down.

Drive angle and adjustments

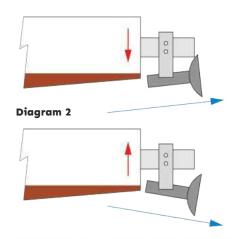
To be honest, I'm not a lover of straight solid shafts for use with surface drive. I much prefer a flexi drive system with a stinger or, even better, a separate drive strut on a bracket. Now, I know it's argued that there is less friction with a straight drive than with a flexi system, and that it's simpler and cheaper but, all things being equal, the difference is not that great and I'll gladly swap all of that for the much greater adjustability a flexi drive system brings. With a stinger on a mono hull you can change the drive (thrust) angle and have a small amount of vertical movement of the prop. A strut

system will give thrust angle adjustment, too, but with a greater vertical adjustment.

The thing is, the idea is to have the thrust angle as near as possible horizontal to the water surface. Common sense should tell you that if you use a fixed solid drive and get the angle wrong, you'll be in trouble. If hull manufacturers would include a basic set up diagram it would help, although, of course, an adjustable system solves the problem. However, in all fairness, I should tell you that there are loads of fast boats around with solid shafts!

Stinger/strut adjustments for monos and cats

The importance of an adjustable drive system is the ability to change the thrust angle of the prop. This will adjust the ride attitude of the hull. Angling the stinger/strut on a monohull or catamaran, so that the prop is pointing up a little (see **Diagram 2**) will result in the ride attitude becoming 'loose', i.e. the hull will pitch up at the bow. This is also known as positive drive angle and will decrease the amount of hull drag but also decrease stability.



RESULTS OF ANGLED THRUST LINE



"Rudder adjustments can have much more of an effect on a boat's handling than you may think"

Adjusting the ride angle so that the prop now faces down (see **Diagram 3**) is known as negative drive angle. This drive angle will push the bow of the hull into the water increasing drag but also increasing the effect of the rudder. Too much negative angle will make the hull run wet, and too much bow down attitude may cause a spin out when cornering.

An increase in the height of the outdrive will move the prop away from the water. The prop will run shallower. This may increase output drive RPM because of a reduction in load.

A decrease in height of the outdrive will run the prop deeper in the water. A deeper prop will increase the load on the motor and will not always, depending on the prop diameter and pitch, give you extra thrust. As a matter of interest, if you fit a much larger diameter prop than you normally use, you should lift the strut to allow the prop to operate correctly. If you don't, the prop will probably bog down, negating the performance increase that may have been available from the larger diameter prop. Of course, the opposite also applies; drop the strut with a smaller diameter prop. Another good reason for using a flexi drive system! If you keep the diameter of the prop the same but increase or decrease the pitch you should not have to adjust the height. It should also be noted that some props have built in lift, to a greater or lesser degree. This can also affect the hull's running attitude.

Strut adjustments – hydro hulls

For a hydro style hull the effects are different. Positive drive angle will push the rear in to the water proportional to the prop thrust. Negative drive angle will push the rear of the hull into the air proportional to the prop thrust.

Lifting the strut (prop line closer to hull bottom) on a hydro style hull will lower the rear of the hull into the water. A strut that is too high may allow the hull to run too deep. Lowering the strut (prop line further from hull bottom) will force the hull higher out of the water. This will decrease hull drag. Over doing this will cause the rear of the hull to hop along.

Trim tabs

Trim tabs are very rarely seen on stepped mono hulls. If you have to use them to get the hull to run right, your basic set up is wrong.

Try to avoid trim tabs – they cause drag!

Rudder adjustments

Rudder adjustments can have much more of an effect on a boat's handling than you may think. Remember, we are only talking surface drive set ups here. With some rudder set ups it's possible to have a small amount of fore and aft rake adjustment of the rudder blade; or, it's possible, by shimming the rudder bracket, to provide angle adjustment in that way. As a reference point, when the rudder is perfectly straight up and down, this will be our neutral point.

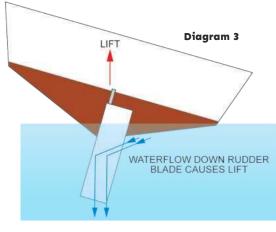
When the bottom of the rudder is tucked in towards the hull, this will affect the ride attitude during turns only. During a turn with the rudder angle in towards the stern, the hull will drop the stern and lift the bow, allowing the hull to corner better. If the rudder is rotated away from the hull, it will do the exact opposite. This will tend to push the rear of the hull up. If taken too far, the prop will unload during a turn, or, if the bow drops too deep, cause the hull to spin out.

One thing that is not often thought about but which can have an effect on the handling of a boat is the width and length of the rudder. This is more prevalent in mono hulls. Diagram 3 shows what happens to the rudder of a medium to deep V mono hull as the rudder is put over and the boat heels into a turn.

As the rudder turns, water rushing across the blade can cause the stern to lift. As the bow goes down, it can cause the boat to spin out. Stepped monos tend not to heel so much in a turn, but the same thing can happen and the boat will spin out.

There is one other thing I have seen on stepped monos: an oversize rudder can cause the boat to slow in a turn and drop off the step. This sometimes results in the boat rolling over, rather than dropping the bow and spinning out. This effect is much less noticeable in cats and hydros as they have more lateral stability than monos. Although that said, I did have one cat that would often roll over sideways in a turn. Cutting half an inch from the bottom of the rudder cured this!

Avoiding overload There are, of course, all sorts of other factors that can alter the running attitude of a boat. I have not even mentioned hull design features – perhaps something we will return to in a future issue. I am, however, going to leave the subject here as this was never intended to be an overly technical piece and with so much information take on board, you will probably need time to pause and absorb everything explained so far. Feel free, though, to forward your questions to the editor and we will try to address these either on the Letters pages or in future features.



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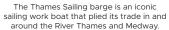
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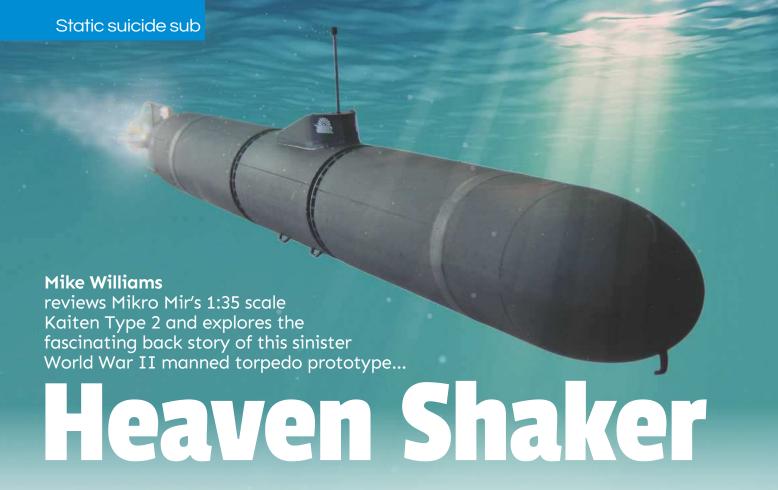
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hile working on Fine Molds 1:72 scale Kaiten Type 1 Mod 1 manned torpedo (Ref: FS1s), which resulted in not only a rather aesthetically pleasing streamlined torpedo shaped model (20.5cm overall and 1.4cm in diameter) to add to my Imperial Japanese Navy (IJN) collection, I found the background reading into this fascinating, albeit macabre, subject absolutely riveting. This revealed the existence of more evolved Kaiten craft and, although none saw active service, I became intrigued by where the Japanese were going with the development of such a desperate human-torpedo concept.

A follow-up modelling project was, therefore, inevitable. A number of variants were possible candidates for this exercise, with Type 2, 4, and 10 being the best documented of the evolved prototypes that the IJN committed valuable time and material to. Of these, the Type 4 was the most likely to have seen service first if the war had continued; this, however, evolved from the experimental Type 2 prototype. Aware that the Ukrainian firm of Mikro Mir had recently released a truly massive 1:35 scale injection moulded plastic example of the latter, I decided I simply had to build this.

"Its nomenclature, which literally translates as 'Heaven Shaker' or 'Turn of the Heaven's Will', was very apt, as the one-man operated Kaiten was capable of destroying an enemy capital ship in any successful attack"

Kaiten Type 2

The Kaiten Type 2 was an impressive craft. It measured 16.50 metres overall, had a 1.35-meter diameter body and a total weight of 18,170 kg, which included its potent 1,500kg warhead. Its nomenclature, which literally translates as 'Heaven Shaker' or 'Turn of the Heaven's Will', was very apt, as the one-man operated Kaiten was capable of destroying an enemy capital ship in any successful attack.

A revolutionary Type 6 4.3 litre engine was fitted, fuelled by kerosene which was oxidized by the reaction between hydrogen peroxide and hydrazine hydrate, the catalyst for which was potassium cuprocyanide. This

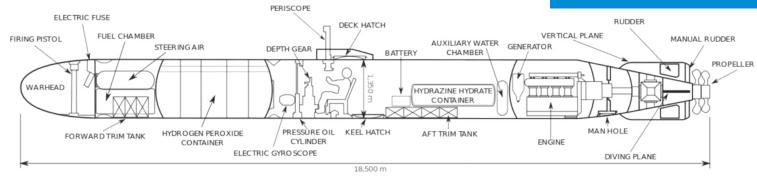
novel power plant, which used sea-water as coolant, was capable of achieving a speed of 20 knots over a range of 83,000 meters, 30 knots over 50,000 meters, or 40 knots over 25,000 meters.

The general construction of the Type 2 was substantially more advanced than the Type 1, with the forward section aft of the warhead, followed by the fuel, trimming and steering air tanks. The forward part of the midsection was occupied by the complex to fabricate hydrogen peroxide chamber, then the compartment for the craft's sole pilot with his depth, trim, engine, fuel and warhead controls. To the aft was found the battery for the gyroscope and other electrics, the rear trim tanks and two hydrazine hydrate containers, then the engine compartment (completely filled with sea-water), followed by the reduction gears and finally the propellers and control planes.

It is purported that the advanced Kaiten Type 2 could maintain a relatively reliably course with no pilot input and could withstand depths twice as deep as that of the Type 1, with a maximum operating descent of 100 meters. During trials, however, severe problems relating to the engine were

What has been described as a Kaiten Type 4 on display at the USS Bowfin Museum in Pearl Harbour; externally, this is identical to a typical Type 2.





"Referring to or displaying Mikro Mir's model as a Type 4 rather than a Type 2 will likely be deemed acceptable to all but the most pedantic"

encountered, with water pressure causing deformation and seizing of the engine, a serious defect which was never resolved. This, along with the complexity of the manufacturing process involved in the Type 2, eventually led to the abandonment of the project. It's believed only four were built; one of which remains in preservation at the Yokosuka Naval Arsenal, while the other three reside at the Hikari Naval Armory.

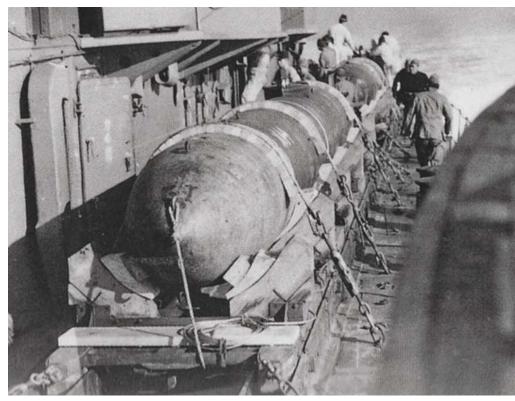
2-4-one?

It's estimated that no less than forty to fifty Kaiten Type 4s, with the more 'conventional' all-oxygen engine, were completed. Even here, though, difficulties were experienced which, given the IJN's commitment towards fully developing the already operational and proven Kaiten Type 1, no doubt also led to the cancellation of this version along with the Kaiten Type 2.

Due identical overall dimensions and the very similar external features shared by the Type 2 and the Type 4, referring to or displaying Mikro Mir's model as a Type 4 rather than a Type 2 will likely be deemed acceptable to all but the most pedantic.

Other options

Our model manufacturers have not overlooked the sheer novelty and potential of the overall Kaiten program. Not only are there a number of 1:72 scale initial operational Kaiten Type 1 craft offerings but there are also some 1:350 and 1:700 miniatures available to accompany similarly scaled IJN submarine models. What's more, not only has plastic kit manufacturer Mikro Mir opted to release the proposed Kaiten Type 2 design but the craft has also been faithfully replicated in 1:72 scale by two resin kit manufacturers, Kora (Ref. W-7202) and Choroszy Models (Ref. S-11).



Various trial launches were conducted from the Kitakami, the only the vessel ever to have carried the Kaiten Type 2.

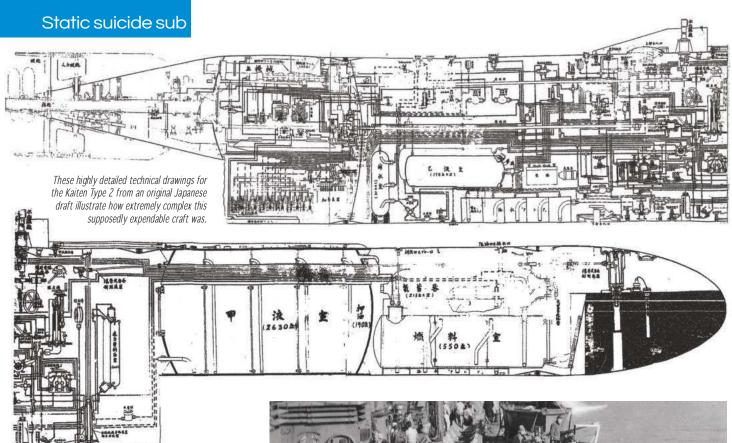
A rather confusing release, due to the five Kaitens it carries, is Lindberg's massive 1:72 scale submarine 1-53. For some reason, this manufacturer has erroneously dedicated its considerable efforts into modelling the experimental Kaiten Type 2 (or similar Type 4) rather than the actively deployed Type 1. There's a world of difference between a Type 1 and Type 2, so unfortunately the only resort for Lindberg 1-53 modellers looking to achieve authenticity is the purchase of five Fine Molds units –a pretty expensive way to rectify the situation. Further to this, Eduard Models has released an etched detailing set (Ref. 53 053) of two frets dedicated to the Lindberg's Kaitens, primarily for the deck mountings that secure the harness and shackles. Despite this blunder, however, it is interesting to see how the Kaiten Type 2 outfit intended for an IJN fleet submarine might have looked.

The Mothership

As the Kaiten Type 2 never became operational, it would forgivable to assume that as a prototype it was only ever tested in dry-dock under controlled submerged conditions, rather than in open water. My research, however, has revealed that the extensively converted light cruiser *Kitakami* trialled both the Type 1 and Type 2 at sea in early 1945.

The *Kitakami*, completed on April 15, 1921, initially, displaced up to 5,182 tons, measured 152.4 meters overall, had a beam of 14.2 meters and sported four Gihon geared turbines fed by twelve Kamon boilers which developed 90,000shp. In her prime, she could achieve 36 knots, and with an early armament suite of seven single 14cm guns and eight 533mm torpedo tubes she was a potent vessel. In 1941 she (along with her

By January 1945, the light cruiser Kitakami had been extensively modified to carry both Kaiten Type 1 and Type 2s.



sister ship, O) underwent extensive work, emerging as a torpedo light cruiser with an outfit of ten quadruple Type 93 torpedo tubes. Further conversion, in late 1942, saw her converted into a fast transport ship.

By August 14, 1944 she'd arrived at Sasebo to begin far-reaching repairs following extensive service and telling damage during the gruelling Pacific War. During the undertaking of this work, it was decided to modify her into a unique Kaiten carrier, intended to handle up to eight humantorpedoes, amidships and aft, on rails running along the sides of her upper deck. These would be handled by a 20 ton capacity crane, with a new main armament of two Type 89 12.7cm guns and sixty-seven Type 96 25mm antiaircraft guns, along with two Type 13 air-search and a Type 22 surface-search radars fitted. Her stern was remodelled with a pronounced overhanging ramp configuration, with her aft turbines removed with the space used to hold spare and repair equipment, reducing her top speed to 23 knots. The transformation was completed on 20 January 20, 1945 and she was ready to begin her new Kaiten carrier role.



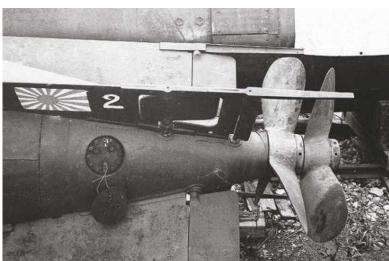
The empty Kaiten deck on board Kitakami, included here to illustrate the robust crutches and handling rails required to launch such a massive craft over her stern.

In this duty she performed an undisclosed number of surface ship launch trials over her specially modified stern, primarily with the operational and proven

Kaiten Type I. There were, however, a few experiments with the much larger Kaiten Type 2 – its only sea time before the Fall of Japan in August 1945.

BELOW LEFT: A Kaiten on temporary display at Mystic Connecticut taken in March 1970, a good view of her contra-rotating propellers, rudders and guard. BELOW RIGHT: Although no images of markings exist on any preserved example, it's most likely Mikro Mir used this photo from the immediate post-war period, taken at Yokosuka in September 1945,





"First impressions suggest the actual build will be a very straightforward process;
I, however, found the task a little more challenging than initially expected"

Mikro Mir's model (Ref. 35-019)

Let's have a look, then, at what Mikro Mir has actually produced here...

This 1:35 scale Kaiten Type 2 (II) 'Japan Suicide Craft' kit comes presented a relatively light card 30cm by 15cm by 4cm top opening box, with all the contents secured in a single polythene bag. I purchased my example for a total cost of £34.30, direct from the Ukraine. It did seem a rather expensive proposition to me, but I suppose manufacturers have to see a return on investment when tooling up for more obscure subjects, such as this prototype special attack craft.

Surprisingly, considering the impressive dimensions on completion, assembly of this kit involves just 36 medium-grey injection moulded plastic parts (carried on four sprues), seven brass etched pieces (on a small fret) and a six item decal sheet. First impressions, therefore, suggest the actual build will be a very straightforward process; I, however, found the task a little more challenging than initially expected.

In fairness, the nine page A5 size instruction booklet is simply presented and quite easy to follow. There are, however, heavy attachment points and these, along with some light flash and seam lines, need to be cleaned up. Likewise, there are flush mating surfaces on the main hull sections where no location holes and pins to aid union have been provided. With a few little tweaks, though, everything finally lines-up nicely, aided by the four principal hull sections having registration lips and recesses at the ends to join them all together.

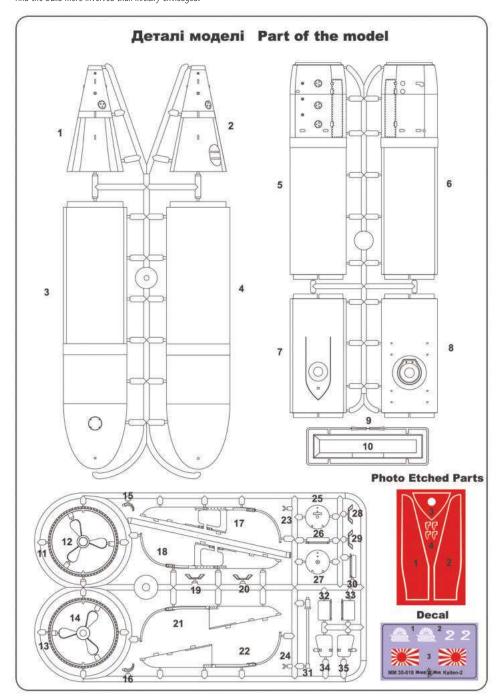
One nice touch in Mikro Mir's overall presentation is the provision of the two delicate sets of contra-rotating propellers, each featuring three commendably thin blades. Each of these propellers comes securely protected within a heavily moulded main hull union ring, safely framed within a sprue, thereby guaranteeing their safe keeping in transit.

Obviously of overwhelming importance when appraising a model, especially one representing such an arcane subject, is its intrinsic scaled down accuracy when compared to the full size prototype. On completion, from warhead to propeller boss Mikro Mir's 1:36 scale Kaiten 2 measures in at an impressive 46.7cm overall (48.2cm including the aft guard), with its cylindrical hull measuring 3.75cm in diameter, so I can confirm it's spot on both dimensionally and in overall trace.

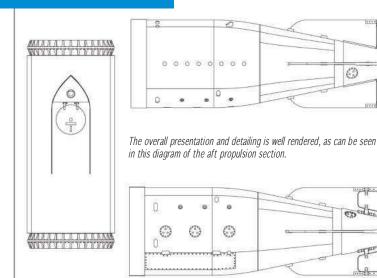
The core hull structure requires four sections to complete. Each comes in two symmetrical halves. These make up the streamlined warhead nose, pilot compartment, propulsion section and aft cone with its controls surfaces and



BELOW: Mikro Mir's evocative box top artwork features an artist's impression of how the Kaiten 2 might have looked on deployment. BELOW: On opening the box, the minimalist components suggest a quick and easy assembly; don't be fooled by this, as it's likely you'll find the build more involved than initially envisaged.



Static suicide sub





0

ABOVE: An initial check of the sprues and components confirms this will be a 'big' model, and that some preparation work before you start assembly will be required.

BELOW: The sprue attachment points are relatively heavy, and there's a noticeable degree of light flash and mould seam present, but nothing too difficult to correct.

notches on two lip surfaces since they were missing. You will also need to make your own alignment notches on two of the lip surfaces, as Mikro Mir has failed to do so.

All of this preparation and adjustment work, however, is quite easily accomplished, albeit there is some cleaning-up and negotiating of parts to ensure they sit correctly.

When these modules are finally merged together, they create a truly impressive looking structure that successfully captures the Kaiten 2's fine flowing lines and ominous appearance. There's a very pleasing degree of integrally moulded surface detail to the lightly recessed hull section, inspection panels and vent. The only significant protrusions are the raised (etched) weather shield over the entry hatch amidships and the periscope, which can be modelled either lowered and stowed away or full extended. Given the otherwise flush appearance, I decided to model this in the raised position for a bit of added interest.

A neat detail worthy of mention is the hatch hidden away underneath the crew compartment. On the 1:1 prototype, this facilitated the pilot's entrance via a watertight tube from the mother submarine while both vessels were submerged, a necessity initially devised for, and carried over from, the operational Type 1s.

Aft can be found the propulsion and controls, with two contra-rotating propellers and four cruciform planes, featuring separate rudders and elevators. All are protected by the extended guards attached to the hull. Lining-up and accurately registering these essential features will require particularly delicate handling.

Finish

Befitting of the Kaiten 2's envisaged stealthy, clandestine and macabre terminal role, the overall matt black finish (the only point of colour being the pair of bronze (brass) contrarotating propellers aft) can be achieved by applying Tamiya's acrylic TS-6 (spray), XF-10 (jar) matt-black and X-33 bronze (jar).

> A layout of the principal hull sections give notice of the bulk, proportions and dimensions, indicating just how impressive the finished model will be.

propulsion. Notches in two prominent separate circular section union rings fore and aft of the crew module set the correct alignment of these principal hull sections.

The union of these sections is far from straightforward. You will have to pare away or reduce various mating surfaces before a satisfactory fit can be arrived at, with the need to create two sets of alignment







LCM6

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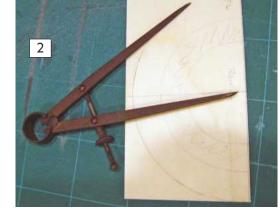
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Harry Hitchenes supplies build instructions for this month's free plan: a pretty little yacht which, although inspired by a toy, sails like a dream...

etween Christmas and New Year 2018, my thoughts were wandering to building something new, although I had yet to decide what. At the same time, however, my wife's mind was working in another direction. She reminded me that I had promised to redecorate the sitting room and staircase. So, February and March were set aside for this project. We had a wonderful time stripping wallpaper, painting, re-papering and choosing new carpet, so my wife tells me! During all this upheaval I had to pack several things away in the loft. While I was up there, though, I began looking through the boxes of my (now grown up) children's old toys still stored there. Amongst all the cars, soldiers and Star Wars figures I spotted two small yachts. One tiny little one my son had started with and another slightly bigger one that he used to sail in races against his sister. (Her yacht now sits proudly on a special stand



in the bathroom of her own house.) The bigger one proved just the inspiration I needed (see **Photo 1**) as it occurred to me that if I scaled her up approximately one and a half times, she could make a very pretty, handy-sized, radiocontrolled model. And, indeed, she did! So much so, I thought I would share her with you.

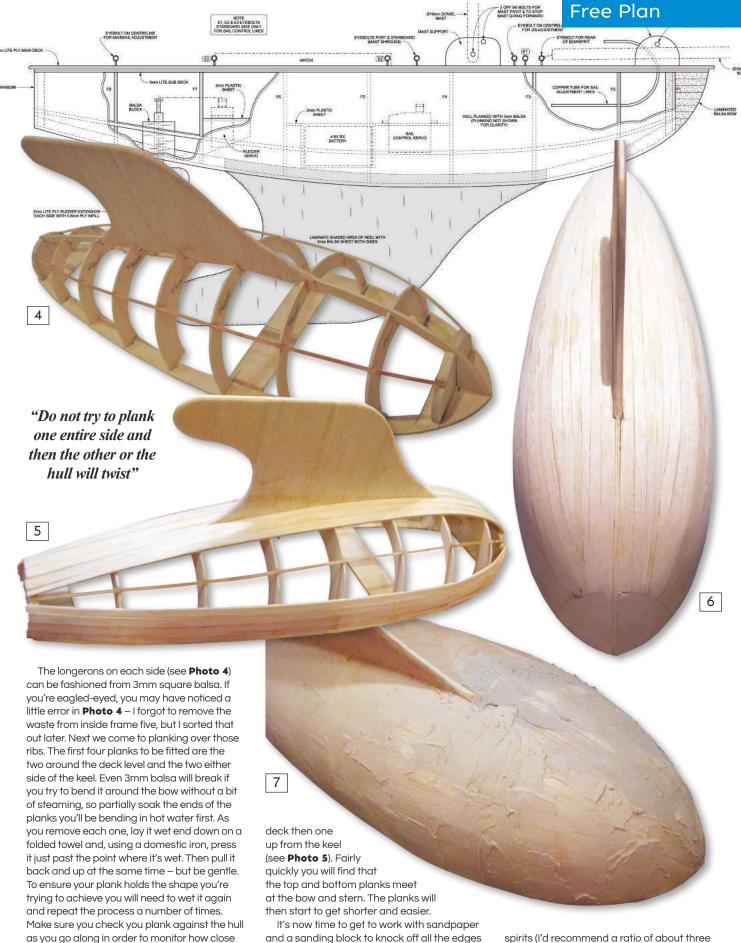
Oh, and in case you're wondering why I've called her *Palex 6*, my son's first names are Paul Alexander, so he now uses the name Palex for any model boat he builds that doesn't already have a specific name. As this model was based on one of his toys, I thought it only fair to carry on the tradition.

OK, let's get started...

When marking out the frames on wood you'll find it's a lot easier if you use a compass because while measuring up the existing yacht I discovered that all sections of her hull were semi-circular. As you will see from the plan, I simply added 1 cm at the top (at the point where there is no curvature and the sides simply go straight up, parallel to each other) to increase the draft a little bit. So, working from two lines set 1 cm apart, use said compass and a soft pencil to draw your half circles at the relevant diameter. I suggest then going over them with a pair of dividers to scratch lines in the wood so that your knife has less chance of slipping while you're cutting out (see **Photo 2**).

The false deck, keel and formers should all be cut from 3mm lite ply. Laminate the keel vertically (both sides) with 3mm balsa, rounding off the edges before adding formers to it. Plank the hull with 3mm balsa and sand the frames back by 3mm on both sides to fit. As a visual reference, your basic components should look like those shown in **Photo 3**. Then glue all the frames to the false deck and keel.





You can then glue the planks on with waterproof PVA and pin them to the formers. Think symmetry and always add one plank at a time to each side – do not try to plank one entire side and then the other or the hull will twist. I usually do one plank down from the

you are getting to the bend/curve required.

It's now time to get to work with sandpaper and a sanding block to knock off all the edges and flats. You will soon find you have what is starting to look like a rounded hull (**Photo 6**).

This done, mix your filler (I used a tin of Isopon P.38) and spread it liberally all over the hull. Once dry, coat the inside the hull with thinned down epoxy. This can be easily made up by mixing your epoxy with methylated

spirits (I'd recommend a ratio of about three parts spirits to one-part mixed epoxy). Poured this mixture in between each frame and then rock your hull so that the mixture covers the whole inside. Within a few minutes this will start to harden, but if you're the impatient type you can speed the process up with a hair dryer (**Photo 7**).





washer over each of the screw eyes; screw them in and soldering each individual screw eye and washer together. Once you've done this, work off any excess solder with a wire brush and paint to finish (See **Photo 14**).

The next soldering job involves the tube that carries the sail adjustment sheets through the deck. Take a piece of 4mm outside diameter copper tube, about 22cms long, and bend it into a 'U' shape at one end. In order to do this, heat the tube (at 5-6cm from one end) until it is visibly red hot, then cool it under the cold tap. You should then

be able to slowly and carefully bend it around an old tin (or something similar). Bear in mind, this technique requires patience and practice. If it looks like your tube is going to flatten, reheat and cool again. This done, solder a washer onto the tube at the apex of the

washer onto the tube at the apex of the bend. This tube needs to be passed through the deck with the longer end underneath (see **Photo 15**).



Cut the various lengths of dowel as per the plan. Taper the top 8cms of the mast and drill a hole, near to the base, through it; be careful, though, or the end of the mast may split — mine did! I managed to fix this by wrapping thread around the mast either side of the tube and covering with epoxy (see **Photo 16**). Next, insert a piece of copper tube big enough to take the M4 bolt that will be the pivot for the mast; this needs to be located close to the end so that the mast will fold. Then, round off the bottom end of the mast.

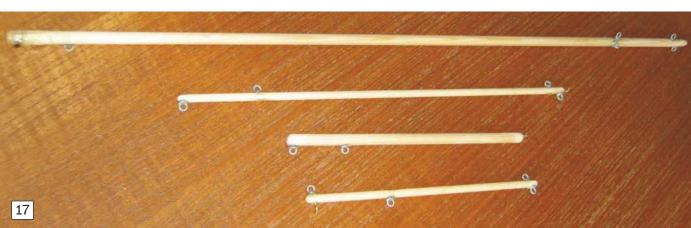
Drill 1mm pilot holes where all the eyebolts are going to go; these, together with the plain screw eyes, will form the hinges on the mast and bowsprit. Don't forget to leave two of these open so that you can fit the whole lot together later. Also, I recommend placing a small drop of epoxy resin on each of the holes before screwing the eyebolts, etc, into place (see **Photo 17**).













On my build these were made from 1mm brass sheet (see **Photo 13**), but if you're not keen on bending brass sheet they can made using plywood and then stuck together with epoxy for strength.

Eyebolts

The screw eyes I used, and you will also need, had a 7mm outside diameter and were 16mm long. You'll also need some M3 washers and another piece of hard wood. Drill a couple of rows of 1mm holes into the wood; slip a





Servo holders

When it comes to servo holders, you'll need one for the rudder servo, one for the sail control servo, plus a box for your receiver pack. Note the power pack lies on the keel (see **Photo 18**). Install the servos in the hull and make a beam to fit across the hull. This will hold the 'U' shaped piece of brass rod you've created to pass the sheets through from the yards to the servo. It will also provide somewhere to stick the radio control power switch. (see **Photo 19**).

The deck

Lay the hull upside down on a piece of 3mm lite ply. The deck should overhang the hull by about 1cm all the way around, as per the







prototype. Cut this out and sandpaper the edge to a nice rounded shape. A hatch will be needed to give you access to the battery and radio switch. This is 29cm from the bow, 16cm long and 7.5cm wide. Mark out where the mast and bowsprit holders will be fitted and draw boxes around them so that they can be made to look as if they've been planked around. Then draw your plank lines on the deck (I used a biro). After lining the deck, colour it with one light coat of pine stain, lightly sand and give three coats of satin finish outdoor clear varnish.

Once you have all the internal bits fitted solidly and working correctly, it's time to fit the deck. Place the deck face down on the bench, apply glue to the false deck and carefully lower the inverted boat on top. Make sure that you have a nice even overhang all around and then leave to dry.

The sails

My wife is a dab hand with fabric and sewing machines and she knew exactly what type of cloth was required for this project: polycotton, as this will stand being soaked and dried without shrinking or stretching far better than cotton will. First, though, make two triangular paper templates for the mainsail and jib. When cutting out your fabric, add 1/4 inch all round your template, turn this excess fabric over twice so that your cut edge is hidden and sew hems to finish. Another option, of course, is to use Nylon and simply cut the sails to size using a pointed hot soldering iron. This will seal the edges.

The sails now need the 3mm eyelets fitted. I purchased a kit from the internet comprising of a 3mm hole punch, Eyelet forming tool and 100 eyelets with washers. Using your cutter make a 3mm diameter hole in the sail. Enter the eyelet

through the hole and fit the washer to the other side (**Photo 20**). Then use the eyelet forming tool (**Photo 21**) and a small hammer to turn over the edges of the eyelet and neaten it up. Making the 3mm hole in the sail is best done by laying it on the material then slowly spinning it by hand to cut a neat hole.

The easiest way to attach the sails is with loops of cord. The mast is raised using 4mm bolts for the pivot, mast stop and bowsprit holder. Adding the standing rigging to hold the mast and bowsprit in place simply requires some thick cord, with small adjustable bowsies. For two sail control lines you will need a nylon braided line, of the type used by fishermen; mine is 55lb strain, 0.4mm thick and there was 180 yards on the reel. Cut two lengths about a yard long, then pass these through the sail sheets tube until you can see them under the deck. Using a wire hook, pull them through to where you can get a hold of them. Fire up the radio and set the sail control servo so that it is close to the 'U' shaped rod. This is the position when the sails are fully out. Pass them through the 'U' shaped brass rod and tie to the control arm on the servo. Take one of the lines and pass it through the relevant deck eyebolts and the bowsprit eyebolt at the back of the bowsprit. Then pass it through a small plastic bowsie these plastic bowsies, at about 2cms long, are available from various suppliers (see Photo 22). Next, pass the line through the front bowsprit evebalt back to the bowsie and tie off (see Photo 23) Do the same with the other line, but this time to the mainsail.

Make up the top of the hatch from 3mm lite ply, with plank markings to match the deck. The receiver can now be placed inside. This should be held inside the hull with self-adhesive Velcro to that it can be easily removed if you need it for another model. It is





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Good luck, everyone!

ABOVE: If you're headed out to go sailing and the weather looks a bit iffy, be sure to grab your jacket from this super little coat hook. ABOVE RIGHT: If you're looking for some atmospheric lighting, how about this charming fisherman's navigation lamp?

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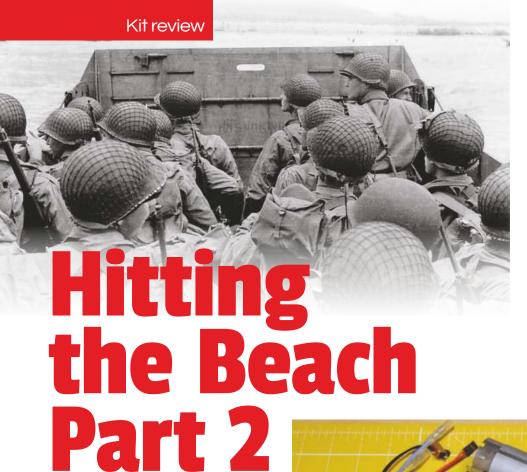
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Nick Brown continues his Mountfleet Models' 'stand-off' scale Landing Craft LCM(6) mission...

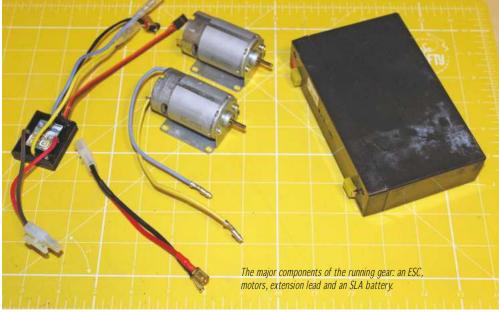
aving covered the basic construction of Mountfleet Models' kit in Part 1, this month we will be concentrating the electrics, the radio equipment used to control the landing craft and, of course, the main working feature – the ramp.

Power control

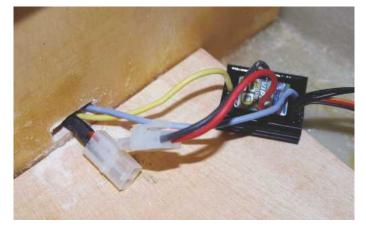
Real vessels, including the full-size versions of landing craft, have individual throttle control for each engine, one of the features replicated in this model. I've sailed model landing craft in the past and having individual control is a big bonus; aside from accuracy, it's massive fun when manoeuvring around

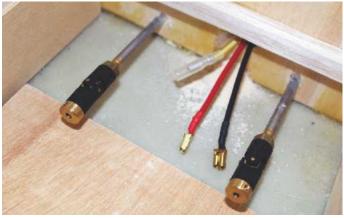
a lake. I've used individual throttle control in most of my multi-prop models and there are many ways of achieving this, including mixer units. This set-up will be a simple two motor and two speed controller (ESC) layout controlled by two sticks on the transmitter (Tx). The radio equipment I will be using will be my trusty Robbe F14 Twin stick. This is an older style of Tx and operates the more conventional 40MHz crystals instead of the 2.4GHz sets that are easily available today.

As mentioned in Part 1, I was advised to use either two 540 or 555 electric motors. Ideal for a model of this type, these motors are more than powerful enough to propel the LCM but yet not so excessively forceful they'll make it start to 'plane'! Also, the motors for this landing craft have to fit beneath the tank well deck, hence the size recommended. I also purchased some motor mounts designed



"Full-size versions of landing craft have individual throttle control for each engine, one of the features replicated in this model. I've sailed model landing craft in the past and having individual control is a big bonus"





Left - one side of the main bulkhead with the ESC leads being carefully fed through, and right - the other side, showing the leads that will eventually connect to both motors, plus one of the SLA batteries.



LEFT: The two servos used in this project, sourced from Component Shop. On the left is the standard servo for the rudders, while on the one on the right is a servo sail winch, recognisable by the large drum.

BELOW: When conducting ballast trials at lakeside, remember to take pictures of the layout to ensure you put the correct amount of ballast back in the hull and in the right places.

"There are two reasons –
other than that they only cost
a couple of pounds for a pair –
for choosing these..."

to fit these types of motors, which are available from most model boat shops/online outlets. A plus point for these mounts is that they can be easily adjusted, to allow for any slight misalignments, by twisting the base via the oval screw holes and bending the upright to line up the motor shaft to the propshaft.

To control the motors, I went to MTroniks and bought a pair of Viper 20amp ESCs. I recommend buying the purpose made extension wire with built-in bullet connections. There are two reasons – other than that they only cost a couple of pounds for a pair - for choosing these. Firstly, the bullet connections will fit directly into the connections on the ESCs and you can directly solder them to the motor (allowing the motors to be removed quite easily). Secondly, by using the purposemade connections (most modellers will remove the bullet connectors and use their own) you will not invalidate your warranty on the ESCs - as it clearly states on the instructions that this is so.

The primary source of power will be two 6v 7.5amp/hr sealed lead acid batteries. I used these instead of the latest forms of LiPo or NiMH types as this is going to be quite a heavy model on completion and the weight of the sealed lead acids will provide extra ballast as well as battery power. I also added some

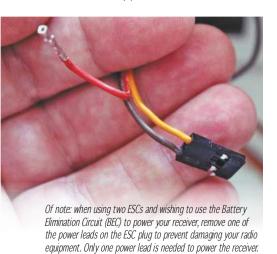


Tamiya style connectors to the ESCs, which lead to the batteries via a 20amp car fuse. The fuse is always put between the battery and the ESC on the power line and will protect your ESC and motor from any power surge.

The final components of the radio set-up are the two servos: one for rudder control and one to lower and raise the ramp. The rudder servo had to be mounted on two lengths of wood spanning the width of the hull, allowing it to sit level with the rudder tiller arms but still be easily accessible should it fail.

I like to test fit all the electrics and radio equipment to be fitted in the hull before committing to anything permanent. This ensures all wires are routed correctly and all connections will meet. It also means that everything looks tidy and professional.

Surprisingly, considering the weight of the two batteries, I realised this model would still require ballasting. This, too, is always better to tackle at an early stage so that you can be sure it won't interfere with the electrics or any mechanical movement from the motor or servo arms. I take photographs once fully ballasted for future reference, as I usually ballast my models at the lake side. I try to ballast to the light-load waterline, as any weighty cargo to be added (in this case, hopefully, a functional Sherman tank) is going to prove problematic if the model is already sitting at the deep-load waterline. The ballast for this model was required to sit forward of the battery and below the tank deck. Access to this area would, therefore, be necessary, so I filed the deck pieces to fit slightly loose;





ABOVE: The model sitting on the water for the first time. Nick undertook the ballasting in his club's harbour/jetty, thereby ensuring there was no chance of it drifting away. BELOW: The template guide supplied by Mountfleet Models: take care when using the diagram that you get the wooden ribs in the correct places.

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MOUNTFLEET MODELS
LCM 6 ramp
The basic pieces that will make up the structure of the ram
including the mand rise racin humper and triangle.

this, however, meant that they were prone to lifting up at the corners. I therefore took an approach I've successfully used in the past for model with large flat deck areas: I fitted magnets to each corner and one to the middle of the leading and trailing edges to keep the deck in place but, at the same time, allow it to be fully removable.

The ramp

The ramp is probably the most prominent feature of the landing craft and most spectators will expect it to be functional. Here it's made from the 1/8in lite ply wood

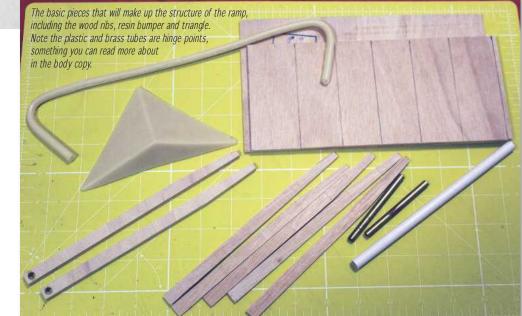
BELOW: The magnets used to hold the two tank well deck pieces in place. These prevent the deck from lifting up, as they are incredibly strong and compact.

There are over 100 magnets in this picture!

sheets and several other bits and pieces provided in the kit. Mountfleet Models, once again, provides a template guide from which to create all the parts. The ribs are formed from two different lengths; the longest items create the hinge point and are doubled up in thickness to provide added strength in this potentially weak area.

I cut out the front and back sheets (note they are different heights, with the shortest located on the inside of the ramp) and super-glued the ribs to the outer sheet, using the template to space them evenly and made sure the outer ribs extended the extra 10mm below the sheet. While there is no mention of this in the instruction booklet, I added a thin strip of lite ply to the tops of the ribs to reinforce the area. This also gave me something more substantial to glue the resin ramp bumper to. The shorter inner sheet was glued and clamped to the ribs, creating a rigid wooden sandwich capable of supporting an R/C 1:16 scale Sherman tank. The resin triangle that sits on the ramp's external surface effectively creates a slightly pointed bow; this, a residual design element from the LCVP vessels, which suffered from weak bows, affords the area more durability. I filed it down to remove the excess moulding lug and super-glued it into place, checking my references to make sure it sat in the correct position.

The 'grip poles', as I am going to call them, are lengths of 1/16in diameter dowel. On the real LCMs, these allowed the pilot to be able to look forward even while a tank was using the ramp. I used photographs of the real thing to work out the spacing of these dowels and, as a result, they are approximately 10mm apart on my model.



"I am going to describe these mods in case you decide to incorporate them into your own build..."

The hinge point, on the other hand, took a while to get my head around; once I realised how it worked, however, it quickly became apparent it's a really simple design. That said, I did modify this on my model, but only because initially the ramp wouldn't work. I am going to describe these mods in case you decide to incorporate them into your own build. Firstly, I reinforced the hinge points on the ramp as these broke quite easily during careful transit between my home and my barrack block. I used some thin aluminium sheet (lithoplate) to bolster the sides. A piece of excess lite ply served to pack the plastic tube hinge out away from the hull; this allowed the ramp to sit flush against the bow area and, of course, move up and down without interference. I applied some seriously strong superglue on these parts, aware of the stress and impact this area would have to endure.



I put the ramp and its components aside at this point, as I needed to get the deck finished off. The real deck was made from steel but featured areas impregnated with grip so that the crew could safely walk around without slipping. I had planned to use sections of textured plastic card laid out in the same pattern you'd see on a full size LCM but, due to lockdown, wasn't able get any. My trusty 'spares' drawer, however, just happened to contain the next best thing: some old N-gauge roof tile-textured plastic card. This came in A4 sized sheets, which I cut into 8.5 inch long sections to fit to the decks. I have to say that I'm really pleased with how realistic this actually looks when viewing the model at distance.

Ramp control

Unfortunately, when it comes to making the ramp controllable, the instruction booklet doesn't go into detail. So, working with the supplied template parts and fittings, I fashioned the wire guides for the ramp myself. While the template drawings state that four upright parts need to be constructed, in reality I only used two (one each side). In the fittings pack four resin rollers are supplied. These I drilled out so that a brass rod could be loosely pushed through them. Two rollers are featured on each side but only the upper ones are used to operate the ramp; the lower ones were fitted purely as decoration. I attached these to the tank well sides using the brass rod passed through them.

Having super-glued everything to the deck and the tank well sides, things were left overnight. So, while the forward wire guides



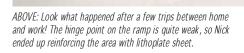
ABOVE: The ribs of the ramp structure: try to keep these items perpendicular to each other to ensure an aesthetically pleasing look to the finished ramp. BELOW: The basic structure of the ramp, complete with the resin bumper and triangle fitted to the wooden sheets.



ABOVE: As Nick explains in this article: the grip poles represented by the dowel length are spaced approximately 10mm apart, which he marked out on the ribs. RIGHT: A fully completed ramp view from the bow, a sight that troops on many enemy-held beaches would initially see before all hell broke loose!

were curing, I drilled a hole in the deck next to the conning deck through which I could feed the wire that would operate the ramp. I experimented with various different types of wire (including the nylon coated type) but for some reason it would distort after every use, so I eventually opted for black cord. I used cord instead of string, not only because it's much stronger but also because it's more flexible than wire. It will probably need replacing every couple of years but that's a small price to pay in order to

replay to operate the up and down function but after some discussion with those in the know (many thanks to Colin Miller!) I went for one of my modified Robbe F14 Twin Stick with a three way switch plugged into Channel



5 on the transmitter. A simple plug into the corresponding Channel 5 on the receiver and the servo sail winch would operate the ramp. For those of you not wishing to use







Kit review

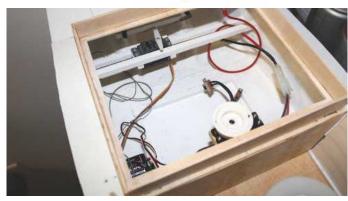
"This is a trial and error method and it took me several attempts to get it to perform exactly as it should do every time"







ABOVE: The ramp hinge point on the bow: a plastic tube packed forwards with a piece of excess lite ply allows smooth operation.





ABOVE: The completed electrics and radio equipment in the area below the conning deck. Keep this tidy by routing the cables around neatly, thereby ensuring that nothing snags on moving parts, such as the rudder tiller arms or motor couplings. BELOW: The servo sail winch in location: note it sits level with the main deck to allow the cord to be stress free.





BELOW: What everybody wants to see, the ramp fully lowered, hopefully ready to for troops, or even a tank (see next month's issue) to disembark...

the old 40MHz F14 equipment, a standard 2.4GHz radio set-up can be used in a similar way, as long as you have a two- or threeway switch on the transmitter and a spare corresponding channel on the receiver. I'm just old fashioned!

To set up the servo winch (and a standard servo is set up the same way), you turn the transmitter on first and then the in both directions, something which is quite important for a ramp. I discovered that the servo winch rotates two full turns of cord wrapped around the servo drum in its entirety will lower the ramp. It's order to ensure that the ramp lowers to approximately the waterline and raises me several attempts to get it to perform exactly as it should do every time.

power to the receiver. This will centralise the servo and will allow equal movement in each direction, which means the length important, therefore, to test the system in again to sit flush against the bow section. This is a trial and error method and it took

Better safe than sorry

On a final note. I will mention that the servo sail winch was positioned in line with the cord entering the hull to ensure that

the cord was not under stress and fed smoothly on to the drum. The servo was attached to the main bulkhead and I used left over pieces of 1/4in balsa to reinforce the location points. I didn't want the first impact with the 'beach' to shear my servo sail winch off!

Next month...

Join me again in the November issue when I'll be sharing my experiences of the final detailing and painting of this model, and the results of my sea trials!

BELOW: Nick's trusty Robbe F14 Navy 'Twin Stick' transmitter. It's different to standard transmitters in that it has the two throttle sticks on ratchets on the left side (similar to real vessels), while the right stick is reserved for rudder function. The three-way switch for ramp operation can be seen above the right stick.















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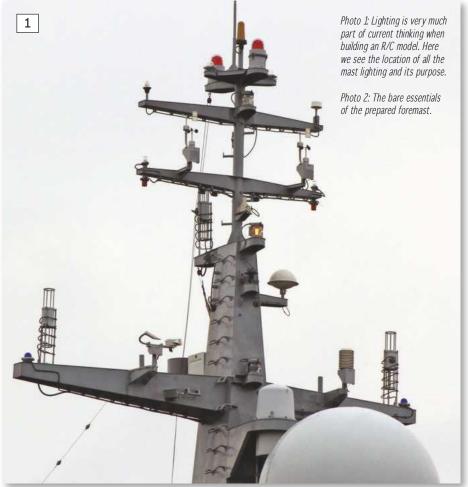












including the main features of the foremast. As a modeller viewing the ship's mast in preparation for adding the various fittings, the navigation lights (especially those at the head of the mast, on various small platforms emanating from the front and rear of the mast and on the extremities of the yards) are immediately apparent. Add to that the various broadband di-pols arrays (contained within circular cages on the extremities of the upper yard and to the head of the mast) and the anemometers (fitted on the small yards) and it becomes evident that some of the low radar cross section properties are likely to be compromised. A mast populated with such fittings (see Photo 1), however, is, from a modelling perspective, of far more interest than a bland tower.

Installing the fittings on the foremast

The construction of the foremast was shown in an earlier part of this series but to refresh the memory let's just recap on the bare essentials. The mast is constructed entirely from 1mm styrene sheet and the upper pole from 2mm styrene rod (see **Photo 2**). The object is to populate the mast with the fittings as indicated on the drawing and in the various pictures.

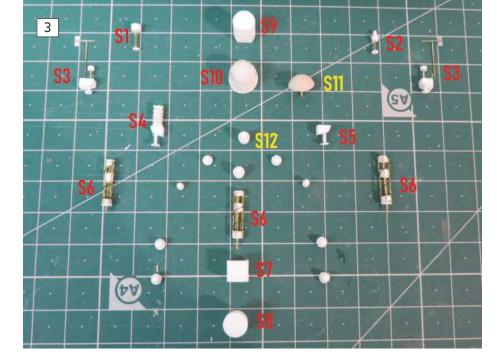
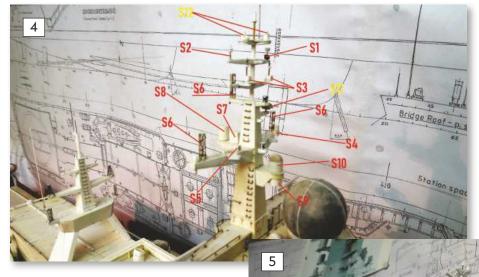


Photo 3: Mast fittings are crucial, and never more so than when modelling the Soobrazitelnyy. But what do they all do? And where do they need to be fitted?

Sensor Fittings in Red	Purpose if known
S1	HF communications pod
\$2	HF communications pod
S3	Anemometer
S4	Electronic Support measures (ESM)
S 5	Electronic Support measures (ESM)
S6	Broadband di-pole
S7	Additional support for S8
S8	Data link
S9	Additional support for S10
S10	NATO code 'Fig Jar' communications array Non sensor fittings yellow
S11	TV aerial
S12	Masthead obstruction lights (red)

Photo 4: Each of the fittings on Soobrazitelnyy's foremast has a specific location (see text).



Each of the fittings for the foremast are laid out and indicated thus (see **Photo 3**):

Each of the above fittings are then located on the mast as shown in **Photo 4**.

Although none of the fittings associated with the mast are in any way difficult to form, positioning is of major importance, particularly when it comes to the lighting. As many modellers are now wanting to include working lights, whether these be for the mast, for navigation or attached to deck housing, knowing where these are all located becomes

"Although none of the fittings associated with the mast are in any way difficult to form, positioning is of major importance"

essential. When building the OSA 11, the mast head was fully fitted with all the necessary working lights. For this project, however, the lights will be represented but they will not be working features.

A trick I've learnt is to pre-locate each and every part prior to any paint being applied; this will allow you to relocate or even replace parts/fittings that are not quite up to the mark with the minimum of fuss. **Photo 5** illustrates the foremast located to its position abaft of the tower structure, with all the fittings thus far covered in this series in position. None of the fittings (with the exception of the bridge window surrounds and wipers) are actually fixed, only pinned at this stage.

The ship's boats

Project 21670

Soobrazitelnyy supports two boats: an RHIB and an inshore crew boat. We're going to take a look at the latter, a semi-covered hard chine cruiser type power boat developed by Aqualine as Project 21670, first. In reality, this measures up at 6m 450mm in length and 2m 550mm in beam. Photos of these boats taken aboard any of the Sterigushinyy class are few, but the paint scheme (a royal blue hull with white upper works) shown adopted in **Photo 6** is probably the one that would have been applied to the boats supplied commercially. More recent pictures show



Photo 6: The colourful inshore crew boat.

Photo 5: The stark difference between a basis and a populated foremast.





Photo 8: All the stringers from the chine to the gunwale are fixed into place using Evergreen box section.

Photo 9 : Skinning (as the process is termed) the underside and sides of the hull

Photo 10: A model of two parts: the lower section having a sub deck on the upper section will rest.

the same method of construction as would be used to scratch build a working model. Firstly, each of the frames (two thirds of which are doublers) need to be cut from .50mm styrene sheet and attached to a keel profile. This ensures the keel will stay

stringers (see Photo 7). The next task is to add the gunwale stringer, using an Evergreen 1.5mm box section strip, and the flat base within the after part of the hull, which will form the well (see Photo 8). Skinning (a word used to define the covering of the outer part of a boat's hull) is the next phase and will be a familiar task to many who have scratch built their hard chine models using this method. The underside should be tackled first, followed by the port and starboard sides (see Photo 9).

ridged while you're fixing the frames and

Construction/viewing

The drawing shown here would be

comprehensive enough for anyone wishing to build a larger scale working model of the Crew boat to work from. Yet I digress, the scale here is 1:72. On examining both the

drawing and the image of the full size vessel, it's obvious the way to progress is to adopt

the drawings

As the model is to be painted in its distinctive blue and white livery, for convenience it is divided into the upper surface hull (which will be finished in white) and the lower surface (which will be finished in blue). This method makes painting such a small model very straightforward.

As can be identified, in the upper section there are window frames (to port, starboard and front) that will need to be glazed, while the well deck surround has cutaways for steps leading down into the well (see Photo 10).



10

"Skinning (a word used to define the covering of the outer part of a boat's hull) is the next phase..."

its parent ship, i.e. Northern Fleet Grey. For my model of Soobrazitelnyy, however, I've and white scheme, despite the fact that I doubt very much this would've been used I do, however, recall that up until the 1980s some Royal Navy warships, such as HMS white livery; red and white was also used.

12

As shown in **Photo 11** there is a sub deck (lower half) and an upper deck surround (upper half); both upper and lower parts of the hull should be joined but not fixed and chine strakes added – these will need to be sanded right back as they are just visible on the full-size hull (see **Photo 12**).

Glazing is a simple operation. No adhesive is required as the shaped acetate sheet is formed to fit into the opening and held in place by the outer surround. The same applies

Photo 11: The upper half of the model slots into and sits on top of the lower half.

Photo 12: The upper and lower halves come together as one, but here they are yet to be permanently fixed.

to the forward, port and starboard screens.

The final stages of fitting out involves parts as shown in **Photo 13**

Next we come to the fixing of the safety rail around the deck edge. Due to the angles of the upright parts of the rail, especially the bow piece, it would be impossible to either fit or remove a soldered rail. Here, therefore, the rail is fitted and fixed in place using cyanoacrylate. You will find having a removable cab and deck makes painting the handrails less problematic (see **Photo 14**).

Illustrated is the well deck of my almost completed Crew boat (see **Photo 15**). The next step will be painting, followed by the

fixing of more internal detail (work that can only be done once the painting has been completed).

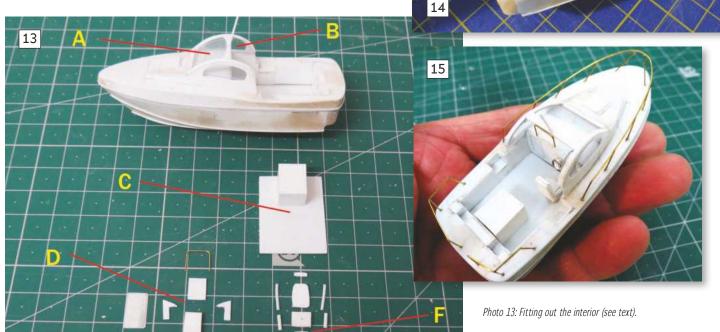
The power unit is a
Z-drive configuration, with
no rudder, and, like the
one fitted to the RHIB, is
attached to the transom.

Part

- A Forward cab glazing
- **B** Side cab glazing
- C Inner well floor and engine box cover
- **D** Dash cover
- E Steering wheel
- **F** Seat
- **G** Seat base and support

Material

- 50 acetate sheet
- .50 acetate sheet
- .50 styrene sheet
- .50 styrene sheet.
- 5mm od alloy tube /.25 litho strip.
- .50 / 1mm styrene
- .50 styrene / 1mm brass rod.



G

Photo 14: All the handrails now fixed into place .

Photo 15: One almost completed inshore crew boat.

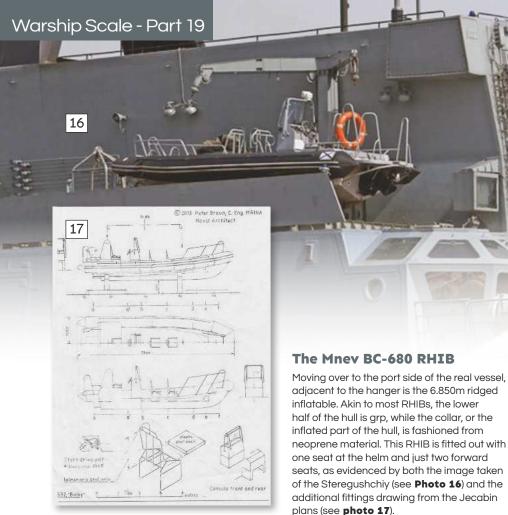
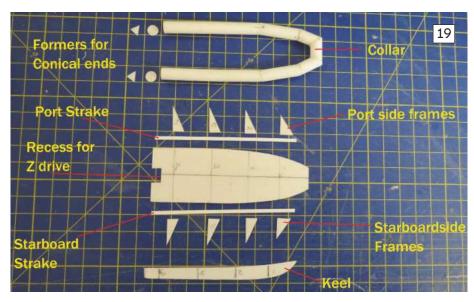


Photo 16: The RHIB shown here as fitted to Steregushchiy is almost the same as that on Soobrazitelnyy.

Photo 17: Serving as a fantastic RHIB reference point, this is one of a number of immensely helpful additional drawings available with the GA and lines plan.



The initial construction involves just three

parts: the keel, the deck and the collar, from

The tube is cut into seven sections, which is

sheer of the collar (see Photo 18).

7.1mm diameter Evergreen 229 styrene tube.

shaped at the joints to allow for the curve and

Photo 19: Prepping the more essential parts that will form the shape of the RHIB. Photo 20: Setting the hull frames to the underside of the deck and onto the keel .



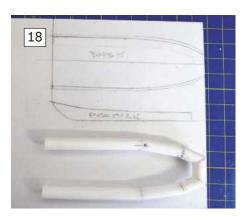


Photo 18: The basic components needed to commence the build of the RHIB.

Moving on, and referencing **Photo 19**, the collar at the tail ends has a conical section created from a styrene former and then shaped with fillers. Each of the frames that will fit to the underside of the deck are cut and laid out along with the deck edge strakes. A section is also cut in the after end of the deck; this will eventually house the Z drive. Lastly, the positioning of the frames needs to be marked on the keel.

All the parts thus far mentioned can be seen assembled in **Photo 20**.

The underside skin of .50mm styrene can be cut to shape and fixed to the frames. This is followed by preparing most of the remaining fittings, as shown in **Photo 21** and referenced below.

Surprisingly, there are only three seats, all of which need to be folded to shape from .40mm brass wire and fitted into place (see **Photo 22**).

At the end of each collar/tube there is a conical insert. As previously mentioned, this is formed from a simple profile consisting of a 7.1mm diameter disc made from .50mm styrene sheet, into which is fitted a 15mm x 2mm length of styrene rod. This needs to be covered in filler and sanded to a cone shape (see **photo 23**).

Attention now shifts to fixing the underside set of four rails (see **Photo 24**). Once the control console has been assembled, use a 1mm acetate sheet for the windscreen; this should be slotted into a frame made up from .40mm brass wire. You will note that, once again, no adhesive is required for fixing the glazing (see **Photo 25**).

One of the final fittings is the Z drive power unit. Here a nickel-silver-etched propeller of suitable scale can be used with a .33 shaft affixed. This should be inserted into a length of brass tube from the Micro Bore range, available from Albion Alloys. To give you an idea of size, this has been photographed next to a Humbrol-size tinlet of paint (see **photo 26**)

Our final two pictures for this month show the fully assembled RHIB being prepped for painting. Worth pointing out again is that the side brass handrails, due to their angle of fixture, are not soldered but fixed in place with cyanoacrylate. The seating frames and transom handrails are, however, soldered (see **Photos 27-28**).

Any questions?

If you have any queries regarding the build methods, tools and techniques, materials, etc, mentioned in this series so far, or indeed any questions about the full-size vessel this

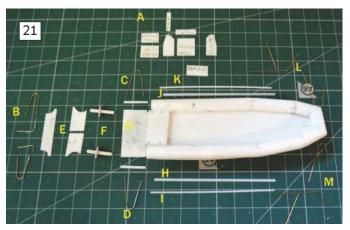




Photo 21: Identifying the follow-on fittings. Photo 22: Locating the forward two seats. Photo 23: Fixing the prepared conical ends.

Part

- A Cab & console
- **B** Transom handrails
- C Port after side handrail
- D Starboard after side handrail
- E Transom (shaped) three sections
- E Transom (snapea) milee secil
- F Formers for conical ends
- **G** Engine box cover
- H Starboard spray rail lower strake
- I Starboard spray rail underside of hull
- J Port spray rail lower strake
- K Port spray rain underside of hull
- **L** Port handrail forward
- M Starboard handrail forward

Material

- .50 Styrene
- .40mm brass wire
- .40mm Brass wire
- .40mm brass wire
- .50 styrene
- .50 Styrene / 1.5mm styrene rod
- .50 styrene

Evergreen 1.5 mm quarter round

Evergreen 247 1mm quarter round

Evergreen 1.5mm quarter round

Evergreen 247 1mm quarter round

.40mm brass wire

.40, brass wire.



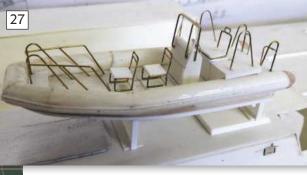


Photo 27: An almost fully prepared RHIB ready for painting.

Photo 28: When compared to the Royal Navy's Halmatic 24, this RHIB seems less refined.



Photo 24: Adding the spray strips and underside spray rail.

Photo 25: The control console, steering wheel, window frame and glazing .

Photo 26: The Z drive unit and etched propeller.



Points of reference for research purposes

- * Severnnaya Verf St Petersburg Russia .
- * Almaz Central Marine Design Bureau, Project 80382, Tiger official images
- * Photo Etch 4D modelshop.co.uk/Static/Workshop/Photoetching

Acknowledgments and thanks to...

- * Anthony Horabin for preparation of the etched fret.
- * Mark Findler for granting permission to publish his images of the Soobrazitelnyy
- * Kurt Grainer at Warships Underway, USA for his help and assistance
- * Peter Brown, former-Naval Architect at Vosper Thornycroft for his help and assistance

Sourcing of parts and materials

- * The GRP hull is available from Fleetscale at www.fleetscale.com
- * Litho plate, tubes rods, wire, etc, are available from Albion Alloys at http://www.albionhobbies.com/

particular model is based on, please do write to/email me care of the editor and I will do my level best to either address these in person or tackle the subjects in individually themed future articles.

Next month...

In the November issue, I will be talking you through pre-assembly of Soobrazitelnyy, applying that all important coat of primer and sharing details of her first on the water trial run.



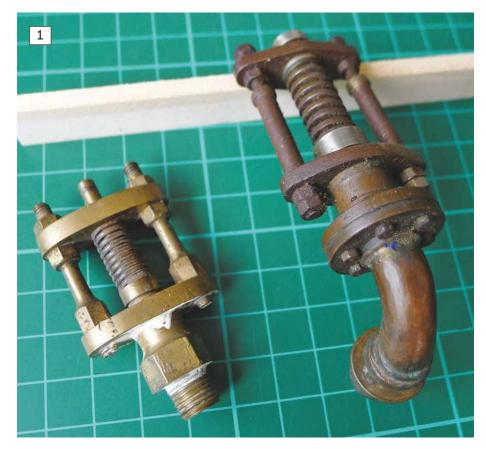
Richard Simpson provides a simple and easy to understand guide to safety values and their maintenance...

the first ever Boiler Room article I wrote, way back in January 2011, on the subject of safety valves. Now, there's sometimes the temptation to think that once a subject has been covered there should be no need to revisit it, but there are one or two topics of conversation that just seem to keep cropping up at the pondside and one of them is safety valves. Consequently, as not far off ten years has passed since the last time we looked at the issue, I think it is perhaps time we re-examined things.

The most frequent area of misunderstanding seems to be the exact purpose of this unassuming but very important little piece of equipment. What doesn't help, of course, is the confusingly wide range of available devices, from the very large and old items (see **Photo 1**) to the much more compact modern items available today (see **Photo 2**). Not surprisingly, however, they all do the same job and, one way or another, in pretty much the same way.

The purpose of a safety value

The bottom line is a safety value is there to prevent us taking the boiler to an unsafe level of pressure, which basically means two main things: firstly, the boiler has to operate at the pressure to which we've set it at (this can, of course, be any pressure below the marked working pressure) and, secondly, but just as importantly, once operated, or opened, it has to be capable of preventing any further rise in pressure.



A couple of big old valves from boilers larger than we will likely see in our boats. Interestingly, both adjust by moving the top beam up or down and locking them in place with the side nuts.





ABOVE LEFT: A selection of modern values of different capacities. All incorporate a ball bearing seated on a machined surface in the body of the valve. The valve on the right is actually not adjustable, but all the others are, by rotating the top plate which the spring pushes against. The holes are actually the steam vents. ABOVE RIGHT: Many years ago, when Cheddar was in full production, this was the most common valve – simple, robust and easy to overhaul, with a new 'O' ring to give a fresh seal. The main downside is that in order to adjust it, it needs to be removed from the boiler.

In regards the first point, according to the latest regulations, a pressure gauge should be marked with a red line denoting the working pressure on its gauge face. This is so that, without having to look up or remember anything, we can instantly see whether the needle of the pressure gauge is above, bang on, or below the working pressure. It should never be above it. We can set the safety valve at any pressure at or below the working pressure to suit ourselves and the pressure required by the engine, but this only determines the pressure at which the valve opens.

The second point is that, when the valve opens, steam must be able to escape quickly enough to prevent any further rise in pressure. While this may seem obvious enough, I have, in the past, conducted a steam test on a manufactured plant that didn't achieve this. With the burner on at its maximum, the boiler reached working pressure and the safety valve lifted but, despite the valve being open, the pressure continued to rise. The current regulations state very clearly that a safety valve must prevent the pressure from rising above 10% over the working pressure. So, for instance, if your boiler has a working pressure of 50 psi then the safety valve must prevent the pressure from ever rising above 55 psi. In this case, the valve simply wasn't large enough to vent the steam at a rate that would prevent the burner from continuing to generate steam faster than it could it be released. I had to advise the owner that his options were to either fit a smaller burner or to fit a larger safety valve; he decided to go with the smaller burner.

That, very basically, sums up the two allimportant aspects of the safety valve's job.

How safety valves work

Not surprisingly, of course, there are many different types of safety valves found on model boat boilers and, while they may look like they are working in different ways "Now we know what a safety value is there for and how it does what it does, we need to know a little about how to look after it..."

as a result of their individual designs and arrangements, you will usually find they are doing the same job.

Almost all operate on a similar basic principle and that is to balance the steam pressure against a spring. In most cases the spring rate can be adjusted to raise or lower the amount of steam pressure required to push against the spring but there are one or two very simple safety valves fitted to small boilers which are not adjustable. On some valves, such as the old Cheddar type (see **Photo 3**), the spring is actually clearly visible when the valve is removed from the boiler. Nowadays, it's more likely the spring will be inside the valve body.

When the steam pressure has risen to the point at which it can overcome the pressure applied by the spring, it will push the valve open; this will drop the pressure in the boiler to below the spring pressure and the valve will automatically close again. Ideally, we want to see the valve popping open and closing nice and crisply, with no leakage, but unfortunately many valves seem to operate by a process of leaking, to a greater or lesser amount, which then brings on a number of related problems. The operation of the Cheddar valve is clearly evident in Photo 4, where the valve can be seen in the open position, held by the clamp. You will also note that the valve is sealed by an 'O' ring at the top, which sits on a seat in the body as opposed to the more normal modern practice of using a ball bearing on a ground seat. This enables an easier seal of the valve but the 'O' ring can erode after frequent use, whereas the ball bearing is far more resilient to wear but more demanding of clean sealing surfaces (see Photo 5).



ABOVE: The same valve compressed by a clamp to demonstrate how the valve lifts when the steam pressure overcomes the spring. The 'O' ring is lifted off the seat and the steam is free to escape.

Maintenance

Now we know what a safety value is there for and how it does what it does, we need to know a little about how to look after it. The safety valve test is arguably one of the most important parts of a steam test, but all this can only tell us is whether the valve is working or not at that time. What we also need to consider is what we should be doing throughout the rest of the year, and then how best to prepare our plant to ensure it passes the steam test easily.



The ball bearing type of valve, as shown on the far right in Photo 2. Adjustments could be made by shimming up the spring but this would be a time consuming process. Obviously, this was designed for a specific use and built to be both simple to work with and reliable.

If you've just bought a new safety valve, then you may feel entitled to assume everything inside is operating perfectly. There's no guarantee, however, that will be always the case. If you have an older valve then it may be time to inspect it internally, especially if it has started leaking during operation. Leakage is wasted steam and so wasted aas and may also eventually lead to erosion of the seat, so will need attention. Either way, the valve should be stripped down. This is simply a case of looking at the valve and establishing how it needs to be dismantled, the specifics of which can vary by quite a bit. More often than not, it will require slackening off whatever device is there to tighten the spring to the point where it comes off the thread and the valve falls apart. Check how much thread is visible before you do this so that you have a rough idea when reassembling the valve just how far it needs to be tightened down again. This will make any adjustment that bit easier when you come to test it. There are, however, some simple valves still used on small boilers nowadays that are not designed to be dismantled or adjusted (see Photo 6). Once these valves no longer operate correctly, they should be disposed of and replaced with a new item. These types of valve can be found on Mamod and Wilesco boilers.

Assuming you can dismantle your safety valve, all the parts should be cleaned up to remove any scale or sludge. Be very careful with the valve seat. The seat is frequently cut into the valve body and sealed by a ball bearing, but erosion and corrosion can damage either and cause leaks. You may be lucky and find they clean up perfectly or you may be able to get away with replacing the ball bearing with a new one of the correct diameter; refinishing the seat, however, is usually very difficult. If you're a machinist you could manufacture a grinding dolly, or you may get away with some light abrasive or polish on a spare ball bearing. Usually, though, it's really not worth the effort and a new valve will be the easiest way forward.





ABOVE LEFT: Still used today on such boilers as Mamod, Wilesco and Tony Green's boilers, these valves can almost be considered as disposable. The seat is an 'O' ring at the top, as found on the Cheddar type, but there is no means of adjusting the lifting pressure. ABOVE RIGHT: After a good clean up the ball bearing can be seen below this valve, held in place by the spring. A few drops of penetrating fluid will determine whether the seat is sealed effectively or not.

Either way, once reassembled the ball should sit perfectly on the seat and can be checked for a seal by leaving a penetrating fluid sat on top of the ball overnight (see **Photo 7**). The next day remove and clean up the penetrating fluid from the outside, then dismantle the valve again to see if any has passed the valve seat.

Once the valve has been cleaned up and replaced in the boiler, you'll need to set the lifting pressure. I am frequently asked if either compressed air or high-pressure water can be used to set the valve but, I'm afraid, the answer is very much, no! Both fluids have very different dynamic properties to steam and will act on the valve quite differently. If you set it to the correct pressure on air, then fit it to the boiler and test it on steam you will find that it operates at a slightly different pressure. You could use air or water to roughly find the correct setting, but you will still need to do the job on the boiler.

To set the lifting pressure, with the valve fitted to the boiler bring the pressure slowly up to the marked working pressure. If the pressure reaches working pressure and the valve has not lifted, shut off the boiler, vent it and slacken off the adjustment on the valve. Then try again. If, once more, the valve lifts too early, you need to shut the boiler off, vent it and then tighten up the adjustment to increase the spring pressure. Eventually you will find that the pressure will rise in the boiler and the valve will lift at the point you want it

to. If you're using a ball bearing type of valve it will be fairly easy to adjust with the valve in place, usually by rotating the spring backing with anything that locates in the vent holes (see **Photo 8**). The Cheddar type of valve is a little trickier as the valve has to be removed, the locknut backed off and the spring landing nut adjusted before relocking and replacing in the boiler.

Once you have achieved this, the next step is to leave the boiler alone for around five minutes at full flame. The valve will remain open, but it must vent off the excess steam at a rate that prevents the boiler pressure rising above 10% of the working pressure. If this functions correctly it should pass a steam test with no problem.

This, of course, all assumes that your pressure gauge is working correctly. If your plant has been sat on the shelf for a very long time and you're unsure about the accuracy of the pressure gauge, why not ask your tester if he'll check it against the calibrated pressure gauge for you.

Considering your options

Safety valves don't always receive the attention they deserve. They are well worth checking occasionally to ensure they do their job and you don't have to wait for the annual steam test to do so. Also, while a lot of manufactured boilers will come with a prefitted safety valve some may not, and you will need replacements in the future anyway, so it's worth considering your options.

As well as browsing the catalogues/listings of model boat suppliers it's also worthwhile looking at what model engineering suppliers have to offer, in particular those who specialise in model locomotives. I think of all the safety valves I have come across over the years the ones that stand out in terms of lifting and closing with a satisfying 'pop', and not leaking at any other time, were those purchased from Blackgates Engineering (www.blackgates.co.uk), designed primarily for locomotive use (see **Photo 9**).

By the way, following my previous article discussing threads (see Boiler Room 108, in the August 2020 issue), check out the quite different threads on the Cheddar valve, which is a 26 tpi thread (see **Photo 3**), and the Blackgates valve, which is a 40 tpi thread (see **Photo 9**). Both valves are from a three-inch diameter boiler, so of around the same capacity.



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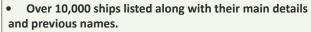
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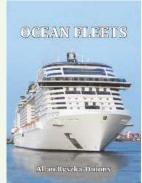
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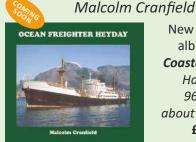
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Wilson's of Cleveland Hi-Drive electric motor.

of operation



Tests prove you get up to 2,000 hours'motor life (no load)

Motor miscellany

John Parker takes a fascinating look back at some of the electric motors that once powered our model boats...

ith this instalment I am presenting a roundup of electric motors that either didn't justify an article of their own in this series or for which I only now have an example to photograph. A fair amount of detective work was required at times to determine their place in the scheme of things, and this often involved tracing the manufacturers' activity through advertisements in old magazines. But it is



Brand, Model No.,	TWO VOLTS		SIX VOLTS		-	Number
Rated Voltage and Manufacturer	Current in amps.	R.P.M.	in amps.	R.P.M.	Weight in oz.	Armature Poles
DYNA-MITE—#MPDC-3 —1½ to 6 v. Model Pike Products Co.	.76	3,800	1.6	6,000	1.25	5
HI-DRIVE—#SB-301-C —1½ to 6 v. Specialty Battery Co.	.27	2,300	.55	4,900	2.2	3
IMP—#79—not rated International Models	1.7	4,200	5.0	8,500	2.8	3
IMP—#80A—not rated International Models	.95	4,700	2.3	8,500	5.7	3
K & O-#107-not rated K & O Models, Inc.	- 1.4*	1,800*	4.4*	3,400*	10.0	3
SUPER-DYNAMITE— 12 v.** Model Pike Products Co.	Section 2	_	.39	4,500	1.3	5
TINY ATOM—#3-100 —1½ v.*** Wilson's of Cleveland	. 1.1	3,400	3.2	7,100	1.8	5
WILSON'S-#5002- 3 to 6 v.**** Wilson's of Cleveland	.28	1,800	1.0	4,700	2.8	3

LEFT: Government surplus CM3 motor. ABOVE: The main motor types available in America in 1953 (from Flying Models magazine, April 1953 edition).

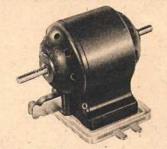


"High expectations were created by the company's advertising, which included the tagline 'Power Your Boat With Dyna-mite!'

here are photographs of most of the types mentioned (for K&O types, see the May 2015 issue of Model Boats).

The Hi-Drive was unusual in having an open-front resin housing into which the working parts were assembled and then retained by the screwed in bearing support. This rather clumsy motor was originally developed by the Ray-O-Vac battery company, but later became a product of Wilson's of Cleveland. The latter's Tiny Atom motor was a miniature 5-pole motor available separately or as the rather neat 'Variable Speed Power Applicator' set, pictured with modular gearbox. Model Pike's Dyna-mite and Super Dynamite were both of a similar size to the Tiny Atom, the different designations referring to 1.5 – 6-volt and 12-volt versions of the basic 5-pole motor design. High expectations were created by the company's advertising, which included the tagline 'Power Your Boat With Dyna-mite!'

POWER YOUR BOAT WITH DYNA-MITE!



For dependability and low operating cost, use Model Pike's 1½ to 6 volt "Dyna-Mite" motor in your cabin cruiser. American-made and built to withstand rugged use, it has a permanent Alnico V magnet, with brass bearings and brushes. Size is 1" x 1" x 1¼" — small enough to fit in all model boats. Easy to install and hook up, it can be used to power all types of equipment in addition to model boats — radio-control devices, scale autos, etc.

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MODEL PIKE PRODUCTS CO. 100 FIFTH AVE. NEW YORK 11, N. Y. for 24 or 28 volts, and usually had wound fields with internal connections, making them non-reversible. Standing as representative of this type of motor is what was known as the CM3 type, which originally powered rotating beacons and was available in a 12-volt version. A nine-pole, series wound motor, the CM3, was roughly 60mm long by 40mm by 50mm and weighed a hefty 310 grams.

The early 1950s' American scene

The American modeller had a choice of American-made and imported Japanese motors in the 1950s, though none were specifically designed for model boat propulsion until Pittman brought out its superb Panther in 1956 (For the full story, see the April 2016 issue). The main choices were summarised by a chart that appeared in the April 1953 issue of Flying Models magazine. Included

Russian motors

Very little is known about Russian-made model motors. I have previously made reference to a Russian version of the English Elmic Thrust-pak (see the April 2018 issue). The other examples I have of Russian motors have the same general arrangement as the Japanese Kakos, with their two field magnets carried outside a basically circular casing; the difference here being that the metal parts are encased in two-part plastic mouldings, one a swirl of different coloured plastics. The

Model Pike advertisement from 1953.

very satisfying when the pieces of the puzzle fit into place, sometimes with the help of correspondence from readers. My hope is that if you come across an artefact of our modelling past such as one of these motors, you will do your best to preserve it or pass it on to someone who will.

Government surplus motors

In the early post-war years, many chose to power their model boats with the various types of government surplus or disposal motors that became available. These were precision made units of far higher quality than the average model motor yet could be bought for a good price. A problem was they were often designed



Flotsam & Jetsam

RIGHT: French Jaky No 1 permanent magnet motor.

performance characteristics, as far as I can make out from the Russian inscription on the boxes, are very much what you'd expect from a 3 - 4.5 volt motor of this type.

A French motor

Russian motor of

the 1970s.

Modellers in France long had their own local manufacturer of model motors in the form of Jaky of Montrouge. These very solidly built motors came with either permanent or wound field magnets, in both cases making use of stamped steel laminations. The example I have is a Jaky No.1, an Alnico permanent magnet type weighing some 350 grams and designed for 4 -to 12-volt operation from accumulators. The mounting lugs and brackets provided enable a choice of mounting positions, such as inverted

"Standard"



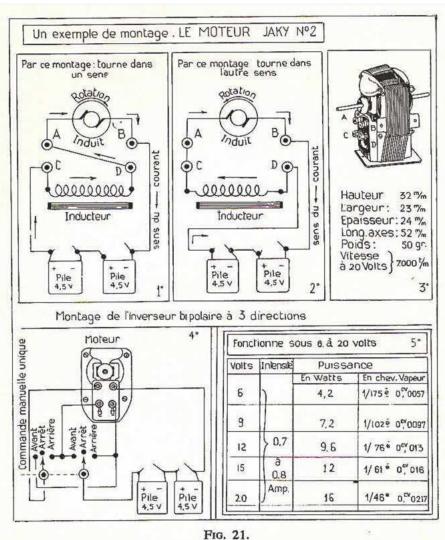


cause

MOTEUR

Graupner 1721 self-contained outboard for small boat models.





to keep the double-ended driveshaft low in a model boat, while the polished aluminium end covers and dark red painted laminations give it a very attractive appearance.

The Jaky No. 2 was a wound field type and required multiple terminals to be wired as per the explanatory diagram to enable reversing.

Several other models were available, including locomotive versions and some really interesting outboards, one of which consisted of a Jaky No. 1 mounted on a die-cast outboard leg section with geared drive to the propeller. Jaky was active from the late 1940s, but sadly appears to have died out sometime in the 1960s.

Drive units

Two different boat 'drive sets' – complete packages offering a motor, prop shaft, coupling and propeller – are pictured. The first is a German made unit of the mid 1950s with a low-drain Distler motor and matched propeller; its box shows a Graupner-style product number, but it is not identified as a Graupner product. The low-powered Distler used innovative construction to achieve long life from the poor performing batteries of the day and was described in the March 2017 issue.

The other unit shown is a slightly later one produced by the Pyro Plastics

ABOVE: Connection details for a Jaky No .2 wound field motor.



Model Boats October 2020 www.modelboats.co.uk



Flotsam & Jetsam

Corporation of the USA for powering its plastic ship kits. It utilised a German Marx Uniperm motor fitted to a plastic base that incorporated clips for two batteries and was intended to be cemented into the bottom of the boat model. Later it was produced with a cheaper Japanese motor.

Outboards

It was only after I wrote a piece on Graupner motors for the March 2017 issue that I learnt of its model 1721 outboard. Although clearly intended as a low power unit for simple models, it's of interest as it's completely self-contained, the top housing containing a switch and battery box for a single 'C' cell while the drive motor, a Japanese RE-14, sits below it. Thus, the young or inexperienced boat modeller needed only to mount the unit to his transom with two small screws and he was away.

Two pictures show German Marx outboards of the 1960s – the Neptun and Super Neptun, powered by the Monoperm and Monoperm Super motors respectively. An outline of this innovative company appeared in the July 2015 issue. The remaining outboard picture is of the Foam Wraith by Scale Model Equipment Ltd that I have finally been able to add to my collection in the cream colour scheme (see the July 2016 issue). This really is a little jewel of a model, spoilt only by its underwhelming Electrotor drive motor.

Obscure English motors

The Ivalek 3.5 – 8-volt electric motor was a product of Ivory Electric Limited, better known for its Bakelite crystal set radios in the 1950s. It's a fairly neat wound field series motor, similar to the Taycol motors in general design and construction but less powerful. At the 10s 6d price marked on the box, it was a very reasonably priced motor for the 1950s. I doubt if many were ever put to sea, but this one was found amongst other model boat paraphernalia, so someone must have been thinking along those lines.

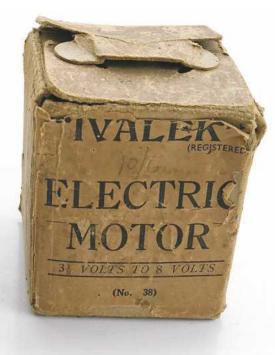
The Multum electric motor, despite its smooth cylindrical appearance, was also of wound field construction and had a Bakelite case. The working voltage range, 3 to 8 volts, pointed to its intended purpose as a power unit for workshop models, running from a bell transformer (AC) though also capable of battery operation. This made it effectively non-reversible like the Ivalek motor and limited its application in other types of models. It was made by Ward and Goldstone Plastics Ltd of London.

A provisional patent application, 4517/47, dates the little Marland motor to the late 1940s, but I've not been able to find out anything about it or the company that made it. Its main claim to fame is the use of a ring magnet and acrylic end cheeks that reveal the moving parts inside, but it appears this novelty was not enough to ensure its popular success, as it remains a rare find today.



"This really is a little jewel of a model, spoilt only by its underwhelming Electrotor drive motor"





ABOVE: Ivalek motor by the Ivory Electric Limited.

BELOW: Marland motor.





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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

Thames tug

I thought you might like to see these images of an Assurance Class tug that I originally built for my late father in 2004. After he sadly passed away last December, she was returned to me and I decided to refurbish and get her back to full working condition as a way of honouring my father and keeping his memories of life on the Thames back in the early 1940s alive.

My dad (John Lawrence) grew up on the Isle of Dogs and asked me if I would build a model that reminded him of the vessels that steamed up

and down the Thames during his childhood. He named her *Newcastle*, after the pub that he drank in as a young man (which was eventually renamed, and is probably better known as, The Waterman's Arms).

DAVID LAWRENCE EMAIL

A labour of love in the truest sense of the word, David. You've done your dad proud. **Ed**





Blasts from the past

I thought I'd send you a couple photos of craft originally featured in past issues of Model Maker/Model Boats.

The first, designed by Vic Smeed and christened Elver, was included in the May 1980 issue of Model Maker. Vic's original was 15 inches long but I decided to tweak his dimensions for my builds (I made one each

for my, then young, children), increasing the size of the hull to 22 inches. My daughter, now all grown up and married, recently rediscovered these, in a rather sorry state, when rummaging through an old packing case and handed to them back to me to restore to their former glory. After some attention in my workshop, they are now permanently displayed on her office wall!

The second, Comet, was featured in a Model Boats series, run in the May/June/ July 1972 issues, during the very early days for radio control. Designed by E.F. Amiss, this one only took 42 years to complete – but that's another story!

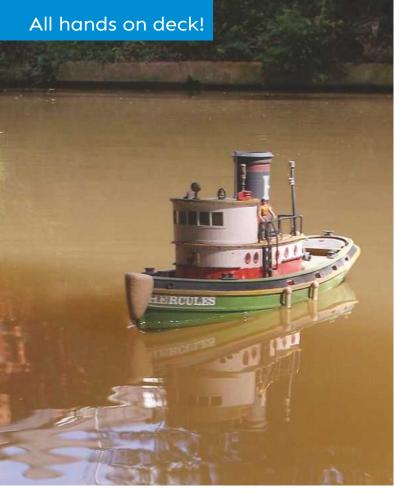
PAUL SMITHERMAN **EMAIL**



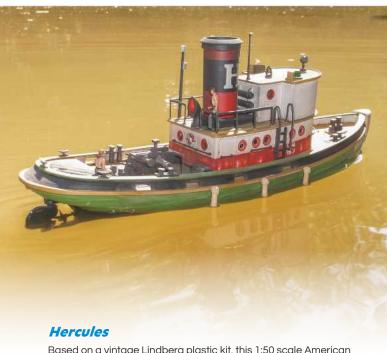
LST Mk 3 HMS Dieppe. She is 7ft in length and 13 ¼ inch across the beam. She was in a pretty poor state, so I got to work stripping can shed some light on this?

JIM CHEEL **NEW MILTON, HANTS**

You've done an amazing restoration job, Jim. Let's hope someone can tell us more about this massive model. **Ed**



Phil Parker's 1:50 scale American tugboat Hercules, based on a vintage Lindberg plastic kit but now fitted with R/C.



Based on a vintage Lindberg plastic kit, this 1:50 scale American tugboat is fitted with radio control instead. The kit was sold as motorised, but only as a simple free-sailing model powered by a couple of dry cells. I've built a rudder mechanism and upgraded the drive using a stripped-down servo for power and a more modern shaft and plastic propeller. On the water, the model can be sailed at scale speed and, thanks to a generous helping of lead, is stable even in choppy water.

Lindberg marketed a range of working boat kits, but surviving examples are now pretty rare.

PHIL PARKER EMAIL

What a terrific little tug, Phil. Love the crewmen, and how you've taken your shots on water that looks muddy enough to be the Mississippi. **Ed**



From the planet Vultan!

I've just had a nice few days enjoying the September issue. Three articles in particular hit the spot for me.

The Hobbies visit I found fascinating. I can remember buying a Hobbies Champion free flight aircraft in the early 60s. It was an excellent kit and a superb flier. I've had lots of materials from them over the years and the service has always been top notch: exactly what I ordered and quickly delivered. It was great to see inside their premises and to be able to put a face to a name. (hint, hint, Editorial header?)

I've tried on several occasions to acquire a Lesro Models' *Atlantic 21* kit but on each occasion I was either out bid or the price was ridiculously high. One example a few years ago sold for over £150! It was great to remember just how good their kits were. I made three of their TID tug kits many years ago and I still have a 575 yacht. The *Atlantic 21* looks great on the water and goes like stink with a decent motor and a 7.2 volt battery.

The third fascinating article was the Sea Gull by Ashley Needham. Many years ago I tried to make some of the sci-fi models designed by Peter Holland. (I think that some of his designs are still on the Model Boats' plans catalogue.) It's great to see a model of this kind going well with modern equipment, as probably at the time it was designed the power plant and radio control would not have made it viable. I think this is a design I might put on the 'later on' shelf.

With the lock down it looks like Ashley's mind and mine have wandered off in the same direction: models not of this world. I have attached three pictures of my latest project (still awaiting sailing trials): *PLAWT*, a river patrol boat from the planet Vultan. This is a dead simple model, being made all from 3mm lite ply, with not a single curve to be seen – all flat plates.

Hull and superstructure for less than 25 quid! Colourful little thing, isn't she? The camouflage needs to be a little different on a planet with two red suns!

Keep up the good work. It's nice to see the beginnings of a new hand at the helm.

HARRY HITCHENES EMAIL

Flash! Thanks for your lovely comments, Harry, and so glad you enjoyed the September issue. **Ed**



Your Letters

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Peter Simmonds' magnificent 124 scale scratch built trading schooner finished with her correct name, i.e. Lizzie May!

Lizzie May

While it always gives a great feeling of satisfaction to have an article accepted for publication, just imagine my horror when it was pointed out to me that in my feature on Lizzie May last month I had made a major error that was clearly evident in one of the photographs! I am sure that by now many of you will have spotted the incorrect spelling of the name: Lizzy instead of the correct spelling Lizzie. How I could have had the boat over a vear now and sailed her many times without noticing I have no idea. Fortunately, a quick trip to the sian makers corrected the error but unfortunately not in time for the September issue

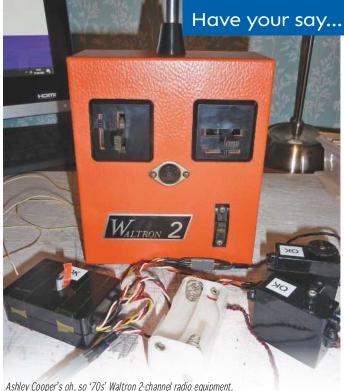
PETER SIMMONDS **EMAIL**

Don't be so hard on yourself, Peter. We all make mistakes. I received a list of mine (too long to publish) from a reader who is also a proofreader following the September issue. Yours was not nearly as glaring as think, as most people would simply have been admiring your beautiful build. Thank you, though, for sharing an updated picture of Lizzie, rather than Lizzy, May. Ed

What about a Waltron feature?

Being involved in this hobby for a number of years I always enjoy any articles about modelling of yesteryear and I particularly enjoyed the article about Aerokits by John Parker and the series on vintage radio control equipment by David J. Wiggins in last month's issue.

On the subject of vintage RC equipment, I wonder if David has heard of or considered doing on article on Waltron R/C equipment which was made here in the UK at Marple in Cheshire by Waltron Electronic Controls Ltd.



I attach a photo of my Waltron 2-channel radio equipment, purchased in about 1974 for the princely sum of £50. It is still in full working order, although a bit noisy and jittery compared with modern equipment. If David is interested, I have all the literature supplied with the equipment, which includes price lists, a full technical specification (something which no manufacturer would divulge nowadays), operational checks and installation instructions for boats or aircraft, all of which are wonderfully type written.

ASHLEY COOPER EMAIL

As you enjoyed these features, Ashley, I'm sure you will also be alad to see the Motor Miscellany instalment in John Parker's excellent ongoing Flotsam and Jetsam series in this month's issue.

Thank you for allowing us to share your photo of the Waltron 2 - even knowing very little about radio equipment myself, the style of this just screams

1970s – and for your kind offer to Dave Wiggins; I will pass your contact details on to him. Ed

Mabuchi motor

The motor in Mr Strudwicke's photograph last month may not be Government Surplus but a Mabuchi 65 from the late 1950s. For comparison, I am sending you a photo of the two Mabuchi 55 motors installed in a rather crude model of a WW1 destroyer I built as a schoolboy in about 1960. Since the model has survived so long, I hope to lighten the hull somewhat as it's carved from the solid, and then detail it properly to make an accurate model (probably of HMS Velox), before fitting new motors and radio control. I should have time now that I am retired, although it doesn't always seem to work that way!

DAVID GARRETT **COUNTY DOWN**

Great spot, David! I look forward to seeing the end result of your refurb one of these days. **Ed**



The motor illustrating Mr Strudwick's may well be a Mabuchi, points out eagle-eyed reader David Garrett.



John Corrin is hoping someone reading can advise him on this Isle of Man barn find.



IOM barn find

I wonder if you, or someone reading, can tell me anything about a barn find I recently made on the Isle of Man. The model boat in question measures 64 inches in length, is 14 inches at her width and weighs in at 12 pounds. Is it perhaps possible to identify who may have made this or advise where I might find plans and parts for her restoration?

JOHN CORRIN EMAIL

I love the fact that you are planning to restore her, John, and I am hoping that someone may be able to share some information and advice. It's very likely, however, that she was scratch built and is one of a kind. Over to you chaps! **Ed**

Plan and feature suggestions

Congratulations on an excellent September edition. It was nice to see the return of the letters pages and I read with some interest the letter on terminology. To this end, I phoned an old friend who, after Royal Navy service, has now run the family boatbuilding firm for over 30 years. He assures me that in today's parlance, only the upper surface of a boat that is open to the elements and can be walked

on is called a deck, everything else, enclosed cabin spaces, etc have floors. This has evolved to eliminate the snobbery that often surrounds nautical terms and represents the fact that many people interested in boating today are happy with simplicity. Also, stem and prow are now regarded as being the same, with the former being for warships, the latter for merchant vessels, but either term now applies to small craft such as cabin cruisers.

While writing, can I make a couple of suggestions? In terms of future plans, simple fast electric boats always seem popular. Also, I believe an article on brushed motors would be a great help to everyone, since not all boaters know the difference between 3-pole and 5-pole motors, or how many turns their version requires, and I include myself here! Very often we buy what is on special offer, etc, and hope it is suitable. Please keep up the good work – you are among friends!

CLIVE NELSON-SINGER EMAIL

Thanks for your lovely comments, Colin. All feedback/ suggestions are so welcome. I will try and make sure there are some simple fast electric boat plans in the mix going forward and have spoken to one of Model Boats long serving contributors about your feature suggestion, so watch this space! **Ed**

Hints and tips

I am glad to see that you have revived the readers' letters section of the magazine, as in the past, having been a reader of Model Boats magazine since the 1950s, these were always the pages I turned to first. I hope that this will be a regular feature rather than an occasional one. I would also like to see the return of readers' hints and tips.

While writing, I must mention the comments on rabbits made by Tony Saunders 'Make the right call' letter in last month's issue. When I was an apprentice, many years ago, rabbit and rebat were used interchangeably.

MAX COCKETT EMAIL

Your email put a big smile on my face, Max. When I mentioned to someone that I was going to reintroduce letters I was warned that I probably wouldn't get much in the way of correspondence as most people prefer to use the forum these days. Well, there that may be true for some but not everyone uses social media. As far as I'm concerned, there's nothing quite like good oldfashioned print when it comes to keeping things inclusive. On the title I previously edited, the letters section was always my favourite part of the magazine to work on, as never a month went by when I didn't learn something new. So, as long as the emails/letters keep coming, including those featuring useful hints and tips, I'll definitely keep publishing them! Ed

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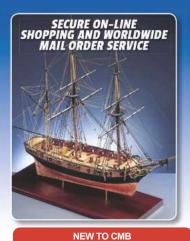
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