

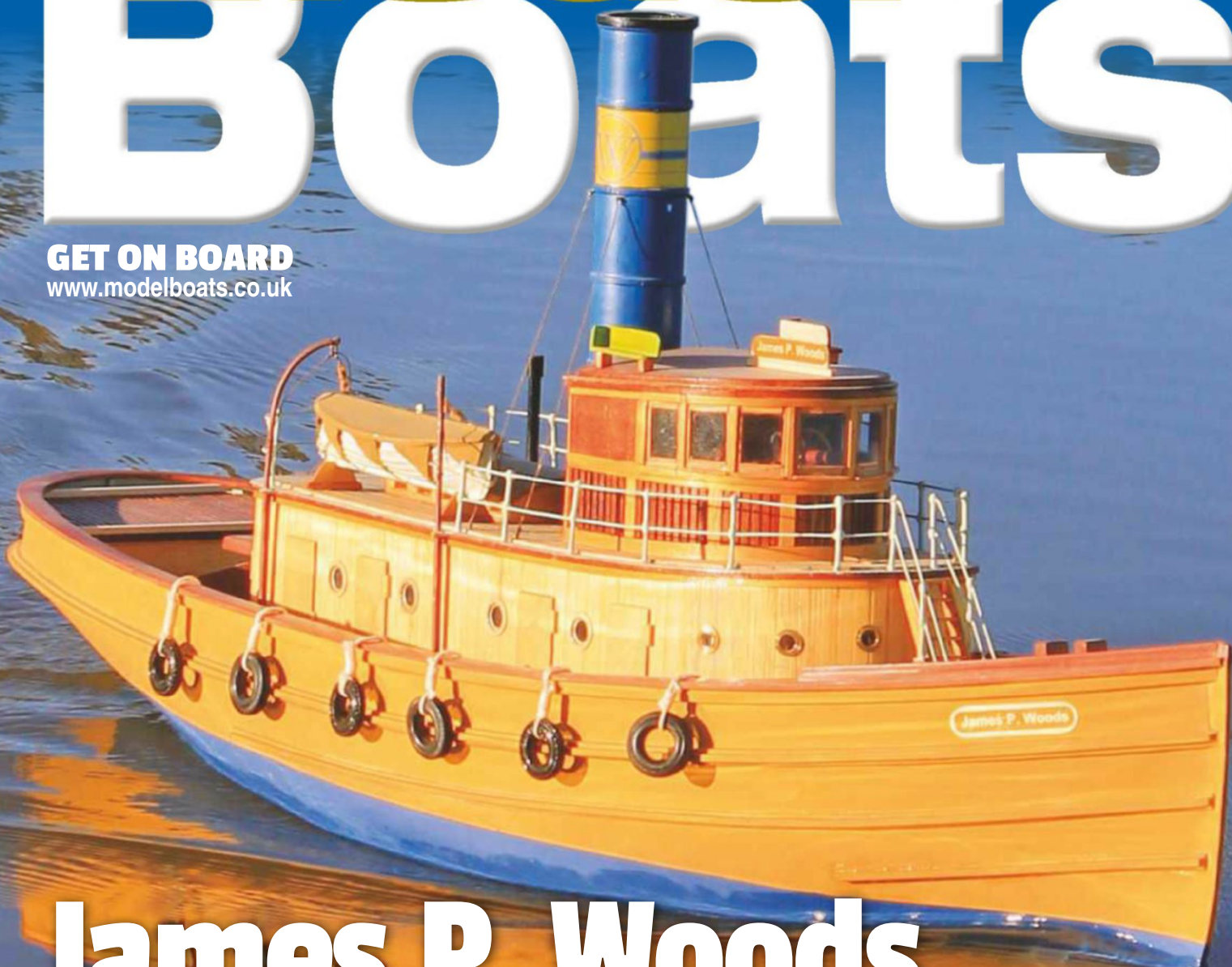
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**No.1 For  
Sail & Scale**  
March 2019  
Vol.69 No.820

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## James P. Woods

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London Fire Brigade  
Fire Boat under the  
spotlight in this issue



### HMS ASTUTE

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sub gets weathered





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| Vly. Swan Class Sloop. 1776 1:64 800mm     | £245.95 |
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| Pegasus Swan class sloop 1:64 800mm        | £315.95 |
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| Revenge 1577 1:64 scale 885mm              | £364.95 |

|                                               |         |
|-----------------------------------------------|---------|
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| Granado. Bomb Ketch 1756 1:64 scale 785mm     | £263.91 |
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| Tradition. Seine net trawler 870mm 1:24   | £371.75 |
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## Hull and Plan Sets

|                                              |         |
|----------------------------------------------|---------|
| Shirley Ann Inshore Trawler 1:16 scale 685mm | £49.45  |
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| Bluebird Of Chelsea. 1:24 scale 654mm        | £47.00  |
| Forceful Paddle Tug. 1:48 1003mm             | £54.00  |
| Guardsman Customs launch 1:48 scale 571mm    | £38.50  |
| Stt Nederland Lug 558mm                      | £42.95  |
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| Cervia, Thames Tug 1:48 scale 711mm          | £101.00 |
| Tyne Life Boat 1:19 scale 787mm              | £52.50  |

## Plastic Kits

|                                            |         |
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| Trumpeter HMS Nelson 1:200 scale           | £251.99 |
| Trumpeter HMS Rodney 1:200 scale           | £251.99 |
| Trumpeter USS Missouri 1:200 scale 1352mm  | £314.99 |
| Merit USS Hornet 1:200 scale               | £287.99 |
| Trumpeter Bismarck 1941 1:200 scale 1265mm | £269.99 |
| Trumpeter USS Arizona BB-39 1941 1:200     | £179.99 |
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| Heller Le Soleil Royal 1:100 scale         | £149.95 |
| Italian Schnellboot S-100 1:35             | £168.50 |
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| Italian PT 109 Torpedo Boat 1:35 scale     | £89.95  |
| MTB Vosper St Nazaire Raid MTB 74          | £89.95  |

|                                       |         |
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| Trumpeter HMS Hood (1941) 1:350       | £96.29  |
| Trumpeter Prinz Eugen 1945 1:350      | £64.96  |
| Trumpeter Admiral Hipper 1941 1:350   | £62.26  |
| Tamiya Bismarck 1:350 717mm           | £61.99  |
| Merit HMS Ark Royal 696mm 1:350 scale | £109.99 |

## Plastic Kit Upgrades

|                                                    |         |
|----------------------------------------------------|---------|
| HMS Dreadnought 1907 Railing Set 1/350             | £14.99  |
| HMS Hood detail sheet pack 1:350 scale             | £35.80  |
| Bismarck etched detail Tamiya Bismarck 1:350       | £25.99  |
| Prince of Wales cranes & railing 1:350             | £19.50  |
| S-100 Schnellboot gun detailing etch 1:35          | £22.60  |
| Jeremiah O'Brien Liberty Ship etch 1:350           | £22.60  |
| Prinz Eugen etched set. 1:350 scale                | £24.70  |
| Vosper MTB 1:72 scale                              | £19.40  |
| Prince of Wales etched sheet pack 1:350            | £23.99  |
| Admiral Hipper etched sheet set 1:350 scale        | £22.60  |
| U-boat V1C141 for 1:72 scale Revell kit            | £11.99  |
| Gato class submarine for 1:72 revell kit           | £13.99  |
| Elco PT596 1:35 scale                              | £16.30  |
| Tiprlitz (designed to be used with Tamiya kits)    | £35.80  |
| Wooden deck & Etch set or Bismarck 1:200           | £111.20 |
| DX Wooden deck & Etch for Bismarck 1:200           | £199.20 |
| Wooden deck for HMS Hood 1:350 scale               | £36.50  |
| DX Wooden deck and etch Nelson 1:200 scale         | £199.99 |
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| Wooden deck for Bismarck 1:350 scale               | £33.60  |
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| Wooden deck for HMS Repulse 1:350 scale            | £34.90  |
| DX Wooden deck and Railing for Bismarck 1:350 97mm | £37.99  |
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| Flower Class Corvette Type 'C' Bridge Set 1:72     | £38.40  |

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## Harold Underhill Plans

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| Cutty Sark Clipper Ship 698mm            | £32.40 |
| Marie Sophie of Falmouth 1033mm          | £48.00 |
| Lady of Avenel. Wood. 850mm              | £36.00 |
| 74-Gun Two-Decker (Circa 1813 1422mm     | £84.00 |
| Lady Daphne Thames sailing Barge 812mm   | £32.40 |
| 12-Gun Brig-of-War. Lines, 1187mm        | £60.00 |
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| Valerian. Briham Trawler 1069mm.         | £54.00 |
| Diesel Ring Net Fishing Boat 615mm       | £32.40 |
| Three Brothers. Rye Fishing Smack. 797mm | £32.40 |
| Muirneag. Scottish Lug. 1612mm           | £72.00 |
| Clyde Puffer Sealight, 580mm             | £21.00 |
| Leon. Wood Brigantine 514mm              | £84.80 |
| Iron Paddle Tug 1:48 scale 863mm         | £48.00 |

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| MM1348 Miranda Steam Launch 42mm             | £13.00 |
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| MM1390 Tyne Launch 740mm 1:19 scale          | £13.00 |
| MM1246 H.M.S Inflexible battle-cruiser 1:192 | £13.00 |
| MM1256 H.M.S Euxer cruiser 1:192             | £12.50 |
| MM1387 H.M.S D.S Diamond destroyer 1:96      | £22.50 |
| MM609 Brave Borderer: 361r Vosper P.B        | £13.00 |
| MM672 H.M.S Hood: 1:192 scale                | £12.50 |
| MM1367 Norfolk Wherry. 1:48 scale            | £12.50 |
| MM1212 H.M.S S.R Ark Royal: 1:192 scale      | £12.50 |
| MM189 Vll Everard Thames Barge: 1:48 scale   | £18.50 |
| MM1290 Tantal Landing Craft: 1:48 scale      | £17.50 |
| MM153 Dinghy: 14 foot sailing dinghy 21in    | £13.00 |
| MM1428 Range Safety Launch: 1:12 scale 43in  | £17.50 |
| MM1292 Forceful: navy paddle tug. 1:48 scale | £18.50 |
| MM1365 Cella Jena: Sailing Barge. 1:24       | £21.50 |
| MM1441 Formidable: Steam drifter 1:33        | £17.50 |
| MM567 Cervia: Thames tug in 1:48 scale       | £13.00 |
| MM897 H.M.S Kent: 1:96 early cruiser 58in    | £18.50 |
| MM1202 H.M.S Dreadnought. 33in               | £18.50 |
| MM1310 Clonlighting Clyde Puffer 1:36        | £37.50 |
| MM1448 Liverpool Lifeboat: 1:12 scale        | £13.00 |
| MM826 St Louis Belle: stem-wherry 33in.      | £12.50 |
| MM1178 Inchcolm Clyde puffie 1:32 scale      | £12.50 |
| MM1275 Revive Briham sailing trawler 1:60    | £17.50 |
| MM1368 Victoria:Thames steam launch 1:12     | £13.00 |
| MM737 Eileen: motor fishing boat 1:24        | £12.50 |
| MM1444 Pilot 40 police/pilot launch 27 1/2   | £13.00 |
| MM500 Cossack: 38inTribal class destroyer    | £12.50 |
| MM1335 Vesper 73fr rescue launch 1:24 scale  | £22.50 |
| MM1407 SMT Northland: 1:28 scale tug.        | £29.00 |

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## Static Display Kit Plans

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| 1009 Santa Maria plan 1:65 scale 540mm        | £10.82 |
| 1013 Mayflower plan. Scale 1:60.              | £19.30 |
| 1016 HMS Prince plan 750mm                    | £24.50 |
| 1019 Greek Galley plan. Length 560mm.         | £9.33  |
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| 1040 New Bedford Whaler plans 1:16. 550mm.    | £15.54 |
| 1200/103 Riva Aquarama plan. 1:10 scale 860mm | £28.23 |
| 1200/10 Endeavour Plan 1:80 480mm             | £10.82 |
| 1200/82 Endeavour J Class Plan 1:35 1130mm    | £27.36 |
| 1200/83 Titanic Plan 1:250 1070mm             | £59.69 |
| 1100/08 Revenge plan 1577 1:64 scale 885mm    | £36.06 |
| 1100/10 Lady Nelson Cutter Plan 1:64 530mm    | £10.82 |
| 1100/03 HMS Fly Plan 1:64 800mm               | £26.11 |
| 1100/04 HMS Vanguard Plan 1:72 1171           | £49.49 |
| 1100/05 HMS Pegasus plan 1:64 800mm           | £26.11 |
| 1100/06 Mercury plan 1:64 860mm               | £30.71 |
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| 990 Victory Long Boat, plans, Scale 1:16.     | £19.95 |

This is just a selection of over 1000 plans available

## R/C Equipment

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| Viper Marine 25 amp speed controller    | £37.99 |
| Hi Tech Mega Arm Sail Winch 19.8kg/cm   | £30.99 |
| Proportional Drum Sail Winch            | £30.63 |

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|----------------------------------------------------|--------|
| Viper Marine 20amp speed controller                | £29.99 |
| Viper Marine 15amp speed controller                | £24.99 |
| Viper Micro Marine 10amp speed controller          | £24.99 |
| Viper Marine 15 Plug Play speed controller         | £24.99 |
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| Steam Engine Sound                   | £45.72 |
| Destroyer Whoop Whoop                | £37.62 |
| Fog Horn                             | £37.62 |
| Sub Dive Alarm                       | £37.62 |
| Air Horns                            | £37.62 |
| Large Ship Horn                      | £37.62 |
| Old Steam Whistle                    | £37.62 |
| 16inch Guns Salvo                    | £37.62 |
| Tug Boat Air Horn                    | £37.62 |

## Motors

|                                               |         |
|-----------------------------------------------|---------|
| Schottel drive unit 40mm dia prop             | £72.12  |
| Schottel drive unit 50mm dia prop             | £90.72  |
| Schottel drive unit 70mm dia prop             | £110.34 |
| Mabuchi 540                                   | £7.43   |
| Motor mount for MFA 800/850 Motors            | £4.50   |
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| RE850 Motor 12.0 Volt with mount              | £28.86  |
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| 951 series 385 Motor and 6:1 Gearbox 4.5 -15v | £18.43  |
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| 800/850 Belt Drive Reduction Unit 2.1:1       | £42.84  |

## Rudder Assemblies

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| 60 x 41mm Rudder Assembly | £5.34 |
| 45mm x 30mm Rudder        | £5.95 |
| 53mm x 36mm Rudder        | £5.53 |
| 67mm x 44mm Rudder        | £6.43 |

## Coupling Assemblies

|                                                                                                                        |        |
|------------------------------------------------------------------------------------------------------------------------|--------|
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| Double Universal Joint Coupling                                                                                        | £14.04 |
| Coupling set includes 2 inserts of your choice and an allen key. Inserts sizes 2.0, 2.3, 3.0, 4.0, 5.0, 6.0, 6.0mm pin |        |
| M3, M4, M5 thread                                                                                                      |        |

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| 7in long tube 4mm threaded Propshaft  | £8.70  |
| 8in long tube 4mm threaded Propshaft  | £9.85  |
| 9in long tube 4mm threaded Propshaft  | £9.30  |
| 10in long tube 4mm threaded Propshaft | £9.70  |
| 11in long tube 4mm threaded Propshaft | £10.25 |
| 12in long tube 4mm threaded Propshaft | £11.05 |
| 13in long tube 4mm threaded Propshaft | £12.40 |

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| 301/03 WP Propeller Shaft M4 211mm | £27.66 |
| 301/04 WP Propeller Shaft M4 236mm | £27.66 |
| 301/05 WP Propeller Shaft M4 261mm | £30.30 |

## Raboesch Brass Propellers

|                                           |        |
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| Brass Propeller (A Type) 25mm -3 Blade-M4 | £11.70 |
| Brass Propeller (A Type) 25mm -3 Blade-M4 | £11.70 |
| Brass Propeller (A Type) 30mm -3 Blade-M4 | £12.78 |
| Brass Propeller (A Type) 35mm -3 Blade-M4 | £12.78 |
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| Brass Propeller (A Type) 55mm -3 Blade-M4 | £14.88 |
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| Brass Propeller (A Type) 60mm -3 Blade-M4 | £18.06 |
| Brass Propeller (A Type) 65mm -3 Blade-M4 | £18.06 |
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| Bow thruster unit with motor 16mm I/D      | £39.00 |
| Bow thruster unit with motor 19mm I/D      | £39.00 |
| Bow thruster unit with motor 22mm I/D      | £44.75 |
| Bow thruster unit with motor 25mm I/D      | £44.75 |
| Mini Bow thruster unit with motor 10mm I/D | £31.20 |
| Bow thruster unit with motor 30mm I/D      | £39.48 |

## Asst CAP Maquette Fittings

|             |                                     |
|-------------|-------------------------------------|
| CAP/R113    | Modern boat fender, 48mm long       |
| CAP/R112    | Modern boat fender, 39 mm long      |
| CAP/R114    | Modern boat fender, 56mm long       |
| CAP/A48/15  | Searchlight, 21mm dia x 28mm high   |
| CAP/A84     | Danforth anchor 50mm long           |
| CAP/R940    | "D" section fender 9mm high 2 mtr   |
| CAP/R6      | Liferatt container 58mm long        |
| CAP/A62     | Enclosed round radar array 30mm dia |
| CAP/A83     | COR Plough anchor. 60mm long        |
| CAP/R70/20  | Orange Lifebelt 30mm dia            |
| CAP/A110/10 | Motorboat yacht winch 47mm wide     |
| CAP/R93     | Modern boat fender, 32mm dia        |
| CAP/R94     | Modern boat fender, 56mm dia        |
| CAP/R92     | "D" section fender 15mm high 2 mtr  |
| CAP/A70/15  | Fibre moniker kit 37mm high         |
| CAP/Q90     | Chrome steering wheel 48mm dia      |
| CAP/B60     | 60mm dia ship's wheel. Chrome       |
| CAP/A110/15 | Radar receiver and stand. 19mm      |
| CAP/A68/15  | GPS receiver rodome 10mm high       |
| CAP/A115/15 | VHF radio base & handset 14mm       |
| CAP/A112/10 | Echo sounder /23mm x 19mm           |



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- UK Boiler Test Code 2018 – Volume 2
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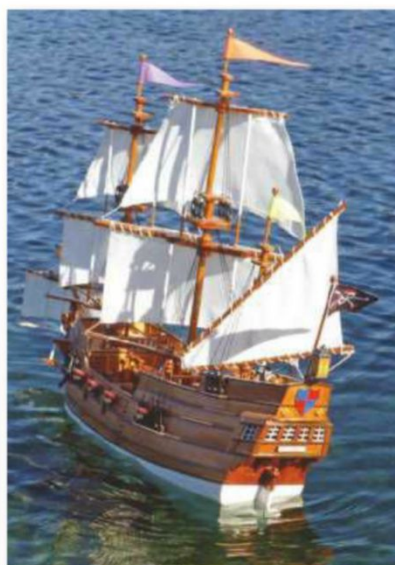
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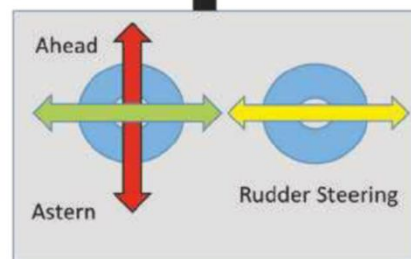


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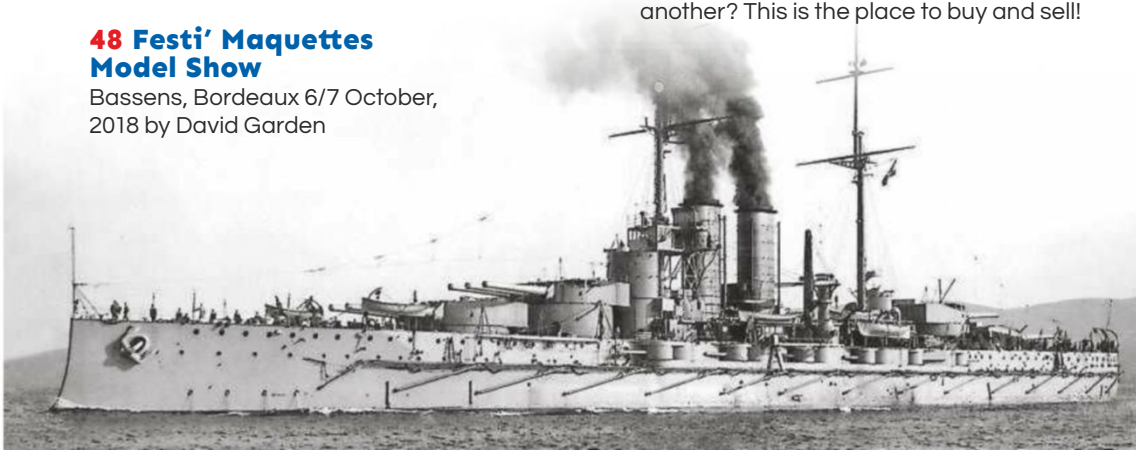
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Looking for a new model or making room for  
another? This is the place to buy and sell!

I'm sat here in my cozy office looking out on a frozen landscape, just pondering the decision I made a few weeks ago to test a new fast electric boat at the Boston MBC. It was a pretty cold day and it had not entered my head that the pond could be frozen – what in winter time? Anyway, on arrival, yep, you guessed it, the middle of the pond was frozen, however in my over confident head I could see an ice-free patch in one corner big enough just to try the boat out if nothing else. After a shaky start I felt like I was getting the hang of the boat and kidding myself that the ice did not look that thick in the middle, set about breaking it up! Within seconds the vessel was across the pond, made contact with the edge of the 'thin' ice, launched 'itself' (I had nothing to do with it from this point) into the air and came to an agonizing halt a couple of feet from the comfort of free water. It was effectively 'grounded' in the middle of the pond! Thank goodness a white knight came along armed with a fishing rod, complete with a tennis ball on the end of the line to recover the stricken vessel! Lesson learned – show some patience, especially with a new boat!

It was another busy month at Model Boats, the highlight being a visit, along with my trusty designer Richard, to the Alexandra Palace and the London Model Engineering Exhibition. It was yet another day which put many faces to names that I already know well and despite this not be a Model Boat show, a great deal of time was spent with the several clubs who attended. I was particularly pleased to see and impressed by the stands displayed by the Eastleigh Young Engineers, 1st Eastleigh Scouts and Halliford School – not all kids are glued to screens!

**Martyn Chorlton**

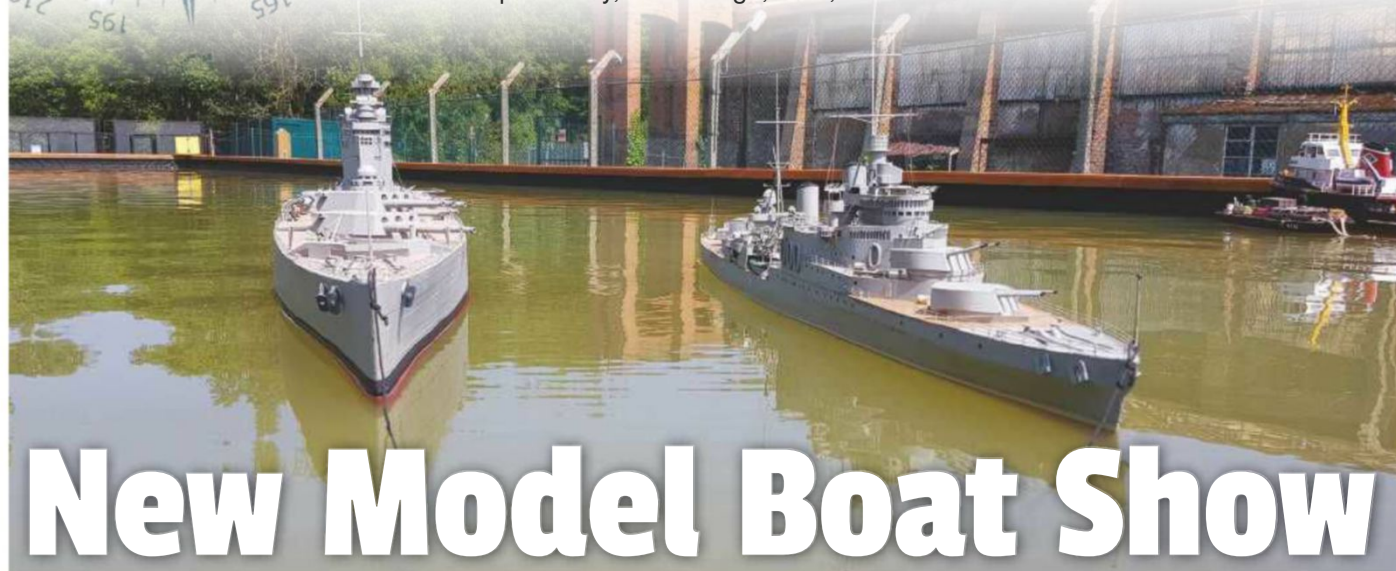




# Compass 360

Our news round-up from the model boating world

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## New Model Boat Show

In this world of doom and gloom I am pleased to announce that there will be a new Model Boat Show on the calendar this year. Hosted by the Ellesmere Port MBC, the event is being held at the Hooton Park Trust on 18/19

May, 2019. Malcolm Watts reports 'We already have five traders signed up and expect another three, so we will have minimum of eight traders and in the past when we held the event at The Boat Museum we had ten MBCs displaying

their models. We have a pool for sailing and on site catering vans, no café as such. As the site is an old RAF Airfield (now a Historic site) there are a small number of aviation related exhibits to see, although this show is for model boats and a

small number of RC trucks and crawlers.'

Show times are 10-4 on the Saturday and 10-3 on the Sunday; entry is only £5. Contact Malcolm on 01352 754480, mobile 07434831354 for more details.

## BRASS MONKEY event & final GAMES 8

After a night of heavy rain, the race team were lucky when arriving at Abbey Meads Lake that it was blue sky and sunshine. However, the wind did not arrive as the forecast 8 to 10 mph, although it was in a southerly direction giving a long beat and run course along the western control area. It was light and patchy and very frustrating at times. As well as the long course for the 12 Marbleheads, a shorter course was set for the 3 BOTTLE boats. 8 races were sailed with the BOTTLE boats setting off at 30 seconds before the Marbleheads, with the intention that they should finish together, Steve Hill's green sailed 72 out in front of Colin Goodman's Marblehead 61 as they approached the finishing line.

The racing started in very little wind with Peter Stollery sailing his UPFRONT winning Race 1, whilst at the back of the fleet 8-year old

Oliver Stollery, racing a Marblehead for the first time was delighted that his 20 year old ROAR EDGE was able to overtake five boats on the run down to the gate. Peter also took Race 2, but then let John Shorrock's QUARK streak away into a big lead in Race 3 and was never challenged, although Trevor Binks sailing his PRIME NUMBER closed the gap towards the end of the race.

After lunch there was a little bit more wind, more from the south-east, which required a change of course to suit. After three podium finishes in the morning, Colin Goodman sailing a GRUNGE won Race 4 and was 2nd in Race 5 to Trevor. Then it was the turn of John again to take Race 6, before letting Phil Holliday racing his NIOUTRAM sail

away into a big lead in Race 7. In the final Race 8 Colin came to the front again, with Trevor 2nd and Peter 3rd.

In the BOTTLE boat event the results were dominated by Steve Hill, as he counted 5 firsts in the 6 races sailed, being only beaten by 6-year-old Nathan Stollery in Race 3.

### Marblehead results:

1st Colin Goodman Chelmsford GRUNGE - 11 and winner of the BRASS MONKEY  
2nd Trevor Binks Eastbourne PRIME NUMBER - 19  
3rd Peter Stollery Guildford UP - 21

### BOTTLE boat results:

1st Steve Hill Frensham Pond - 4 and winner of the BRASS MONKEY BOTTLE  
2nd Keith Parrott Frensham - 8  
3rd Nathan Stollery Guildford - 9





# Model of Mayflower well under way in Dartmouth

The countdown to a year of celebrations marking the 400th anniversary of the Mayflower's historic voyage to the 'New World' in 1620 has begun. Before finally departing from Plymouth in September 1620, the Mayflower and her companion ship Speedwell anchored in Dartmouth for repairs. In the end, the unseaworthy Speedwell returned to London and Mayflower continued alone to battle the Atlantic for 66 days before finally making landfall near present-day Cape Cod. Today, the name Mayflower is associated with human endurance and endeavour and is revered in particular by the many Americans who trace their origins to the first Founding Fathers who made the perilous journey.

## Dartmouth Mayflower 400 -

Proud of their connections with the famous ship, Dartmouth has embarked on building a one-tenth scale model of the Mayflower to be displayed in the town in readiness for events commencing in November this year, to mark the 400th anniversary of the epic voyage.

Chairman of the Mayflower Dartmouth 400 organising



committee, Spencer Wigley, is confident that the 10ft half-section model will afford a 'fascinating view in miniature of shipboard life on the Mayflower - and a keen appreciation of the hardships endured by its 102 passengers and crew.' Once completed, the model will be a permanent display in the Dartmouth Museum or Visitor Centre.

Leading the build in space generously provided by the Britannia Royal Naval College, is one-time shipwright, yacht broker and all-round Mayflower enthusiast, Ian Kirkwood, who commenced the project in April 2018.

**A world of high precision** - "It's daunting," admits Ian, who has spent a lifetime working with full-scale yacht and boat-building. "Everything is one-tenth the size it should be. You need smaller tools, greater dexterity and more patience. And there's so much less margin of error. It's a world of high precision where any inaccuracies

are exaggerated in the build."

Progress has been made and, at the start of the New Year, all 37 laminated oak hull frames were fixed to the keel and the first longitudinal 'whales' fastened. With the transom, sternpost and bow complete, the hull is well defined and with some imagination, the general shape of the completed model can be visualised.

"Currently," says Ian, "we are fitting the deck beams and cutting over 200 'knees' to provide the structural anchor points for the remaining internal construction. And then we can start to cut, shape and fit mahogany hull planks. This will be a real test of skill and so important for the overall aesthetics and authenticity that we have to achieve."

**Support from sponsors' key to project** - Ian makes special mention of a number of sponsors who have rallied to provide the tools and materials needed to set up the model workshop, housed in the

signals

corner of a Royal Britannia Naval College warehouse in Dartmouth.

"Axminster Tools & Machinery have sponsored the bulk of equipment required by the Mayflower model build workshop in Dartmouth," says Ian. "They have also been able to enlist the support of a number of their supply partners including Aries Dust Extraction and Aries Duct Fix, Festool power tools, Tormek sharpening systems, Proxxon model making machines and Lie-Nielsen precision hand tools."

The Mayflower 400 international programme, is a four-nation commemoration marking the sailing of the Mayflower ship in 1620 from England to the New World and will explore all aspects of the Mayflower history and legacy, reflecting core themes of imagination, humanity, freedom and future.

A comprehensive programme of cultural and heritage events is expected to attract over a million visitors to the UK and generate revenues of over £400 million for business at the 11 official Mayflower national trail destinations. Media enquiries: wayne.asher@axminster.co.uk

## DIARY DATES 2019

### Sat/Sun 23/24<sup>th</sup> March

The 9th Model Engineering and Hobbies Exhibition at the Michael Herbert hall, South Street, Wilton, nr Salisbury SP2 0JS. This will be our 9th Hobbies and model exhibition here at Wilton. There will be a wide range of high standard model displays including traction engines, fun fairs, ships, trains and much more. Many of the exhibits will be working. Some outside exhibits will be in steam and this time there will be four full-sized traction engines outside the hall. Trade stands and light refreshments are available. There is disabled access and free parking in the adjoining public car park. If you want to see a wide range of high quality models, here is the place to come. There should be something to interest most people and the moving exhibits are a particular favourite with adults and children alike. All our profits will be going to the stars appeal for Salisbury District hospital. Opens 10-5 both days, entry £4 for adult and £2 for children. For further information you can ring 01980 610346 or email p.parrish324@btinternet.com.

### Sat 30<sup>th</sup> March

The Moorhen Model Boat Club, along with West Essex Model Truck Enthusiasts will be hosting a model show at Roydon Village Hall, Roydon, Harlow, Essex, CM19 5HH. The show time will be 10am to 4pm. Entry fee for adults will be £2, while children under 14-years

of age will be free entry. There will be light refreshments available to purchase during the day. The proceeds from the raffle will go to the West Essex Model Truck Enthusiasts. All other proceeds will go to the village hall fund.

### Sun 7<sup>th</sup> April

The Mutual Model Boat Society Grand Modellers Bring & Buy Sale at the Crimble Croft Community Centre, Aspinall Street, Heywood, Manchester OL10 4HL. Come along and enjoy this famous event, either to sell or purchase your supplies. There are always lots of unusual bargains to be had. Opening time for sales 09.30am; opening time for traders 08.30am. Food available from 09.00am. Closing time 1.00pm. The whole site is wheel chair friendly. Admission £1.50 includes a raffle ticket. To Reserve a sellers Table, 6ft x 2ft = £10.00. Please contact Kevan Winward 07803 975089 or Colin Travis 07905028298.

### Sun 7<sup>th</sup> April

Tethered Hydroplane Regatta at Althorne Lake, Essex (This is a private lake situated to the south side of the B1010 in Althorne village, 1/2 mile past Station Rd), start time 11am for all meetings. With regards to the Althorne venue, the strength and direction of the wind plays a big part in whether we are able to hold the regatta. Please check before setting out. Norman Lara, Tel mobile 07956 423410 or Steve Poyser 07771640132.

### Sun 14<sup>th</sup> April

Kirklees Model Boat Club - Steam Day and Mountfleet Models - From 9-4 at Wilton Park, Bradford Road, Batley, WF17 8JH. All types of models welcome except IC or High Performance Fast Electrics. The theme is Steam and Mountfleet Models. Steam models with need up to date paperwork. Boiler testing may be available on the day by prior notice. Free car parking, refreshments. For more information contact Stan Reffin on 0113 2675790 or via the website kirkleesmodelboatclub.weebly.com

### Sat/Sun 4/5<sup>th</sup> May

Kent Model Boat Display Team and Mid-Thames Model Boat Club are pleased to announce they are joint organising the Spring Bank Holiday Model Boat Regatta at Beale Park, Lower Basildon, Reading RG8 9NW over the weekend 4/5<sup>th</sup> May 2019. This is an exceptional venue for model boat enthusiasts. For those clubs wishing to attend, there is free entry, parking and overnight camping with toilets available. The venue also has excellent facilities including a restaurant, and various amusements for all the family. For further details please contact either:- Phillip Montague KMBDT on email phil.kentdaa@yahoo.co.uk or Tony Simons MTMBC on email tony406@btinternet.com.



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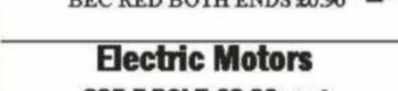
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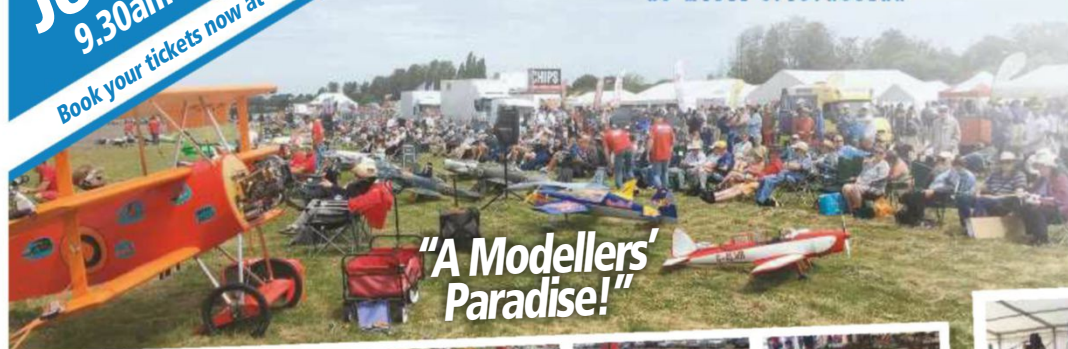
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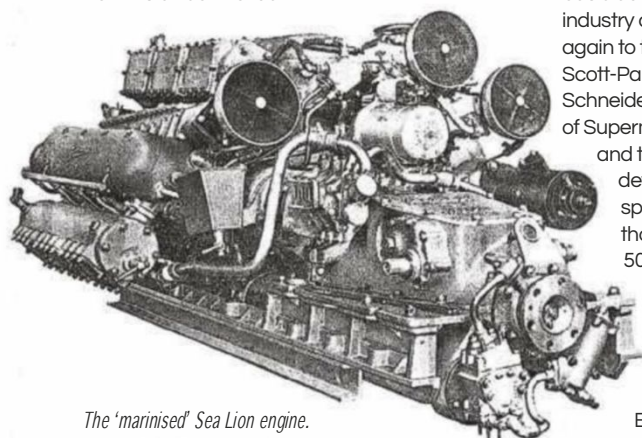




# All British Whaleback

Nick Brown continues his build of the classic Type 2 HSL

**W**elcome to part two of four on the Dean's Marine 1/24 scale RAF HSL 128. In this part we will be discussing the motive power, its steering system, and how it's all controlled.



The 'marinised' Sea Lion engine.

Fig. 1. "Sea-Lion" engine and gearbox—front view

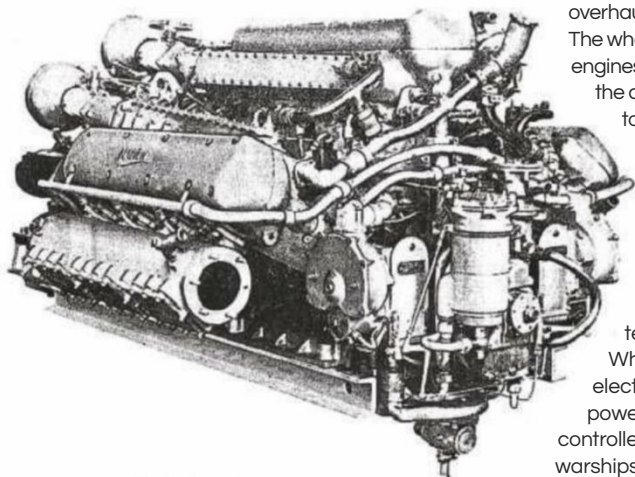


Fig. 2. "Sea-Lion" engine and gearbox—rear view

## Power plants

The original 63ft whalebacks designs used by the RAF and Royal Navy all used the readily available Napier Sea Lion Marine engine. The basic design of this engine is from the aircraft industry and can be mainly attributed once again to that speed-mad entrepreneur Hubert Scott-Paine. He was heavily involved in the Schneider Trophy competition; he was an owner of Supermarine (builders of the great Spitfire) and the Napier Lion engine he helped develop was used in aircraft and land speed record cars. In 1932 he decided that a marine version of the Napier Lion 500hp-racing engine could be produced and fitted in fast motorboats.

Suitably modified to be cooled by sea water, the Napier Sea Lion or 'Power Lion' was fitted in most air sea rescue launches, including all British Power Boat Company types. They were simple, compact and relatively easy to maintain with 300 hours between overhauls making them ideal for motorboats. The whalebacks had three Napier Sea Lion engines fitted in the aft section of the boat but the centre engine was positioned opposite to the port and starboard engines due to narrowness of the hull. This engine had a special vee-drive gearbox allowing the drive shaft to connect to the prop-shaft.

Converting these petrol engines to modelling versions is a very simple affair as we almost always tend to head towards electric motors. Whether they are brushed or brushless, electric motors provide almost instant power forward and in reverse via a speed controller - even much so that modern warships use them as main propulsion. In this model, I am using a simple set up so beginners

can easily understand the methods used and hopefully get their models up and running. Whilst the Whaleback was triple shafted and triple powered, we will be using a two shaft and two-engine set-up to show the beginner how to control a simple two-engine layout.

## Diary Entries for HSL 128, Dec 41 & Jan 42

### 6 December, 1941 -

Call-out for HSL 128 for a bomber crew. The sea was very rough and nothing was seen. The distance covered was 141 miles in 6 hours 20 minutes. A second call-out for HSL 128, again nothing was seen. The distance covered on this trip was 22 miles in 2 hours 10 minutes.

### 13 December, 1941 -

HSL 128 was called out for a Hurricane running short of fuel but the pilot made it safely to the island. Launch recalled. Called out again for a Blenheim, which ditched close to Xrobb l'Ghagin. However a Maltese dghajsa beat the launch to the rescue. The aircrew were almost ashore, by then HSL 128 went to see if there was any chance of recovering the aircraft, which sank just as the launch came up to it!

### 30 January, 1942 -

HSL 128 was taken up the slip in her cradle and placed in the hangar to have her hull's copper sheathing removed. It was not long before it became apparent that the frequent air raid alerts were causing the work at Kalafrana to suffer. HSL 128 would not be available for action until 30 March, 1942.



RIGHT: An article on the new 'marinised' Sea Lion engine. Flight Global Archive. (www.flightglobal.com)

## Powerful motors

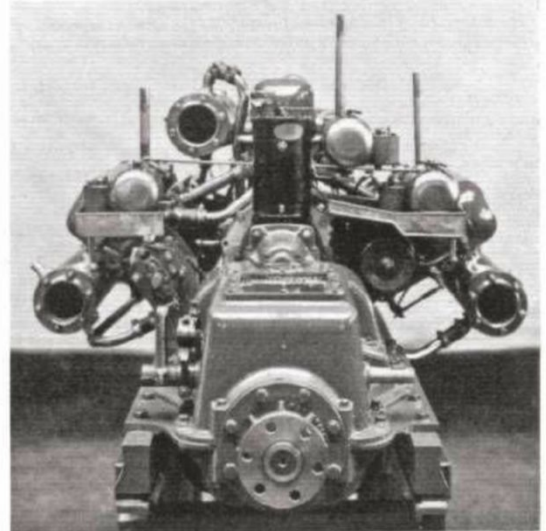
I am using traditional brushed motors (this model is easily suited to a brushless set up too) provided by Dean's Marine; these being the Kestrel V. They are a relatively compact motor that provide huge amounts of power for the size of the model. The Kestrel V motors are mounted on vac form-moulded mounts and the motors are held in place by tie-wraps. When trial fitting the motors and mounts, I have made up the multi-directional couplings which help guide the motors into place, the idea behind the coupling being that they allow some play in the system; sometimes you just can't get a 100% perfect inline propshaft to motor due to slight differences in the hull or mounts. I sat the motors in their mounts and marked out where the tie-wraps would pass through the plastic and the ideal position on the motor; I drilled and filed them to fit the tie-wraps. I fed the tie-wrap through the mount and slowly tightened it against the motor so that I couldn't get any more 'clicks' thus ensuring that the motor is correctly fitted to its mount. When both motors are attached to their mounts, I carried out a couple of dry fits in the hull just to check that the motors turned the prop-shafts smoothly and then it got messy! I mixed up a large batch of P38 car body filler and applied to the underside of the mounts and squished the mounts into the hull making sure that the pre-determined position is achieved. Allow the P38 to overflow slightly and spread it over the edge of the mount, which will seal it into place.

To control the motors, I am using a Dean's Marine 15amp electronic speed controller (ESC) with built in BEC (which means you do not require a battery pack for your Rx). You have to imagine that if the electric motors are the petrol Sea Lion engines, then the ESC's are the gearboxes. Differently to the real vessel, an ESC can control one or more electric motors so

## Napier "Lions" for Motor-Boats

A 500-h.p. engine with obvious potentialities for high-speed motor-boat work is the result of converting a Napier "Lion" aero engine. This development has been undertaken by Mr. H. Scott Paine, of the British Power Boat Co., of Hythe, Southampton, and the marine conversion is known as the "Power" "Sea Lion." It is the most powerful motor-boat engine produced on this side of the Atlantic. It is expected to accomplish 300 hr. without overhaul, and the alterations have resulted in an engine of much smaller dimensions than any known marine type which approaches the "Lion's" horse-power. A long series of experiments have preceded this achievement, which gives promise of the development of high-speed motor-boats for sporting purposes, and of boats for commercial work with moderate speed and high power. The size of the "Sea Lion" will also enable it to be installed in very small boats for racing; for its greatest length is 6 ft. 3 in., overall width 3 ft. 6 in., and height 2 ft. 10 in. As preparations have been made to convert a large number of "Lion" engines, it should be possible to market them at a price much lower than that of a new "Lion" aero engine, while the marine version will also be rather more economical than the aero type. During bench tests, when developing 518 h.p., its petrol consumption was 35 gallons per hr. The power-weight ratio is approximately 2.6 lb. per h.p. developed, and at 2,300 r.p.m. the engine yields 500 h.p. Arrangements have been decided upon for the production of the "Sea Lion" at three different ratings, the lower two being 400 and 425 h.p. respectively. There will thus be a change in compression ratios, with longer life. A great advantage over engines primarily designed for marine work is gained by the "Sea Lion" in its low power-weight ratio, while the design of its cylinder banks in the form of a broad arrow produces a very compact engine.

Among the alterations carried out is a clever arrangement of the manifolds for the main water cooling and the removal of a mass of water pipes from the cooling system, which contributes to the neatness of the marine engine. The cooling system employed results in fresh water being led into the manifolds through honeycomb tubes. When



An end view of the "Sea Lion." The way in which this conversion for marine use has been carried out makes it an extremely compact engine for its power.

the boat is moving salt water is drawn into the manifolds by means of an inlet and suction outlet at the side of the boat. When the boat is stationary a small pump is brought into operation which circulates just sufficient water to cool the "Sea Lion" without making it cold. This simplified system of cooling does away with a bulky pump depending upon high driving power. The "Lion" aero engine hand-starting arrangement—which is greatly in advance of marine engine hand-starting gear—is retained, and there is dual ignition. An interesting alteration is the extension of the crankshaft forward to the reverse gear, which lies in compact form close beside the main crankcase

in spite of a self-starter ring and flywheel having been added to the crankshaft. The self-starter is specially geared and has a Bendix drive, features which keep down the size and weight of the electric motor.

Another interesting point is the linking up of the two magnetos and three carburettors to one lever, with the result that the ignition is advanced as the carburettor throttles are opened. Nearly full advance is obtained when the throttles are just over quarter open.

Other dimensions of the "Power Sea Lion" are as follows:—The height from shaft centre to under side of reverse gearcase is 3½ in., which is an extraordinarily low clearance for an engine of this h.p. Forward from the shaft centre line to under side of crankcase is 1 ft. 1½ in. The weight is 1,295 lb.



A three-quarter view of the "Sea Lion" which gives a good idea of how accessible are the carburettors and other vital parts of the engine.

612

LEFT: The stern of a Whaleback clearly showing the three propellers, rudders and exhaust.

it can be wired up in different ways to achieve either dual or individual control. On this model, one ESC is being used to control two electric motors (see wiring diagram) and a 15amp fuse is included between the ESC and the motors to safeguard the ESC and Receiver (Rx) from overload. I use car fittings to connect my wires together as they are readily available from places like Halfords. I suggest getting a set of snips, wire strippers and some small screwdrivers when wiring your model as these will ease your time and trust me; you don't want to use a Stanley knife to strip your cables.

Before you permanently wire everything into the hull I always check the possible positions of the battery, ESC and Rx will actually reach everywhere, otherwise you may find that you'll struggle attaching everything together. I did discover (and I did guess at the time) that the servo lead was

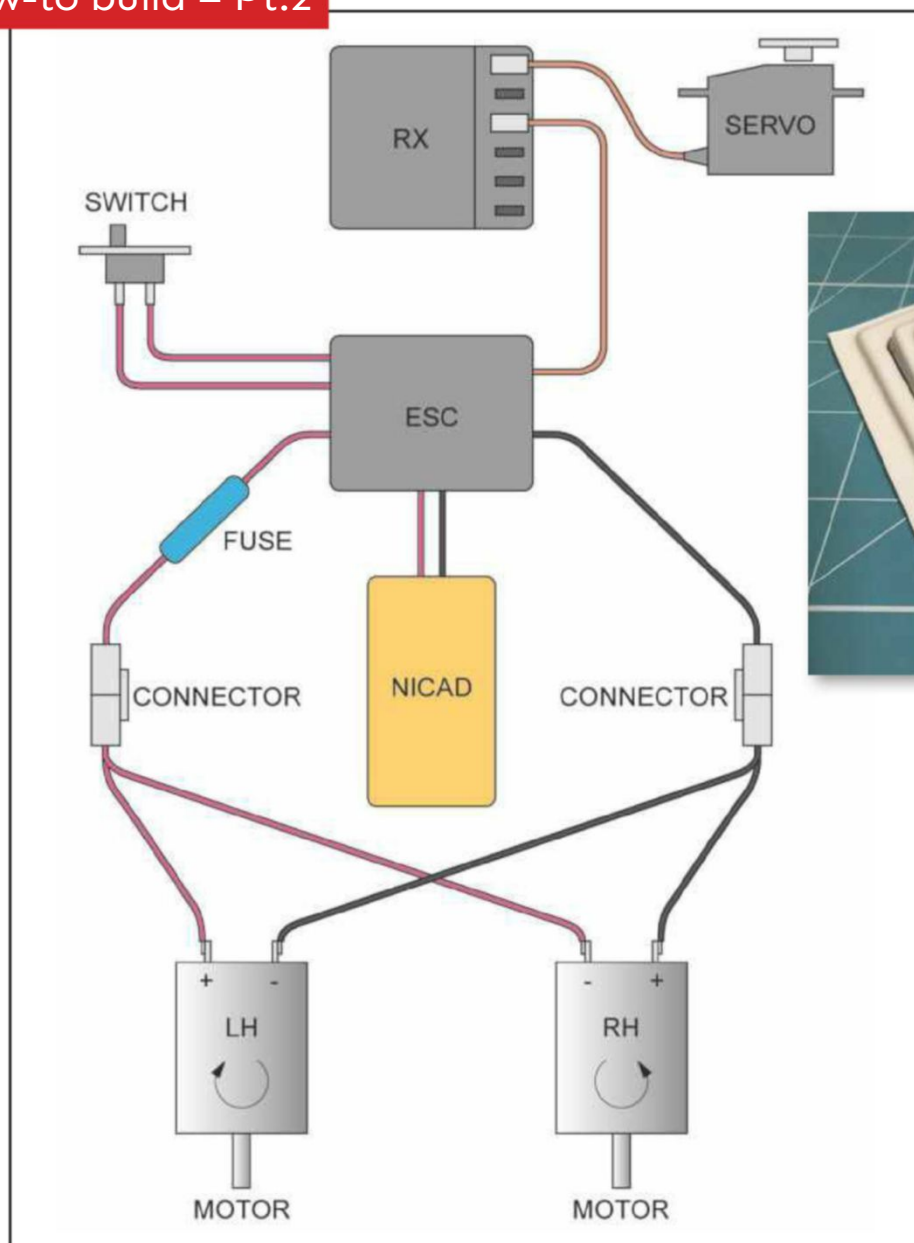


HSL 189 British Power Boat Company Whaleback

Image Sourced from Web

POSTED BMFT FORUM 2007 By D-ZINE





BELOW: The vac form motor-mount; simply cut along the black line to remove the excess material.



not long enough to reach the Rx but a quick visit to Component Shop and I had a 300mm extension on its way. I like to have a tidy setup in my models so I build a tray to house the ESCs and Rx, this will keep the radio components from moving around the hull when the model is underway; there is nothing worse than your model suddenly stopping on the lake for you only to discover your wiring wrapped around the prop-shaft, coupling or motor. My tray is a piece of 1/16in plywood and some spare sections of balsa to support it. I drew around the ESC and Rx and using some spare obechi from earlier in the build to construct a 'wall' around them.

So moving on...if the electric motors are the petrol engines and the ESC is a gearbox, then next we need fuel. The Sea Lion engine was powered by high-octane petrol similar to that used by the aircraft of the era. Obviously we can't use petrol with electric motors so we have NiCad batteries instead. There are vast amounts of NiCad's available and for the sake of getting everything from one place they were also purchased from Dean's Marine. I used a 3800mA, 5-cell battery with a Tamiya connector (the same style of connection used on the ESC). The battery tray included in the kit has the capacity for bigger batteries if required. On a final note regarding batteries, don't forget to buy a compatible charger!

## Steering the way

As far as I can tell, most fast motorboats used by the RAF were steered using a system of torque tubes, universal joints and cam gearboxes controlled by the boat's wheel. In modelling terms we can replace 90% of this complexity of shafts and gearboxes with a servo. Connected to this servo we have a servo arm, which converts the rotary motion of the servo gearbox in to a linear motion. This linear moving arm can then transfer that motion to the rudder tillers allowing them to move left and right, sorry, port and starboard! Regarding the tiller arms, I tried using the kit-supplied items but I wanted a stronger material so I used some commercially available plastic arms. I'm using a standard servo with a Futaba connection.

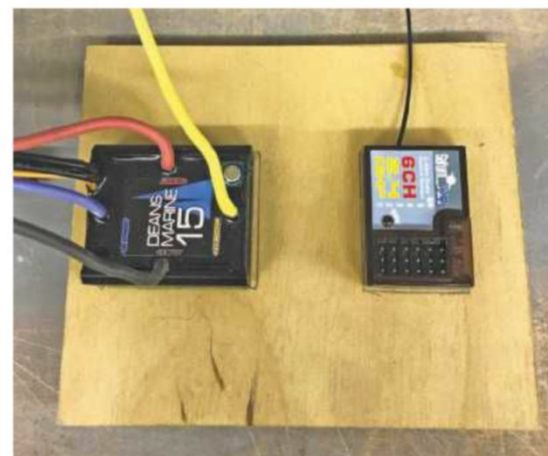
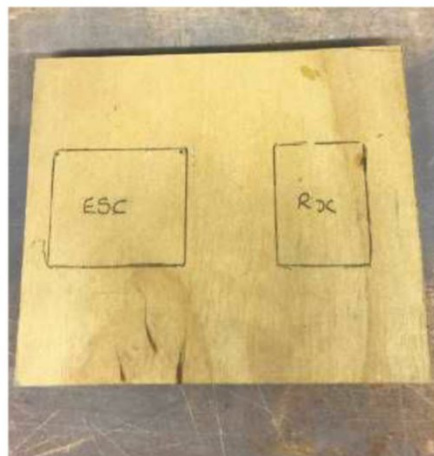


ABOVE: An electrical diagram showing the proposed layout for the RC equipment. BELOW: The basics required to power the model: motors, battery and ESC.





ABOVE LEFT: The components required to mount the motors in position: the mount, motor and the tie-wrap. ABOVE RIGHT: The motor on its mount; don't forget to cut the tie-wrap tag off to make it neat and tidy.



The bits and pieces I used to make my RC tray: 1/16in plywood and pieces of balsa.

The layout marked on the tray.

The ESC and Rx sitting in place, making sure that they fit comfortably.

For the beginners amongst us this is the lead, which plugs into the Rx and sends the power and signal to the servo. There are different types of connector, the most common being called either a Futaba or a HiTec. Essentially, the biggest difference visually (other than the name printed on the side!) is the colour of the signal wire (Futaba is white, HiTec is orange) and Futaba has a guide lug on the connection. They are both universal (the Futaba requires the guide lug trimming off to fit some Rx or extension leads) and I have used both over the years and I can't distinguish any noticeable differences.

This is where I differed to the recommended build by Dean's Marine but it's a personal thing; I always like access to my servo, it's probably the engineer in me liking to have failbacks and secondary back-up systems (the aircraft world is full of them!) and I wanted to move the servo to the centreline of the model to fit beneath a hatch I would adapt using the Plasticard piece No.32. Using this as my access outline, I positioned it on the deck using the plan as a guide and marked its shape with a pencil. I then drew out a slightly smaller version of No.32 and cut it out of the deck. This now gives an area to view and if necessary remove/refit the servo. No.32 is glued to the piece I cut out to act as a locator and can be kept in place by an interference fit

BELOW: Finally, the tray is in position and check that the equipment reaches all components. The servo lead was found to be too short at the stage and an extension was purchased.







*LEFT: The steering system: a servo, servo arms, rudders and tillers (these were replaced later with plastic items).*

*RIGHT: An example of the wiring and fittings attached together; this is the positive power line, the earth line is almost exactly the same but does not have the fuse.*

or you can use tacky wax to act as a sealer. The panel will rarely ever be removed and it is me being me, but I had one servo completely fail (later found out it was my fault!) and having access to replace the servo was a lot easier than working blind.

## The Coxswain

The Rx is controlled by the transmitter (Tx), which acts as the boat's wheel and engine throttle. I mention this now because to set up the servo you have to ensure that it is in the neutral position when you attach the arm to the servo. This ensures that when moving the rudder stick on the Tx you will have an equal amount of movement either side of 'rudders centred'. I am using a Saturn 2.4GHz Radio (which includes a Tx and a Rx) and is a pretty self-explanatory system therefore does not require the traditional crystal frequency control of older radio systems. To set-up the model so that the movements of the sticks on the Tx are reciprocated on the model, there are certain procedures to be followed which are explained very well in the R/C instructions. But essentially to start, you to need to bind your Rx to the Tx, then set-up the ESC and finally you can attach the servo arm to the servo as it automatically centres when

power is applied. Each radio channel can be reversed so if you discover that your rudders are turning opposite to the stick input you can switch them around again. The binding procedure means that the Tx is 'speaking' to the Rx and only that Rx. On old 27 and 40MHz radios it was possible to control somebody's model if they were on the same frequency. The ESC set-up is a little more complicated and involves telling the ESC the neutral, fully forward and fully reverse positions but sounds more complicated than it really is; you are essentially watching LEDs when you move the throttle stick on the Tx. The ESC will remember these positions after set-up, so

unless something catastrophic happens you shouldn't have to repeat this procedure again.

When it comes to which way the propellers turn it's a big debate within the model boat world and there are many opinions to which way is better (it also gets more complicated when different countries have different views on what is considered to be left or right turning props!). Anyway, I prefer (and it is my preference whether right or wrong!) that the propellers turn inwards, therefore you will need to ensure that the propellers are fitted to the correct shafts when viewed from the stern. You will soon find out if they are fitted oppositely when you run the motors for the



*LEFT: The 15 amp car fuse and the associated fittings to connect all the wiring together.*

*RIGHT: A step backwards to last month to show the structure supporting the re-located servo.*





first time on the water and the model screams away backwards! I am using Raboesch 35mm diameter brass propellers, one with left hand turning blades, the other with a right hand.

## Launch time

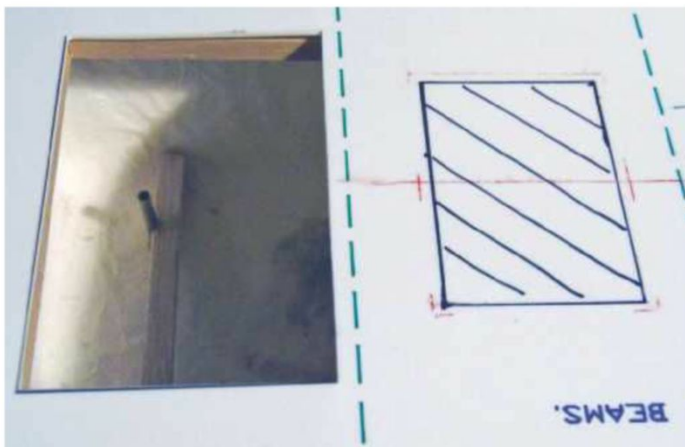
At the Dean's Marine Christmas Open Weekend I brought HSL 128 to the test pond for its first run. It's always natural to feel nervous on the first go and I was only doing the test to ensure everything worked properly before the next phase. Needless to say I was made more nervous by having our editor in attendance to watch and later to have a go! The model behaves itself and was not able to get up to full speed due to size of the pond but it did reveal that the twin rudders made it very manoeuvrable.

Next time... we will look into the cabin and the gun turrets.

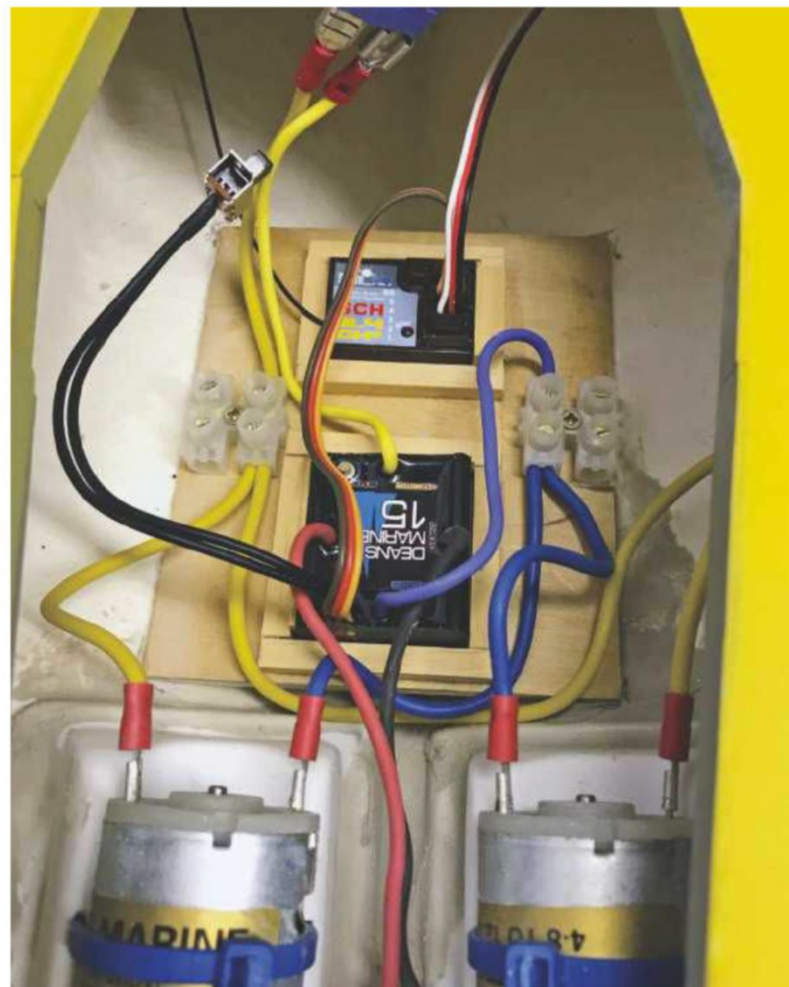
ABOVE: The test launch at Dean's Marine Christmas Weekend; the editor is not driving!



ABOVE: The Tx; in this case a Saturn XPR4 24GHz FHSS RC system.

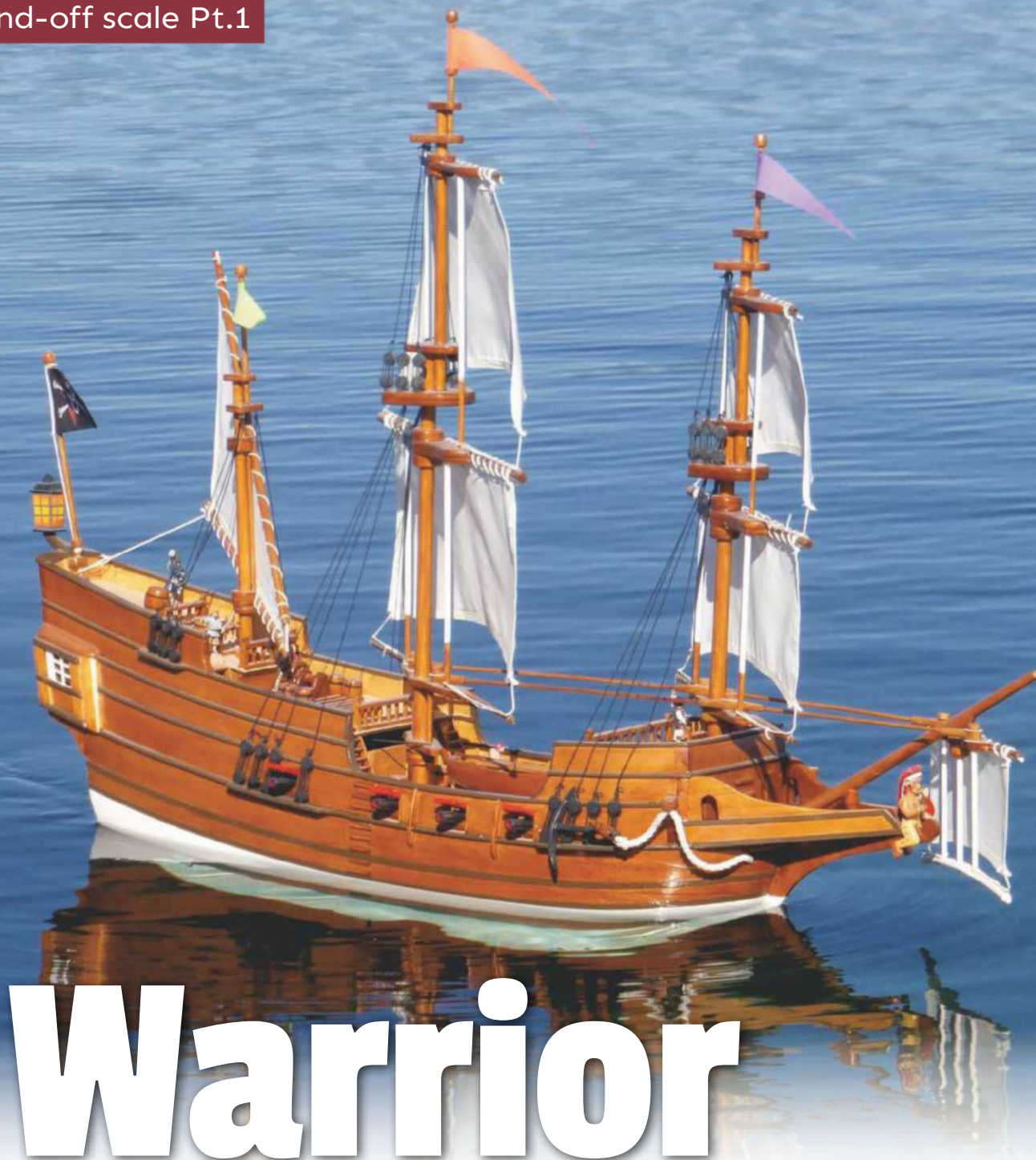


ABOVE: The deck in place and the 'new' access hatch is marked out: note the slightly smaller black line compared to the red line to allow an overlap. BELOW: The steering access hatches shown together, the white-metal tiller arms have been replaced with plastic items.



ABOVE: The completed layout looks a bit messy compared to the diagram, but this is one of the tidiest set-ups achievable.





# Warrior

## Barry Lalonde scratches a Golden-Hind-type 'Pirate Ship' (Part 1 of 2)

**T**he first time my Grandson asked me to make him a model boat, his request was for a Lifeboat and for the next one he asked me for a Pirate Ship. I had never done a Galleon before and was a bit daunted by the idea as I thought it would be a hard project to have a go at. So where do you start? It took me a while to think about the problem and then I remembered an article in the May 2015 issue of Model Boats about HMS Bounty that I had enjoyed reading. So, I looked up the magazine again and refreshed my memory and puzzled over the problems I might come across building a Pirate Ship. It was then that the subject grew on me and I decided to commit to having a go at one. I decided that I wanted an even simpler model than HMS

Bounty for my first attempt at a Galleon, but the article gave me a starting point and some of the ideas I thought would be useful along the way. So you expert galleon makers out there I will start by saying forgive me for any sins, I have never done one before!

### Requirements

I started to look things up on online and eventually I came across some line drawings for Sir Francis Drake's ship the Golden Hind, first launched in 1577 as the Pelican and renamed Golden Hind in 1578. The dimensions were length 102ft on deck and 20ft beam. This I thought was as simple as you could go. It had two main masts and two

square sails on each one plus the rear sail (the mizzen) on a shorter mast and the small sail slung underneath the bowsprit, so this was to be the basis of my model. The next step was to print off the drawing from the computer on to an A4 piece of paper; this then gave me a model 11cm long at the water line. The next question then was how long do I want it to be? The answer to that is usually, 'something that goes in your car boot without too much of a problem', so taking into consideration the overhangs of the bowsprit and the counter stern I decided that I would multiply everything by five giving me a model 55cm long at the waterline and a LOA of 85cm. Mast height was still reasonable and beam not a problem.

Using the back of a piece of wallpaper I drew in the waterline first as I like to work up and down from this line. Then, from my A4 drawing of the hull I multiplied everything by five and drew in the side view and also a plan view of the hull at its widest point. On this model it is just above the waterline. The beam



at main deck level and the higher decks at bow and stern are narrower.

The look of the model was to be stand-off scale while on the water. It was obvious to me that the keel needed to be deeper than the original. I wanted the leading edge to be as much as possible a gentle curve to hopefully stop weed getting trapped on it and to make it look comfortable on the eye; I would have a similar curve at the trailing edge of the keel. Another decision was the rudder, this being out of sight while on the water allowed me to have a large oversized balanced rudder and lead was to be used for ballast to go along the bottom edge of the keel. Another big decision is sail or boom control, this I wanted to be mechanical rather than by sheets, just my preference, as I had been aware that it is hard to control the bottom corners of the lower sail so I thought I would put in an extra boom to get over this problem. No, it is not the correct thing to do and not seen on Galleons of the time but I thought from a distance when on the water it would not stand out too much.

Another thing I wanted on this model was windows in the stern which were wrong for the period as I believe this idea was not developed until a later date.

### Construction of the hull

The first thing to do was purchase a pack of wood from my local DIY store; this consists of eight pieces and was enough to build the hull and all the fittings, so for approximately £15, a relatively inexpensive boat can be made.

On my drawing of the hull profile I drew in the levels of wood at 18mm intervals, the thickness of wood I was using, working up from the water line and down towards the keel, I just feel comfortable knowing at all times where the designed water line is expected to be. From my line drawing this gave me the width of the Golden Hind but I found that my wood allowed me to make the beam slightly larger when laying two pieces of wood side-by-side. In doing so, my thinking was that this would give me more buoyancy and would, I hope, make a sailing boat more resistant to leaning

1



2



3



over too much or capsizing and not really be a noticeable deviation from the look of the vessel (**Photo 1 & 2**).

I have made bread and butter style hulls before and for the first time I thought I would shape the two halves separately as I wanted to glue a keel between the two halves up to waterline level leaving a web across the centre of the hull for support. From the waterline upwards, I continued to build up the 18mm levels of wood to the main deck level, allowing extra height so as to shape in the curve of sheer line, the curve of the deck rising at the

bow and the stern. At this stage, the hull was in block form, this was then stuck together with Evo-Stick weatherproof wood glue leaving a gap for the upper parts of the keel leading to the bowsprit and rudder stock. It was now time to carve away the excess wood, finishing off by electric disc sanding and finally by hand to achieve the required shape. Although a Galleon looks an ungainly old fashion boat, from below the waterline, it is very much like many boats of today, a rounded bluff bow with a narrowing at the stern leading into the keel and rudder (**Photo 3 & 4**).

4







### Construction upwards from main deck

After the hull was shaped and the two halves stuck together with the keel in-between, the next thing was to carve the curve of the main deck from stern to stern and remove any excess wood from inside the boat. All parts of the keel were made from 6mm ply. Next came the shaping and fitting up the upper part of the keel, leading to the support for the bowsprit and rudder stern post. The stern post and top of the rudder is all fixed, only the rudder below the waterline was to move. The brass rudder tube was also fitted at this stage together with a short piece of tube for the bottom rudder bearing. The rudder is made from 6mm ply, the same as the keel and was epoxied to the brass rudder tube. Being a balanced rudder, one third was in front of the tube and two thirds behind. Next was fitting the bowsprit and cutting a slot into the dowel so as to straddle the keel making it very secure for whatever knocks the boat

might have. The main deck was made from hardboard and was next to go, on leaving it proud all the way around with extra width for the mast shrouds and a cut out at the stern to fit the radio control.

The next deck level consisting of bulwarks to the main deck and sides to the forecabin and stern upper decks were shaped and glued on to follow the curve of the deck and

made taller and thicker than was required, so as I could later carve them to the correct size. Gradually I carved the correct height followed by making the beam narrower. The higher the decks went and finally the bulwarks were carved internally so as to have the sides 5mm wide, then followed another layer of hardboard for the next deck level and so on until all the high stern decks were in place (**Photo 5-7**).

My attention then turned to the bowsprit support from the upper keel, the grating below the bowsprit and the side walls from the forecabin going forward; completing the forecabin with the deck, bulwark and capping rail. Integral with the forecabin was to build in the anchor support beam and



support. Gun ports were the next thing to be cut out, finishing off the main deck with a capping rail. The main mast and foremast was fitted through the main deck and in the same fashion were glued straddling the top of the keel again for a strong and a secure base.

The windows in the stern of the model were a bit ahead of it's time for the period but in my eyes that was what a Galleon should look like and were built between main deck level and the next deck up to try and fit in seamlessly with a bit of embellishment to make it look as if they belonged there. This was part built above the counter at the stern. The final upper deck rear section, was made removable to be secured with a screw disguised as a barrel on the deck. That completed the main structure of the boat (**Photo 8-11**).

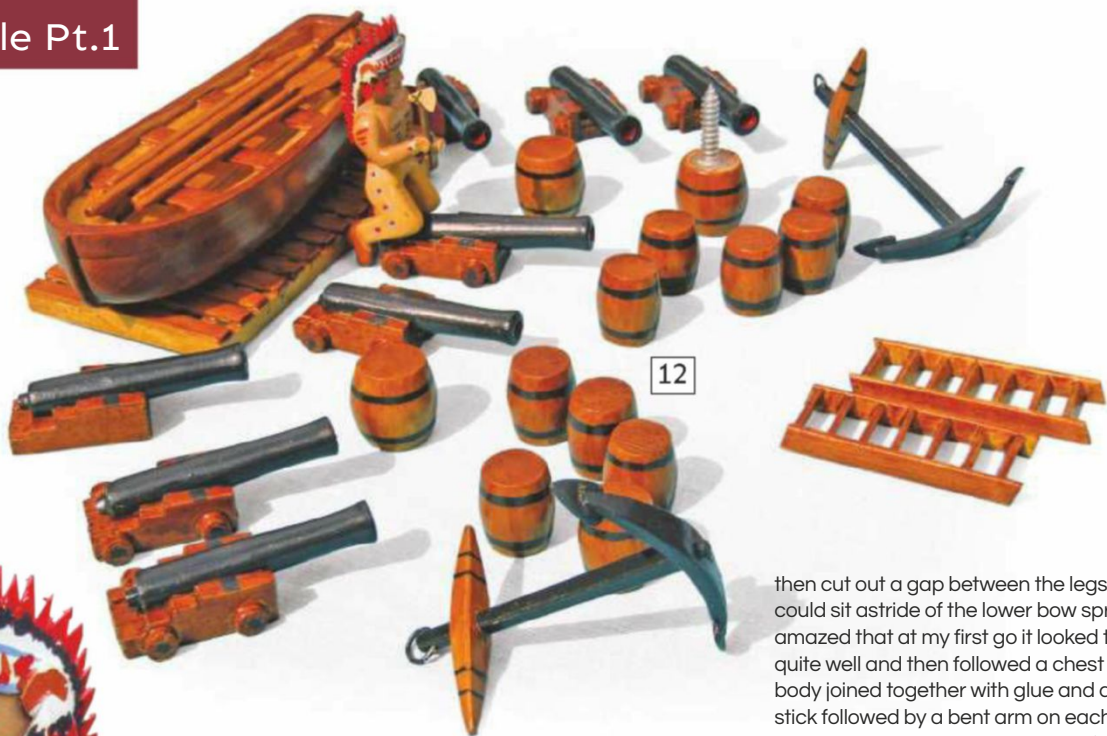
## Fittings

To follow was the enjoyable bit where I could play and make all the little fittings out of wood to truly turn it into a Galleon. The cannon barrels were made from shaped dowel mounted on carriages with wheels, a jig was made to help make the ladders and a number of barrels were carved in two different sizes to sit on the deck. Two anchors were made from wood with a ring in the stock from gardening wire bent around a drill bit. Three gratings and deck railings were made for each deck level. The ships boat were constructed with a piece of flat wood for the bottom and the next level had a rectangle cut out of the middle, then wood bulwarks fitted around this shaped block. This was then carved to shape, thwarts fitted, oars made and lengths of dowel for the masts completed the look.

Next was fitting rubbing strakes to the hull below main deck level, following the main deck curve. These were made from cornflake packets; this card comes in use a lot I find while modelling. Lastly the boarding steps up the outside of the hull. I find quite often you have to make more items than you need, some go wrong, break or are not quite the right size and just look odd when you try to







then cut out a gap between the legs so as it could sit astride of the lower bow sprit. I was amazed that at my first go it looked the part quite well and then followed a chest for the body joined together with glue and a cocktail stick followed by a bent arm on each side. Last thing to be made was a head and face; I was really stretching my skills now. I know this fellow does not look too handsome but somehow it lent itself to being an Indian warrior of the First Nations of the USA and Canada, so a hatchet in one hand, a shield in the other with Indian headdress completed the look. Maybe not quite the figure head I thought I would have, but it was something people would recognize and I had made it rather than buying it. It also gave me a name for the Pirate Ship of 'Chieftain' or 'Warrior' (Photo 13).

the glowing lantern and then masking off in different steps the glazing bars seem to make it come alive.

The figure head also requires a special mention. I intended to buy a cheap plastic toy to do that job but never seemed to get around to seriously looking for one, so one afternoon I thought I would have a quick go at making one. I wanted it to sit astride of the bowsprit lower support so sketched a side view of the waist, legs and feet and then cut them out. I

make a set. Gun port framing followed with the open gun port hatches. The steering wheel was I believe again not from the period of the Golden Hind but to me I just thought it should have one (Photo 12).

## Tools

A number of these wooden parts were very small and I was amazed that I could make them to this scale so it was a first for me and it was satisfying to add to my modelling skills. To lightly touch on the tools I use, nothing special, just the usual DIY stuff found in many tool boxes except for one that I could not do without. This is my 60-year-old treadle fretsaw made by 'Hobbies', it looks as if it has come out of the Ark but an invaluable tool for me. There may be many modern versions I have been tempted with over the years but I stick with it and is a firm favourite of mine.

## Lantern & figure head

The lantern fitted to the stern rail, I was particularly pleased with the way it had turned out. The lamp was made of just shaped pieces of wood, nothing too special there but by mixing red, orange and yellow for







# Massey Shaw

Fraser Gray takes us on board this beautifully restored fire boat



The Massey Shaw is a London Fire Brigade Fire Boat named in honour of the founder of the Metropolitan Fire Brigade, Eyre Massey Shaw. She has been designed to operate in the tidal waters of the River Thames; her flat hull allowing her to rest upright at low tide.

She has had a long and illustrious career on the River Thames. Massey Shaw has participated in significant events in our countries history. During the Second World War, the fireboat joined the 'Little Ships' in the Dunkirk evacuations, fought fires in the blitz and even played a part in the foundation of the National Health Service.

She crossed the English Channel as part of the flotilla of small ships to the shores of



## DATAFILE

|                |                                                                                                      |
|----------------|------------------------------------------------------------------------------------------------------|
| Type:          | London Fire Brigade Fire Boat                                                                        |
| Builder:       | J. Samuel White, Cowes, Isle of White                                                                |
| Completed:     | 1935                                                                                                 |
| Length:        | 78ft (24m)                                                                                           |
| Beam:          | 13ft 9in (4.19m)                                                                                     |
| Draught:       | 3ft 9in (1.14m)                                                                                      |
| Gross Tonnage: | 50.54 GT                                                                                             |
| Propulsion:    | Two 165bhp (123kW) Gleniffer DC8 Diesel engines                                                      |
| Speed:         | 12kts (14mph)                                                                                        |
| Complement:    | The Fireboat would have a crew of six but this could be increased to assist with firefighting duties |
| Flag:          | United Kingdom                                                                                       |





Dunkirk in Operation Dynamo, after the fall of France in 1940. Massey Shaw made three trips to the beaches, her small draught and flat hull allowed her to reach the shallows and rescue over 600 Allied troops, ferrying them to larger ships, anchored off

shore. After the war, Massey Shaw played herself in the 1958 film, 'Dunkirk'.

During the blitz, Massey Shaw fought the firestorms in London's docks and riverside warehouses. The fire boat can pump up to 1,500 gallons of water and project the water through the main 3in monitor and

various other monitors around the fireboat. The Massey Shaw helped save Wren's masterpiece St Paul's Cathedral from the flames. Destroyed by bombs, the city's water hydrants ran dry; the Fireboat pumped water

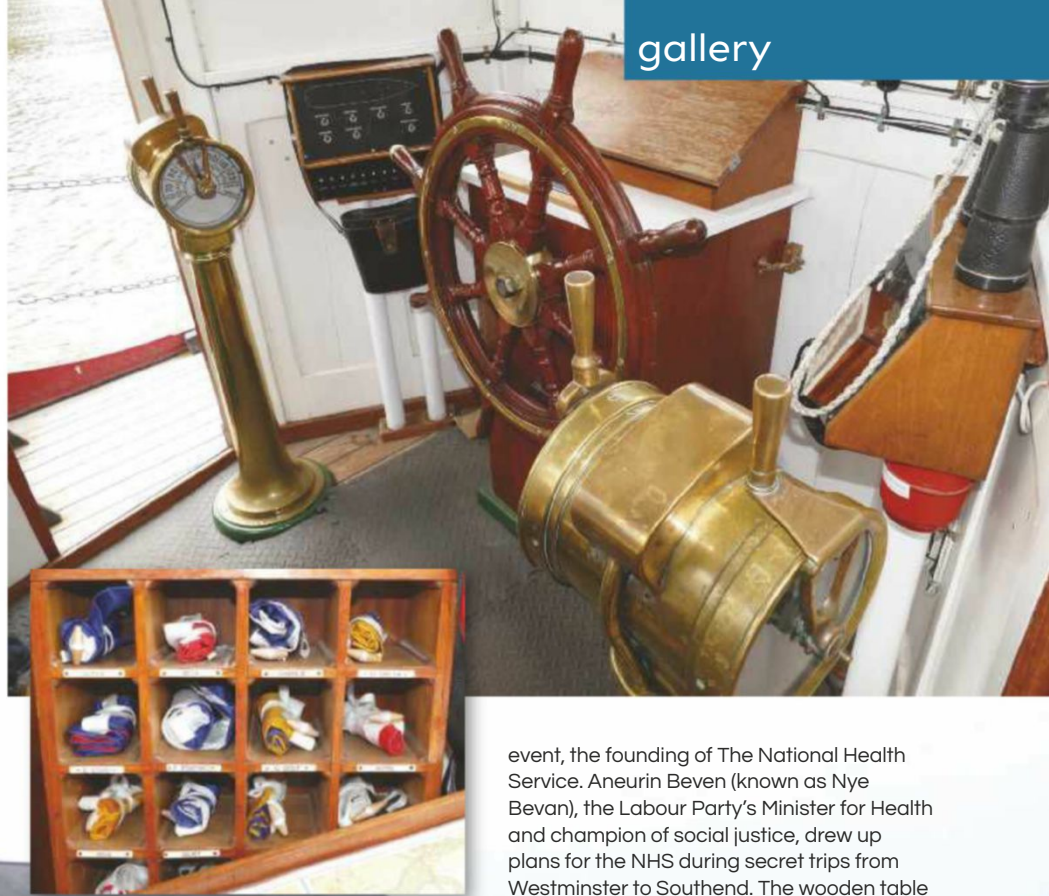






from the Thames to firemen ashore, allowing the fire brigade to control the firestorms raging around the cathedral.

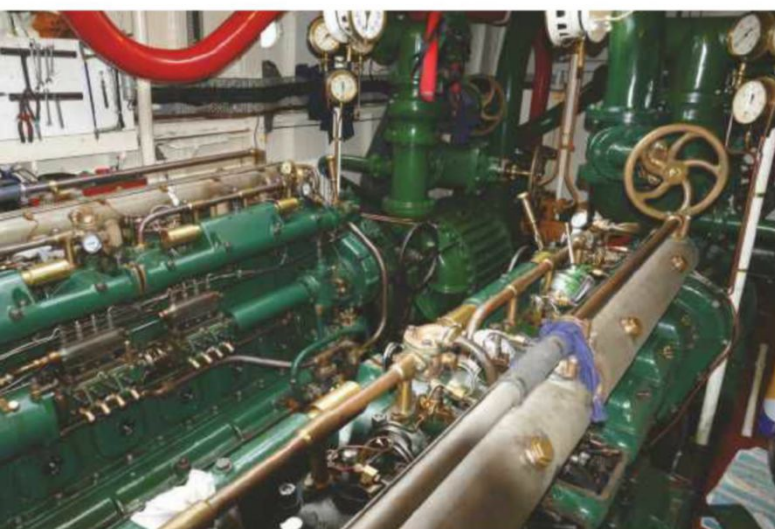
The Massey Shaw, having already secured her place in history during the war, participated in another significant



event, the founding of The National Health Service. Aneurin Bevan (known as Nye Bevan), the Labour Party's Minister for Health and champion of social justice, drew up plans for the NHS during secret trips from Westminster to Southend. The wooden table located in the stern cabin, can still be seen aboard the Fireboat today.







The Massey Shaw remained in service until 1976 until she was decommissioned and abandoned in St. Katherine's Dock. In a poor state of repair, a group of enthusiasts founded The Massey Shaw Fire Boat Society persuaded the London Fire Authority to contribute towards the restoration of the historic fire boat.

The Massey Shaw continues to serve on the River Thames, as a floating museum. Massey Shaw is the only vessel operating on the Thames today that continues to operate the telegraph system for communication between the wheel house and engine room. ●

All photos' credit Fraser Gray



The fee for this article will be donated to the Massey Shaw Educational Trust



# The Ketch-rigged Sloop *Speedwell* of 1752

## VOLUME I

By Greg Herbert and David Antscherl

**I**ntroducing volume I of *SPEEDWELL*, a ketch rigged sloop of 1752. Her rig was designed to be able to sail close to the wind to be able to go after her main prey, privateers and smugglers. She had light scantlings and was armed with 8 three pounders and 10 swivels.

She was a member of the Cruiser class and had a long life, being converted into a fire ship in 1779.

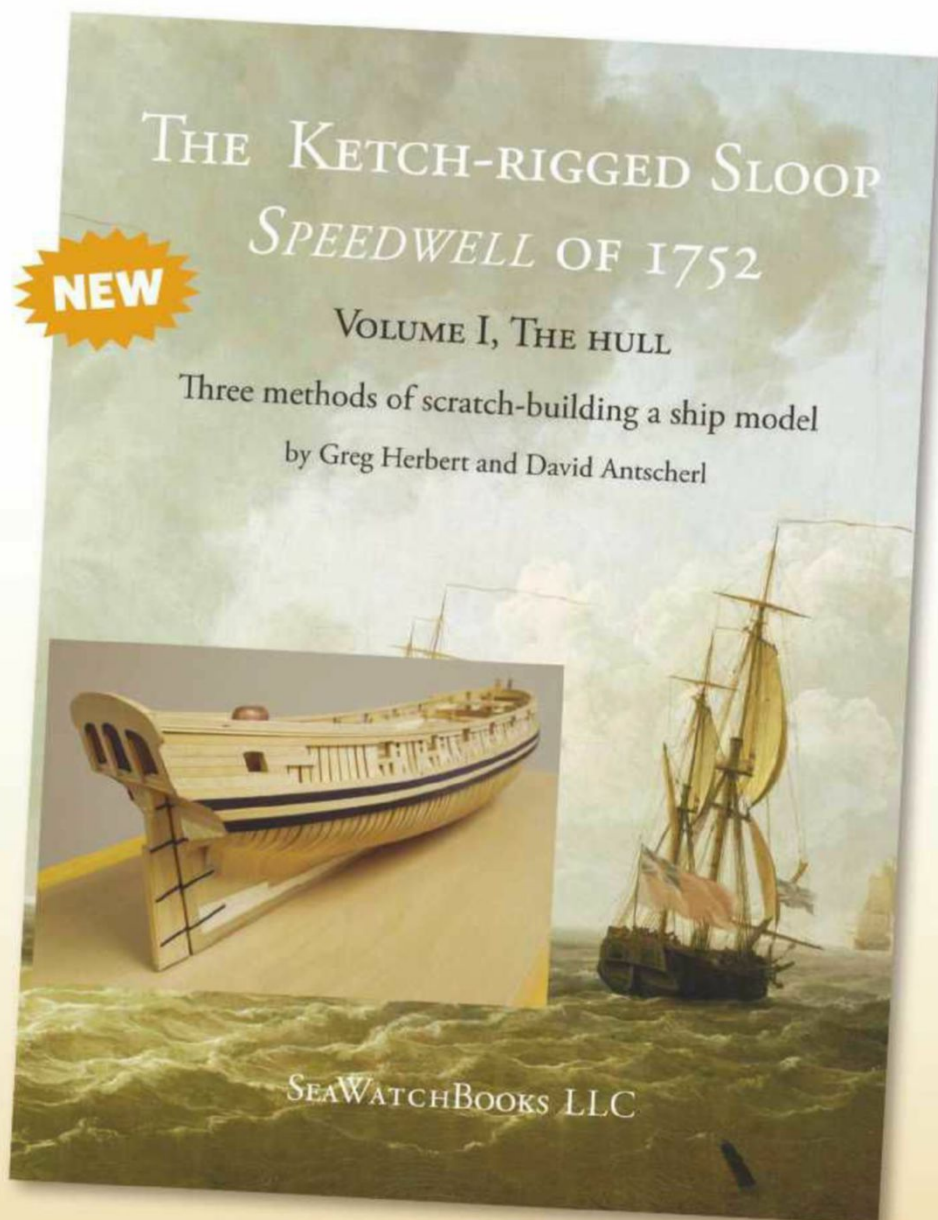
Greg Herbert and David Antscherl have teamed up again after their efforts in the very successful Swan series to produce a new series on *SPEEDWELL*. Book I will cover building the hull using three methods: plank on frame, plank on bulkhead and solid hull using the lift method.

The book is 8 1/2" x 11" format with 238 pages, bound in hard cover with a dust jacket. An eight page color section is included along with 5 sheets of plans.

Book II covering masting and rigging should be published in late 2019.

### FEATURES

- 8.5"x 11" format
- 238 pages
- Hard cover
- 8 page color section
- 5 sheets of plans



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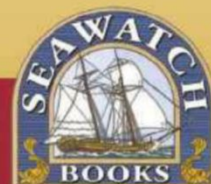
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# Boiler Room

## Burners, Part 2

A collection of thoughts on Model Steam Plants  
by **Richard Simpson**

If you remember last month we had a look at a few possibilities of fuel types that we might want to consider using in our boilers as well as what kind of burners you would then want to consider in conjunction with them. This month I just wanted to touch on a subject in a little bit more depth and certainly one which regularly seems to cause some challenges in the hobby and that is the subject of gas burners themselves. While gas may prove to be by far the most convenient fuel to use and certainly the cleanest there is perhaps a little bit more thought and involvement required to get the best and most efficient use of it. After all the fuel in the boat is a finite resource and so the more efficiently we use it the less it is going to cost us and the longer the boat will be able to remain out on the water. Consequently I thought a closer look at just what is involved in a gas burner might be useful.

### Types of gas burners

Firstly, let's just consider the three main types of gas burner that we might come across in our model boats. Interestingly however the three types only vary in the way they distribute the flame in the furnace, they all use the same basic philosophy to get the gas there, which we will look at later.

1: A typical twin poker burner arrangement in a John Hemmens Caton Boiler. Such burners actually require quite a bit of gas to run and are capable of getting a lot of heat into the boiler very quickly.

2: A twin poker burner with common manifold and conical fittings to ensure the gas holes are directed correctly.





1) Poker Burner - This type of burner is favoured by such manufacturers as John Hemmens and basically consists of a long tube with lots of small holes drilled along its uppermost surface. This ensures that the flame is evenly distributed along the length of the tube so, not surprisingly lends itself very neatly to being used in horizontal boilers, which do not have cross tubes. This arrangement then prevents us having to pump large quantities of heat into one end then relying on conduction and convection to carry the heat along the length of the boiler. Frequently arranged as a single poker, you might also find the poker burner in a double arrangement as on some of the larger Hemmens boilers, (**Photo 1**). One point worthy of note with this burner is the fact that the holes in the poker tubes must be pointing upwards towards the water space. If they are angled in any other direction you are wasting heat and run the risk of causing serious damage to other parts of the model. This is why these burners by John Hemmens are either fitted to the manifold with a conical fitting or a flexible hose to ensure that they can be correctly positioned, (**Photo 2**).

2) Ceramic Burner - In a ceramic burner the flame is distributed by allowing the gas and air mixture to enter the furnace via a porous ceramic disc, (**Photo 3**). This ensures that the flame is spread across the entire surface of the ceramic so works particularly well in vertical fire tube boilers where you want to ensure that the heat is travelling the length of all the tubes across the entire boiler diameter, (**Photo 4**), although they are also common in centre flue boilers with cross tubes, (**Photo 5**). Challenges with this type of burner may be experienced with age as the ceramic is extremely brittle and can break easily. Also the porous nature of the ceramic can lead to it becoming blocked if dirt or dust has been allowed to get to it or if it should ever become wet. On the plus side however the ceramic disc can be replaced as it can easily be cut



4: The internals of a vertical fire tube boiler contains a great number of tubes soldered to a top and bottom plate to give a very large surface area for heat exchange. These tubes go right across the entire boiler diameter.



5: A typical water tube arrangement where the tubes are soldered across the furnace space, usually in a displaced pattern to ensure all receive equal amounts of heat.



LEFT 3: Ceramic burners have been very common for many years however their condition should be checked regularly and any sign of damage requires immediate replacement.





6: The ceramic discs are easily replaceable and can even be trimmed to suit the size of your burner perfectly. They should be set in a high temperature sealant such as that supplied for fitting the rope seals around the doors of wood burning stoves.



7: Removing the poker tube reveals the jet unit, screwed into the holder. The jet size will be stamped on one of the flats in the form of a number. The larger the number, the bigger the jet diameter. Clean with warm soapy water and then compressed air, I would advise against the use of any mechanical tool.



8: The air holes on the twin poker burner. These are not an adjustable type with the optimum position of the jet being designed into the device to give the best performance. The holes must remain unobstructed in the model and adequate ventilation provided to allow the best flow of air.

and cemented in place with high temperature sealant, (**Photo 6**).

3) Disc Burners - For want of a better expression I have seen these burners referred to in a number of different ways however basically they replace the ceramic disc with a brass disc drilled with a lot of small holes, pretty much in the same way as the poker burner. There are also a variety of very similar burners supplied by Clevedon Steam who use a disc with larger diameter holes but which is backed by a metal gauze to evenly distribute and mix the gasses. These burners are all that bit more robust than the ceramic burners and should be far less prone to clogging up with particles as well as offering less resistance to the passage of the gas so it is easier to achieve larger flames. This makes them popular for water tube boilers where it might possibly be difficult to get a flame from a ceramic burner to travel the entire length of the furnace and a poker burner simply could not be inserted. On the downside large and hot flames use a lot more gas however other forms of control such as an attenuator valve or an electronic gas control valve should make the plant more manageable and the water tube arrangement will give you a responsive and efficient boiler.

## The basic process

Having first looked at the differences in the burners let's now look at the common process that they all achieve. The job of the burner is to mix the gas evaporated from the gas tank, stored in a liquid form, with the correct proportion of air to ensure complete and efficient combustion, then deliver it to one of the devices mentioned above to direct the flame to the parts required by the boiler.

First of all the gas is evaporated from the liquid state in the pressurised gas tank and let out of the tank by the isolation valve. The first point to remember here is the effects of gas cooling, as described on a number of occasions in previous Boiler Room articles. As the gas evaporates the tank cools and so the evaporation rate drops. This reduces the pressure of the evaporated gas and so consequently the amount of gas that the tank actually releases. The first thing we want to do is to control the amount of gas we are admitting to the burner so we put a very fine nozzle in the pipe to restrict the flow and carefully meter it. This is the nozzle, or jet. This is a replaceable item because on the one hand they can erode over time and so allow more gas than required or they can block with particles of dust and dirt and restrict the flow of gas. Either way affects the flow of gas. The jet can be seen in this poker gauge once the poker is unscrewed, (**Photo 7**). In this case the jet is fitted with a ceramic nozzle, which is supposed to resist erosion more than a standard brass drilling. The nozzle is actually only the hexagonal part at the end of the nozzle holder.

As we can see we are nowhere near the burner itself yet and already we have introduced variables from the evaporation





9: In the Pendle burner the air goes into the burner through slots cut around the burner holder. Again these slots must remain clear and unobstructed.

rate as well as potential variables from the condition of the jet. Next we want to mix this gas with exactly the correct proportion of air to ensure perfect combustion. This is where you will see some form of admitting atmospheric air into the gas flow from outside. On the Hemmens burner these are the large holes drilled into the end of the poker where you can see the nozzles again from a detail of the same shot, **(Photo 8)**. On the Pendle burner the air is admitted through fine slots cut into the burner body around the circumference of the brass holder, **(Photo 9)**. Sometimes you might find an adjustment whereby the air can be controlled in exactly the same way as the petrol torch has a rotating ring around the nozzle and the old school Bunsen burner had exactly the same arrangement around the same area. Sometimes the only adjustment is the position of the jet in the path of the incoming air, as was the case with the old Cheddar burners. By adjusting this position you vary the Venturi vacuum effect and so vary the amount of air being drawn in. By this point I hope it is becoming clear that the ability of the burner to achieve a perfect mix of gas and air is already becoming quite a challenge, simply as the gas supply could well be inconsistent.

Once the gas is mixed with hopefully somewhere around the right amount of air the mix is sent into one of the devices mentioned above to evenly distribute and mix it. On the other side of the poker, ceramic disc or brass disc is the flame. The flame will not travel back into the burner because a flame will never pass a gauze or a drilled disc, however, a great danger with ceramic discs is that, if they are broken and then still used, the flame can travel back along the gas path. This is why broken ceramics should never be used and should be replaced immediately and never fitted without a proper sealant.

## Challenges

Having a bit of an understanding of the process I hope it is now a bit clearer to see just where the challenges might lay. The first problem of course is varying gas pressure as a result of the gas cooling effect. As the pressure falls away and the gas supply gets less the flame becomes weak until such point as it goes out. All the remedies discussed in previous articles such as administering a bit of waste heat from such things as a common



10: It may be tempting to go for a big boiler with big burners to drive a big engine. Burners such as these need a lot of gas and a small gas bottle which will cool very quickly will be counter-productive within minutes of operation. Sometimes a smaller boiler might be better or even just a smaller burner.

brass base for the gas tank and the boiler work well but thinking a bit deeper about this issue should make us realise that using a very large burner with a small gas tank is going to greatly accelerate this process and make it much more of a challenge. Consequently use larger gas tanks that do not cool as quickly, change tanks before putting the boat on the water, use hot water for boiler feed and fit some form of gas control device such as an attenuator.

Moving along the jet must be clean and must be of the correct size. Too large and you will be wasting gas as well as generating soot on the boiler surfaces if insufficient air is getting into the mix, too small and the flame might become unreliable and not hot enough to do its job. Next along the quantity of air admitted must be correct so making adjustments for the already mentioned variable conditions would be so much easier if the variable conditions were stabilised in some way. Then get the amount of air correct and the flame should be stable and hot. I sometimes feel that getting a model burner to work correctly is a bit like building a card pyramid. Lose one card and the whole lot falls down. Add to this, changes in ambient temperature, pressure and humidity and it is easy to see why some modellers give up. A little bit of understanding however of the basic processes and how we can make changes to stabilise things makes a huge difference and goes a very long way towards making things much more reliable and enjoyable.

## A real world example

Just to go through a particular example I have been involved with recently. After having lengthy discussions with the owner and the boiler manufacturer after the boiler was returned for investigation for poor performance issues one thing that was concerning was the heat damage seen at the burner. Initial thinking was too much heat however what transpired was the fact that the flame was actually getting too close to the burner surface as a result of reducing gas pressure. This was happening because it was a relatively large burner being fed from a relatively small gas tank. The cooling effect was reducing gas supply, the flame was getting too close to the burner and damaging it and the boiler was not performing because there was insufficient heat going into it. Using a fresh gas tank in the workshop immediately showed there was nothing wrong with the boiler. Solutions such as changing gas tanks regularly, use larger gas tanks, fit an attenuator valve and get some waste heat into the tank will all help to rectify it. So while sometimes it might be tempting to want to buy the largest boiler you can squeeze into your boat you must always remember that large burners, **(Photo 10)**, require adequate supplies of gas and gas cooling might just be an issue a lot more than you would experience with a smaller boiler, particularly if you are using small gas tanks. Do not forget you do not necessarily require a bigger boiler to drive a bigger engine.



# Modes Matter

Getting the most out of your transmitter by **Glynn Guest**

**M**y radio controlled modelling started in the last days of Single Channel and the beginning of Digital Proportional gear. I'll confess to missing out on the valve and multi-channel reed RC outfit period and

also, despite the nostalgia some profess to have for such items, not regretting it at all. All transistorized and being able to plug together then switch on and go was good enough for me!

## Early days

The first proportional RC outfits seemed like a great advance on what was previously available. Being able to control a servo in both the direction and amount of travel by simply moving a stick on the transmitter seemed like magic and a welcome improvement on the sometimes (occasionally more often than not) 'hit and miss' operation previously experienced.

Even with these wonderful RC outfits you could still encounter a problem or two. A common one was when a servo operated in the opposite direction to that required. This led to either modifying the linkage to reverse the action or buying a servo that moved in the opposite way. The introduction of 'servo reversing switches' on transmitters, at first only on up-market makes and then trickling down to the most basic models, was a welcome feature.

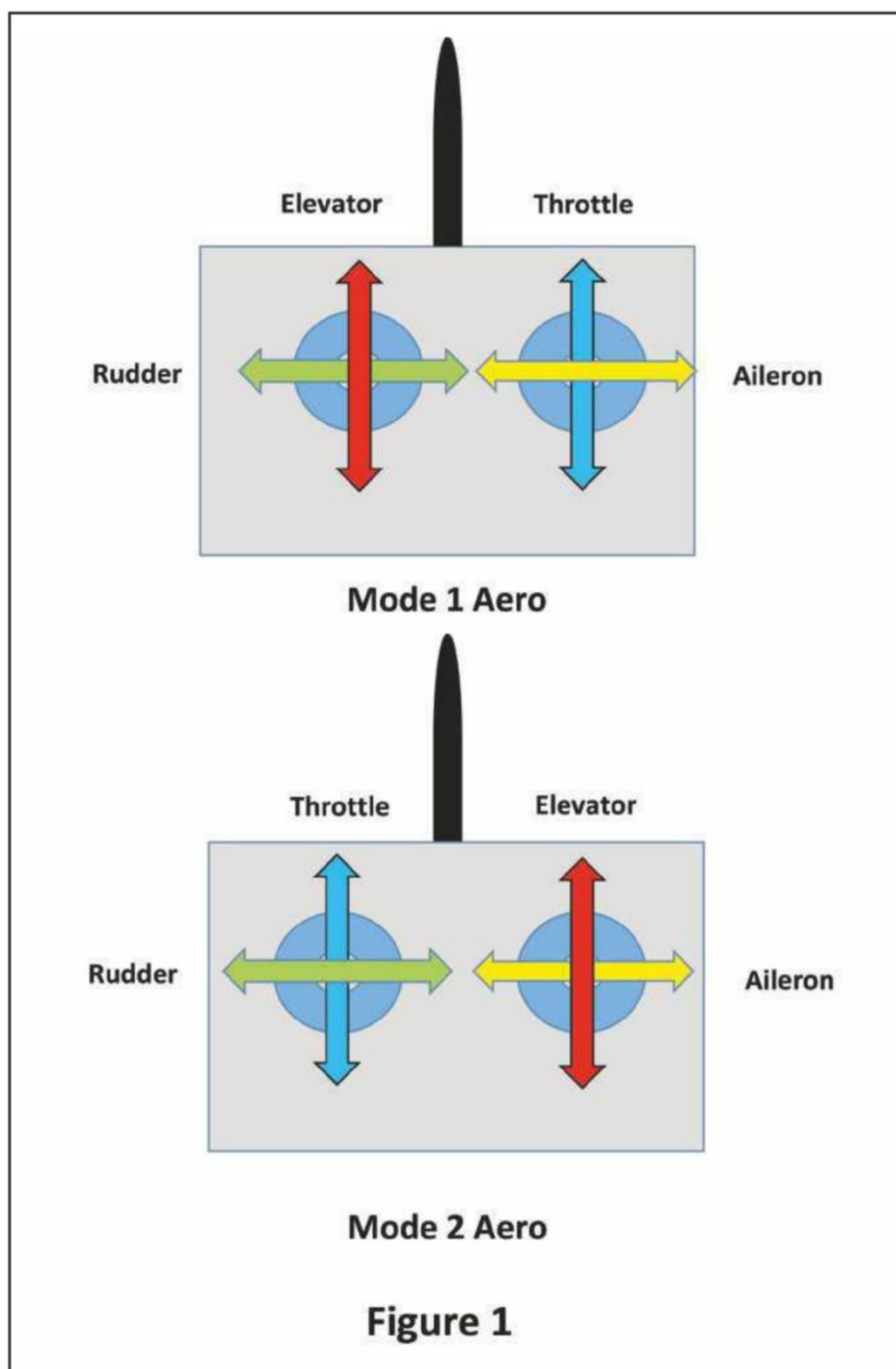
Likewise, the servos travel might not match the desired function in a model. Again, playing with the linkage geometry could sort out this problem but being able to adjust the throw of a servo from the transmitter and the 'Dual Rates' feature, were another blessing from the makers of RC gear.

These functions were all added using clever design and some basic electric circuitry inside the transmitter's case. Like most things, the solutions were obvious but only when you have seen them. This must be the case as I figured out how to add them to transmitters which lacked servo reversing and/or dual rates and they still worked!

## Even cleverer stuff

The RC aircraft guys had been able to fly Delta-winged models by with 'Elevon' control by physically mixing the movement of two servos together. This could involve both servos connected to a mechanical mixer or one servo connected to the control surfaces whilst the other servo slid it forwards or backwards. Both methods worked but took time to install and adjust for reliable action. Imagine the delight when manufacturers of RC gear offered 'Elevon Mixing' built into the transmitters.

Now you just connected a single servo to one surface at the trailing edge on one side of a delta wing and repeat on the other side. When the elevator stick on the transmitter was moved then the servos worked together to raise or lower both control surfaces and make the model climb or dive. Moving the transmitter's aileron stick made the servos move the surfaces in the opposite directions to cause the model to roll; much, much simpler than the previous methods.





## Wet application

It was not too long before it became obvious that this Elevon mixing could be applied to a model boat. If the servos could be replaced by two ESC's (Electronic Speed Controller's) each driving its own electric motor, then you had the ability to drive and steer the model without needing a rudder. What had been the elevator stick movement on the transmitter would now turn the motors in the same direction and produce variable speed ahead or astern in the model. Moving the aileron stick gave a progressive speeding up and slowing down of the motors to create a turning effect and thus steer the model. Moving this stick but leaving the other stick alone would have one motor running ahead and the other astern thus allowing the model to rotate with no net forward or backwards movement.

Some degree of tuning might be needed before the motors did exactly what you wanted. This was usually a simple matter of reversing the motor connections, possibly using the transmitter's servo reversing function, and maybe swapping over the ESC plugs in the receiver sockets.

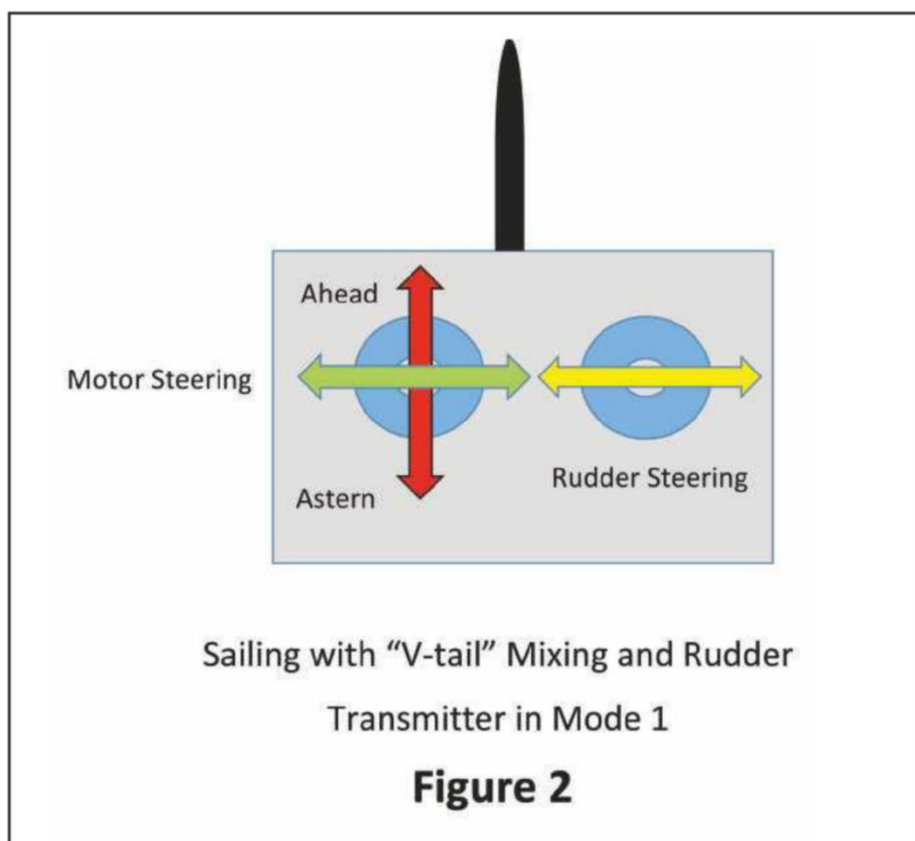
## Damn aero modellers!

The use of a transmitter's Elevon function sounds ideal and would be except that most RC gear is designed for our flying cousins and a lot of them seem to use 'Mode 2'. In this system the right-hand dual axis stick is used in the manner of an aircraft's joystick. That is up and down stick movement for the elevator function and right-left for the ailerons, **Fig 1**. For anyone brought up using two separate sticks for driving a model boat around the pond, using this method of control could and was for me, very confusing especially during emergencies!

Now if the transmitter was in 'Mode 1' the aileron and elevator functions would match the stick positions us boaters usually expect for rudder and motor controls. So using Mode 1 and Elevon mixing, plugging the ESC's into the receiver's aileron and elevator sockets would produce the transmitter control layout most of us are familiar with. So, if your transmitter is in Mode 1 or capable of being converted from Mode 2 then this plus Elevon mixing will give you motor steering.

## 'TOM control'

Whilst I have personally found the Elevon mixing method to be very effective with slower models such as push tugs and paddle ships it was harder to keep faster models on a constant heading. This becoming worse if the model was being sailed at some distance away from me, well it always seems to be a shame not to use all the lake as opposed to sailing up and down in front of the landing stage. As a result such models would often follow an irregular course with the occasional unplanned 360° turn!



This was one of those little problems that were left to simmer away in the back of my mind. When, without too much conscious effort on my part, a solution appeared. Many transmitters also have a 'V-tail' mixing function which combines rudder and elevator functions. If the transmitter were in Mode 1, then 'V-tail' mix would enable the ESC's to be plugged into the receiver's elevator and rudder sockets, then the model's rudder servo plugged into the aileron socket, **Fig 2**.

This means that the model can be sailed conventionally with the rudder controlled by the horizontal movement of the right-hand stick and both motors work together with the vertical movement of the left-hand stick. The cunning part is that any horizontal movement of the left-hand stick will produce differential motor speed. That is if moving ahead or astern, one motor will speed up and the other slow down. If the model is stationary then moving this stick horizontally makes the motors turn in opposite directions.

This method was first tested on the bench using servos rather than ESC's and motors. Transferring the idea into a model was a little harder and it took a little extra effort with the transmitter trims to ensure that both motors worked in harmony. At first one motor or the other would start turning before the other but after a session of nudging the trims (along with the odd muttered oath) synchronicity was achieved. And a useful tip at this point, if your transmitter has a Model Memory it might be worth saving these settings rather than have to repeat this process.

Not wanting to always describe this method as Transmitter in Mode 1, V-tail mix, and so on.... I came up with the acronym 'TOM' which stands for Together Or Mixed which seems to fairly describe how the twin motors operate.

## Other uses

Once you start reading these transmitter instruction booklets, thinking about how to apply it to model boats and experimenting, then ideas do seem to tumble out. I have used transmitter mixing to create a 'Kitchen Rudder' system in a simple steam powered model. The steam engine was a single cylinder type and had to run at full speed all the time. This returned my RC sailing back to the level of single channel rudder only (i.e. no speed control). The model was hardly a high speed one but you could never take your eyes off it, or more correctly being conscious of where it was going, for a second.

With some suitable transmitter mixing using two servos to control two separate rudders, it was possible to slow the model, bring it to a halt and even, admittedly reluctantly move astern, without the motor stopping. I'll confess that the steering response could be 'odd' at some rudder positions but it was way better than the original set-up.

So, give internal transmitter mixing a try. It might surprise you and produce the perfect and logical way to control your models. ●



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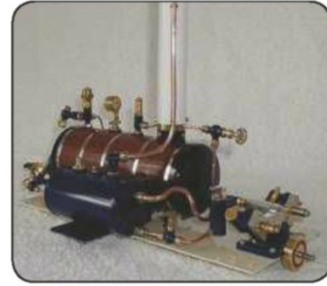


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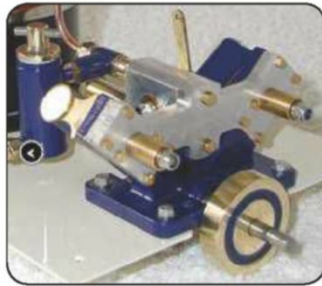
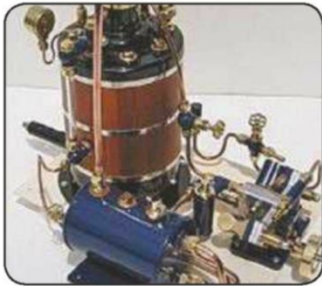
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1



# James P. Woods

A typical US harbour-type tug by **Dermot Curnyn** (Part 1 of 5)

**T**ugs are absolutely my favourite type of boat. I have built several over the years and building a model tug in the style of those found in US harbour waters at the turn of the 20<sup>th</sup> Century has been on my 'wish list' for some time.

The sweeping lines and pronounced deck sheer as well as the tall 'smokestack' and pilot house are unique features which set these vessels apart from their European rivals. I wanted to produce a model which incorporated all of these charming characteristics (**Photo 1**).

## Research

My research involved finding as many images and accounts of US harbour tugs as I could, from many sources, mostly on the internet (**Photo 2**). I put together a sort of database of the most common and attractive features, gradually distilling my thoughts down through a series of sketches into a final hull shape and superstructure that I was satisfied with.

## Skip the plans

The planning of any model making project is important. Traditionally the first steps involve the production of a set of working drawings. I chose a different path.

As my tug was going to be a representational interpretation of its type



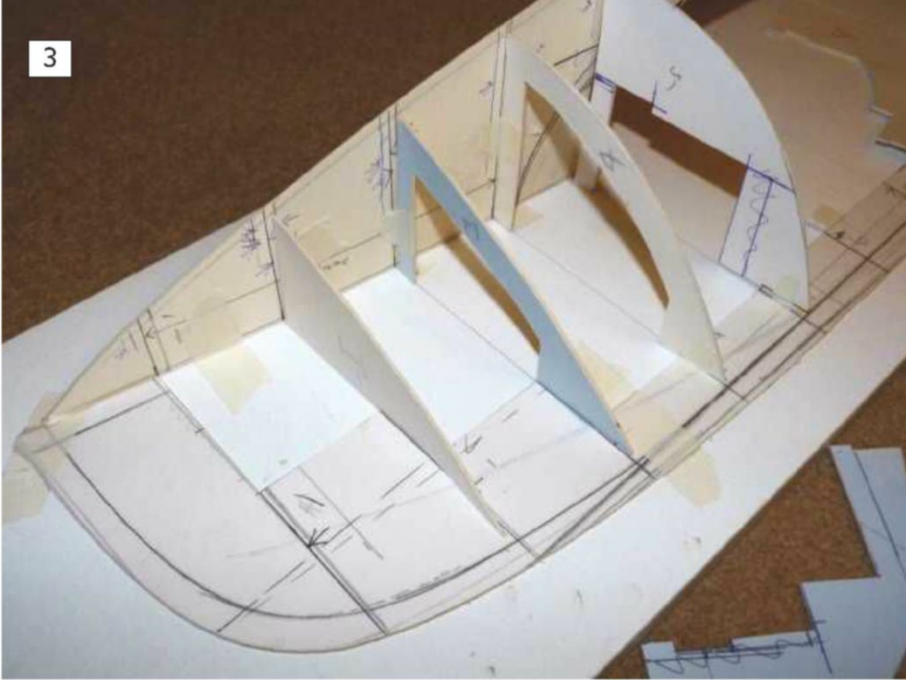
rather than a scale model of an existing boat, I set about constructing a mock-up of the hull framework in mounting card first, to determine the true shape of the hull and provide templates which would contribute to the production of an accurate set of plans. This would ensure that construction could continue in wood without any major compromises or unnecessary additional expense.

## Materials and construction method

In recent years I've dabbled with new technologies like laser cutting but for this modelling project I was determined to return to basic principles and choose a straightforward method of construction and materials which could be fashioned easily using only hand tools.



3



To recreate the deck sheer characteristic of these vessels, I opted to build the hull in two halves divided down the centre of the keel and use a plank on balsa frame method of construction. This method is reminiscent of the style of the old keilkratt model aircraft kits.

If I had used the more common inverted full-frame method, it might have been necessary to construct a jig and extend the frames beyond the deck line down onto the baseboard. Using such a method and building the hull upside down, continually squinting awkwardly to see if things were well aligned during the build, was not appealing.

Building the hull up in two halves with a reasonably large number of frames, firmly attached to a baseboard would provide a rigid framework and reduce the likelihood of distortion while planking. It would also ensure that both side of the boat were absolutely identical.

I figured that a balsa framed hull would easily take the stresses of planking if I built the model to a reasonably large scale and chose a harder grade of tight grained balsa for the frames and a softer grade of balsa for the planks. It would also be relatively easy to cut out the frames using hand tools and a final glass fibre skin on the completed hull would ensure a strong shell.

## Prototype

Having settled on a scale of 1/35, I produced many sketches of various shapes and sizes and after several unsatisfactory attempts, arrived at a keel profile I was happy with. In keeping with the chosen scale, this turned out to be 890mm in length (around 31m (100ft) at full size) and a beam of 235mm.

I traced and cut out the keel profile from 1.5mm thick mounting card, incorporating the position of the prop shaft and rudder.

I similarly traced and cut out the shape of the 'half' deck from card and secured this in place against the keel profile with masking tape. I used this assembly to work out the shape and number of frames that I would need to construct a sturdy hull and marked their positions accordingly.

I cut a set of half frames from mounting card in the same fashion as the Keel profile. These were assembled and held in position with

masking tape on to a length of 250mm wide melamine covered shelf board (**Photo 3**).

I was then able to view the compound curvature of the hull and add frames or adjust frames, trimming them to ensure a smooth transition of the planking from the vertical bow to the rounded stern. I cut some strips of thinner card to the 10mm width of the planking and set these against the frame set-up to gauge the curvature.

This was all very much a trial and error process which took several weeks of experimentation until I was satisfied with the size, shape and proportions of the hull.

I marked out the position of the motor mount where it cut through the frames and likewise made space for a shelf for the battery and radio gear. Providing a wide deck opening gave good, clear access to the inner workings.

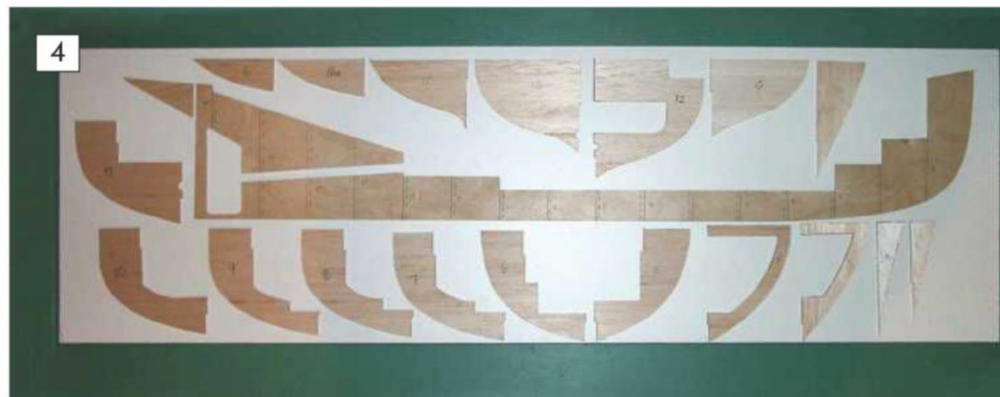
## Beginning the build

Rather than produce a full set of drawings at this stage I used the card half frames as templates and traced and cut the hull frames from 3mm 'hard' balsa. This would give a really sturdy framework once the deck was attached, hopefully less prone to frame breakage during planking. Duplicates were made of these half frames. So that construction of the mirror half could proceed in tandem on separate building boards (**Photo 4**).

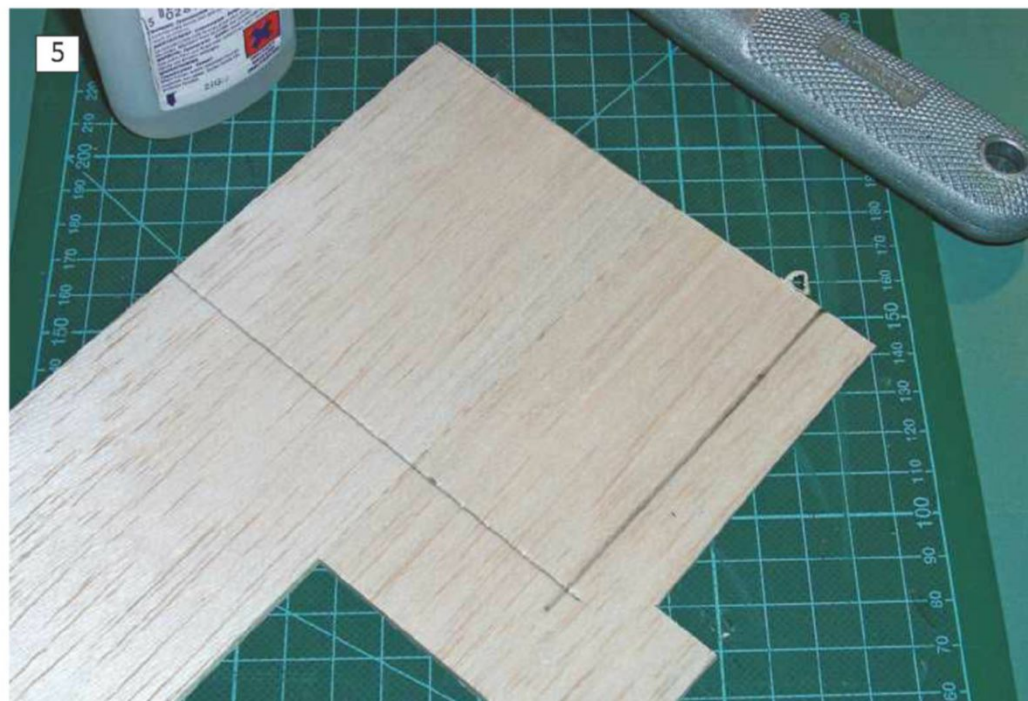
Using a sharp fine pointed craft knife, the centre was removed from several of the mid-ship frames. This was probably the most delicate part of the hull build and a few mistakes were made, but breaks and cracks were easily remedied with superglue, giving in most cases a joint stronger than the original wood.

In fact to save on wastage, I butt joined off-cuts of balsa sheet with superglue, taking care not to stick them to the cutting mat. This provided sheets large enough to cut more frames from (**Photo 5**).

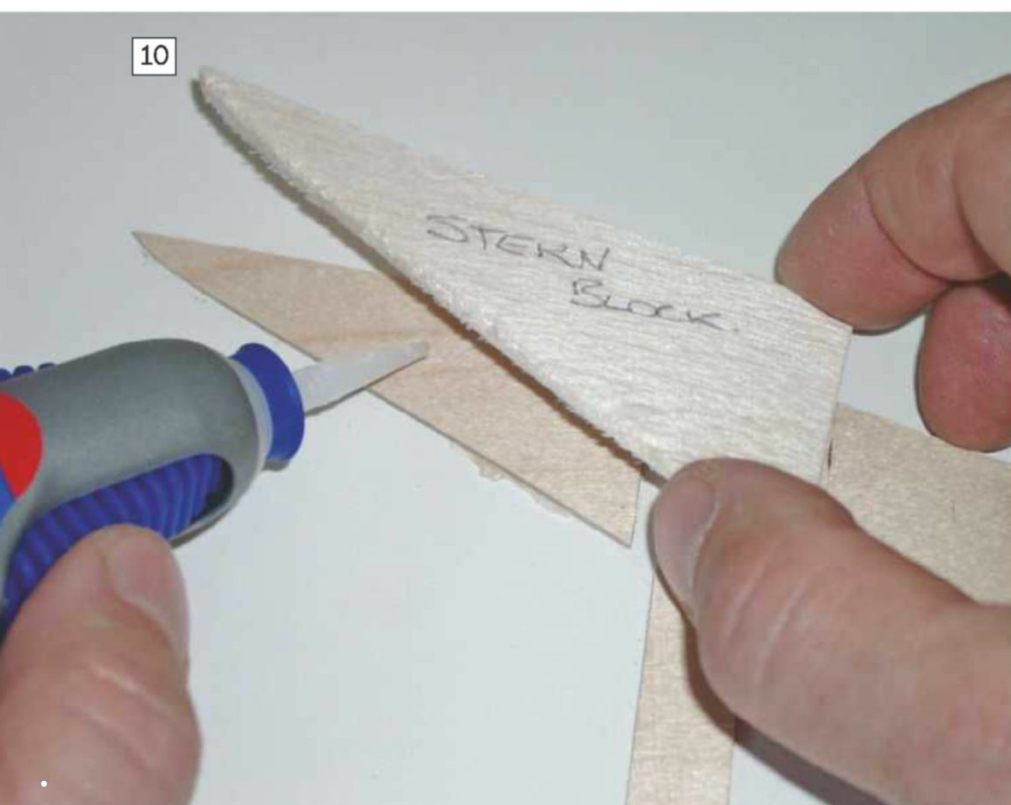
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## Hull profiles

The hull profile which would form the keel was transferred from the previously cut card templates, to 1.0mm birch ply and cut out using a fresh blade in a 'Stanley' type knife.

A duplicate was made of the hull profile and the two profiles were then placed keel to keel on a flat surface and held in position with masking tape so pencil guide lines showing the frame positions could be added (Photo 6).

Next the two profiles were taped together and guide holes were drilled inside the outline of the prop area with a 2mm drill bit. The excess wood was carefully cut away with a safe 'Stanley'-type knife and steel rule. The radiused corners were smoothed off with fine sand paper wrapped around a piece of dowel. This would ensure accurate alignment of the openings when the hull halves were eventually bonded together (Photo 7).

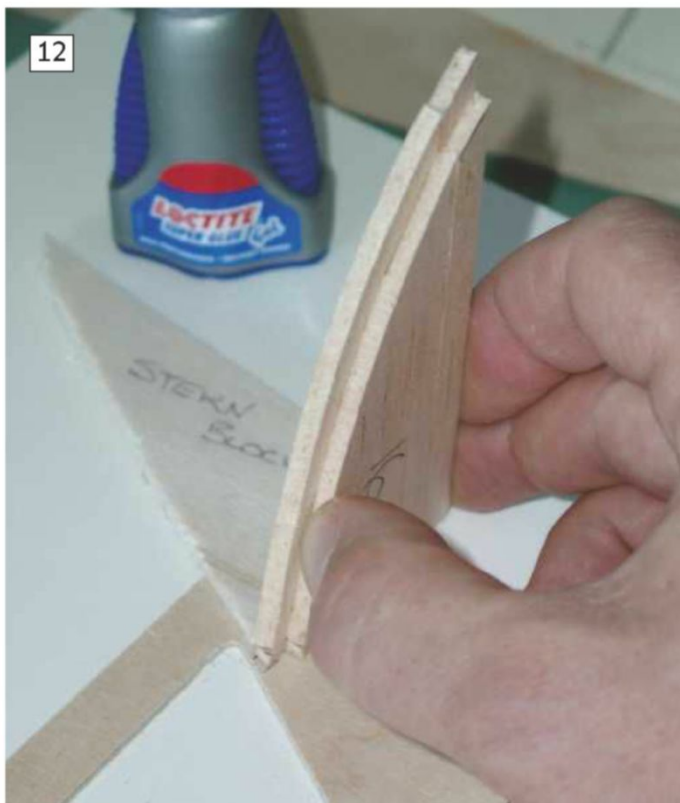
## Beginning assembly

I used a thin application of Copydex evenly spread over the underside of the ply hull profile to hold it firmly in place on the building board and weighted this down with some heavy books. It took a while for the Copydex to set but it held throughout the build and prevented distortion while planking the hull frames. It also made it relatively easy to remove the half



hull from the board after planking had been completed. The hull profile could have been secured with masking tape but I think the Copydex method gave better grip along the entire length of the hull (**Photo 8**).

The piece of ply cut away for the rudder shaft channel was used as a spacer between the main keel profile and the smaller stern piece. This was removed once the Copydex had set hard leaving a gap for the rudder shaft. Another laminate board was placed on top and weighed down with books then left for three days to allow the Copydex to fully set (**Photo 9**).



### Frame assembly

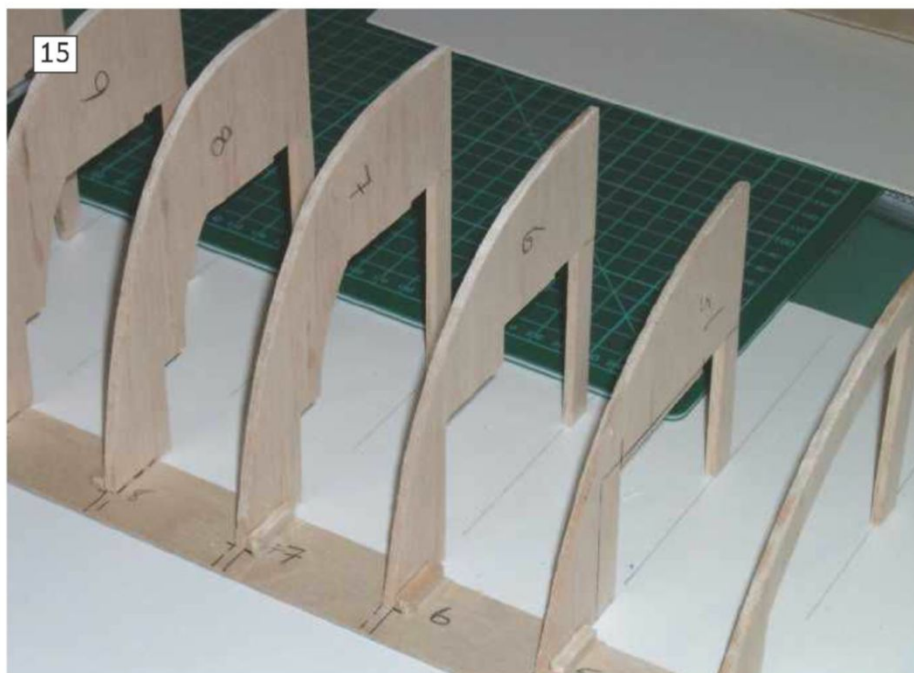
The first step in erecting the frames was to glue a piece of 3mm balsa sheet, shaped appropriately over the stern of the keel profile (**Photo 10**). This formed a bridge across the channel left for the rudder tube and a support for the first frames to be fitted.

Next frame 16 and 16a were glued together with superglue. Frame 16 is flush with frame 16a and deck level but 3mm smaller all round than frame 16. This provided a 'step' to locate the hull plank ends. This assembly was 'superglued' in place, checked for vertical with a small school set square and supported with a weighty battery until the glue set (**Photos 11, 12 & 13**).

Two identical panels of 3mm thick balsa were laminated in place between frame positions 12 and 16, bridging the channel cut for the prop shaft (**Photo 14**).

These were glued in place with an even, thin coating of PVA adhesive. This assembly was weighted down and left to dry for several





hours. This area would be shaped to the correct contour once all planking was complete.

All other frames were 'superglued' in place on the ply profile with 6mm square balsa strips glued at their bases to give additional support. I used the 'thick' type of superglue here. It doesn't set as instantly as the thinner stuff and gives a little extra time to fine-tune the positioning of frames.

To ensure the frames were absolutely vertical, I again used my little 'school' set-square against each upright frame in turn while the superglue set (**Photo 15 & 16**).

## Deck assembly

The half deck outline was drawn out onto 1.5mm birch ply using the card template (**Photo 17**).

I used the discarded 'cut-out' scrap piece of ply from the deck house opening on one side as a template to mark out the other side so that the two deck half openings would be a perfect match (**Photo 18**).

The first half of the 'under deck' was then glued to the frame assembly with superglue. 6mm square balsa strips were glued against pencil guidelines on the underside of the sub-deck prior to assembly. This helped ensure correct alignment of the deck over the frames. With all the frames and deck in position, the 'half' motor mount support and battery shelf were glued in place and the framework was strong enough to begin planking (**Photo 19 & 20**).

The deck extended beyond the frame edges by about 3mm (**Photo 21**) to allow for the thickness of the planking. The extensions to the frames below deck level also shown in **Photo 21** gave additional support while planking. These were removed once the hull half was completed.

The forward frames were shaped with fine sanding paper wrapped around a piece of thin flat wood (**Photo 22**).

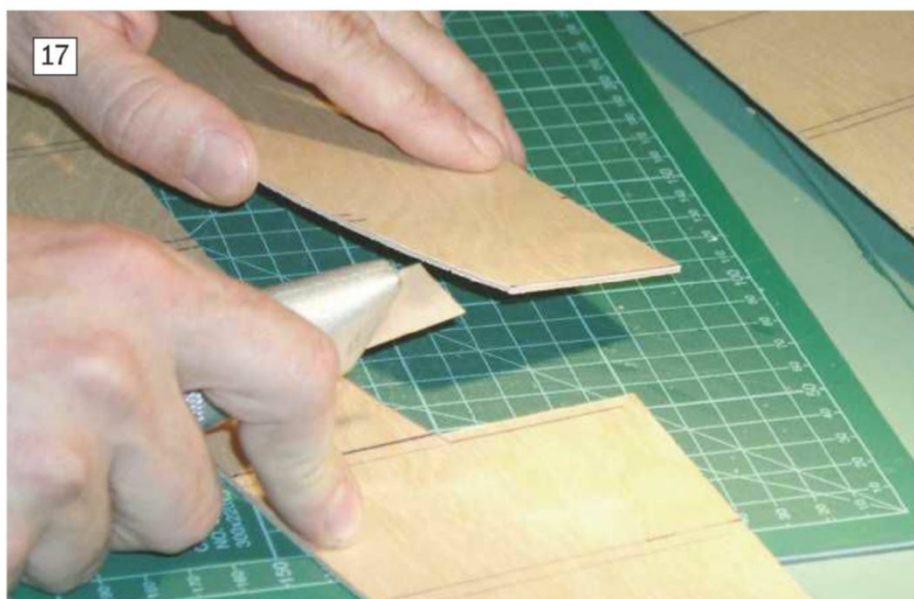
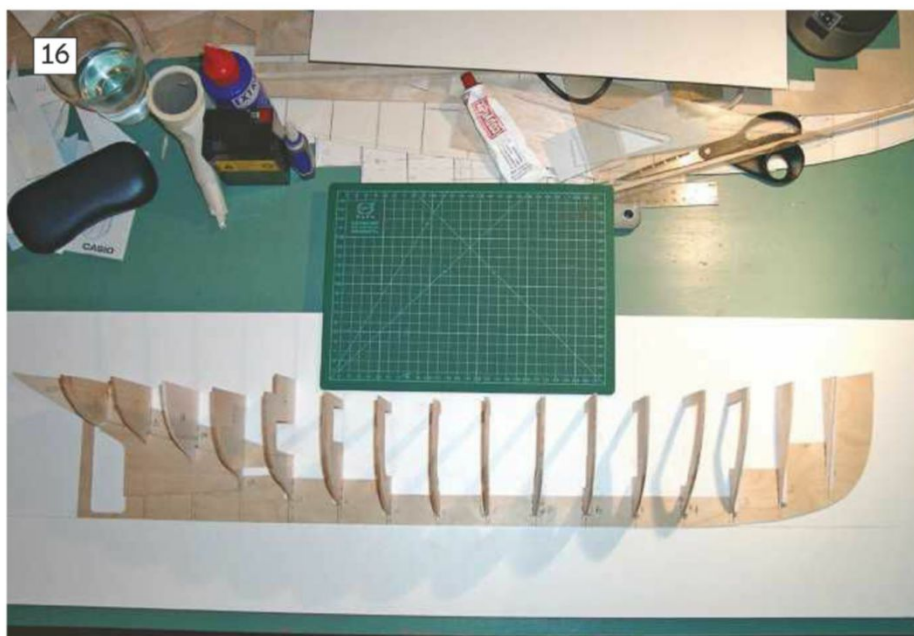
The same technique was applied to the stern frames to give a good full-contact 'gluing' surface for the planking which was sympathetic to the hull contours.

This was a relatively delicate job as the wood is soft and can be easily broken if sanded too vigorously.

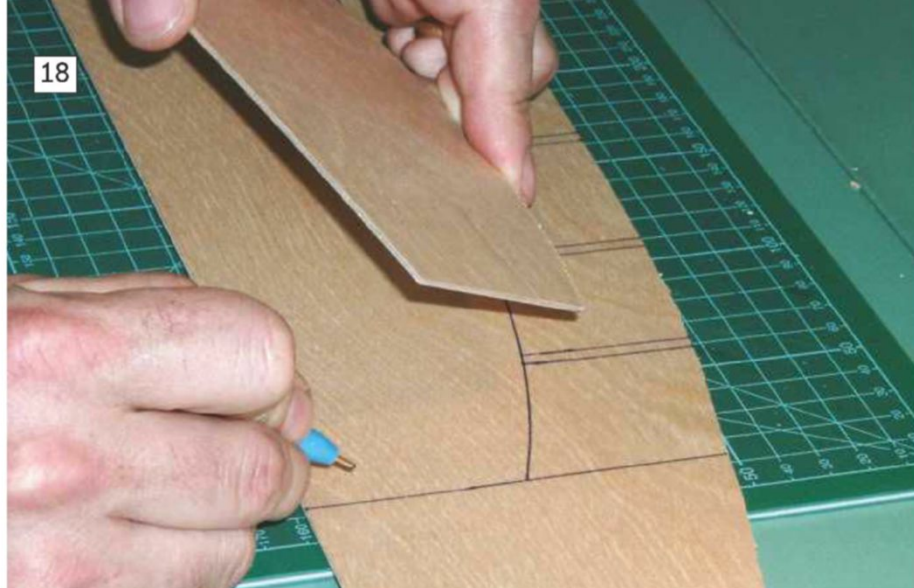
A couple of coats of clear varnish were applied to the inside of the frames and underside of the deck before planking commenced. It was important to seal these surfaces at this stage as some areas, especially under the engine mount would become inaccessible as the planking progressed.

## The plans

At this point, I took a break from the building process to complete a set of plans for the model. I finalised my thinking over the upper works and deckhouse as well as detailing deck fittings.







### Plan Download

The free plan presented within this month's issue has been reduced to 1/48 scale so it can be accommodated on our standard A1 sheet. The 1/35 scale version is available as a PDF download via the Model Boats website. Please visit [www.modelboats.co.uk](http://www.modelboats.co.uk) and type J P Woods in the search engine; click on the link, download the plan and go visit your local printer.





# A canny 'black' submarine

Painting and Weathering Trumpeter's HMS Astute  
by Gary Radford



ABOVE: The Lifecolor Black Rubber Shades & Co paint set.

## Replicating black?

Like the vast majority of present day submarines HMS Astute is overall black...or is she? Take a look at pictures of the actual boat and she is far from overall black to try and replicate this to 100% would be almost impossible. You could compare two pictures and she would look like different vessels it depends on how the light catches it, what type of light we have, i.e. bright sunshine or dull day, also if the vessel has just surfaced the list goes on and on.

We modellers have an advantage as we can use our modellers licence here. I have done quite a bit of military vehicle modelling over the years and one thing I have learnt, and had no complaints about, is if it looks right the chances

The various masts etc. sprayed in gloss black...

...And after being sprayed in Alclad Chrome and Polished brass lacquers.

are it is right. Just because a paint company produces a colour it is not necessarily correct. I have witnessed arguments in magazines and on forums regarding colours at the end of the day simply take a look at your own car as light, dust, bleaching from the sun all tell a different story so why not use this to our advantage.

To replicate this effect on Astute I will be using a set of paints which were kindly sent to me by The Airbrush Company. The set in question is from the Lifecolor Diorama set, Black Rubber Shades & Co (CS27). The set consists of six shades of black Dirty Black (UA731), Vulcanised Rubber (UA732), Tire Black (US733), Worn Black (UA734), Deep Cockpit (UA735) and Burned Black (UA736).

I have used Lifecolor paints on a few occasions and always had good results. When spraying I like to use the companies own thinner as I feel they know best sprayed around 15-20psi.

First the whole kit was sprayed in Halford's Grey Primer from a rattle can. When dry I sprayed the various masts in Gloss Black. I then sprayed the masts in Polished Brass and Chrome from the Alclad range. When dry they were masked off and a coat of the Vulcanised Rubber applied to the whole surface to give it that rubbery look. I then masked off certain panels using Tamiya masking tape. The two large areas on each side were sprayed in Worn Black while the smaller areas with the outlets were sprayed in Tire Black along with the area on the side of the conning tower. The bow of the boat was sprayed in the Deep Cockpit paint. You can see from the accompanying picture I have started to build up the various shades of black.

One thing that is very distinctive on Astute is the tiles on the side of the conning tower I have added pictures that show how light has an effect on the surface. I thought about simply leaving

ABOVE: Here we have the kit after being sprayed in the Vulcanised Rubber paint with various areas masked off using Tamiya masking tape.

BELOW: The tape has been removed to reveal the contrasting areas described in the text.





To try and represent the tile detail on the tower I first masked the area off and gently stippled the outline of the tiles in light grey....



warship scale

....random sections were then painted in light grey and brown. As you can see the colours were applied thin to add to the effect.



ABOVE: This is a member of the Astute Class showing the contrast of the tiles on the tower.



The effect after several light coats of Lifecolor Tire Black.

the area painted Tire Black but eventually decided to at least try and replicate some of the effect. First of all I masked off the area leaving small gaps between the lengths of tape then took a brush and stippled light grey paint over the joints. When the tape was removed I blocked in some of the rectangles with thinned down Tamiya Earth and Sky

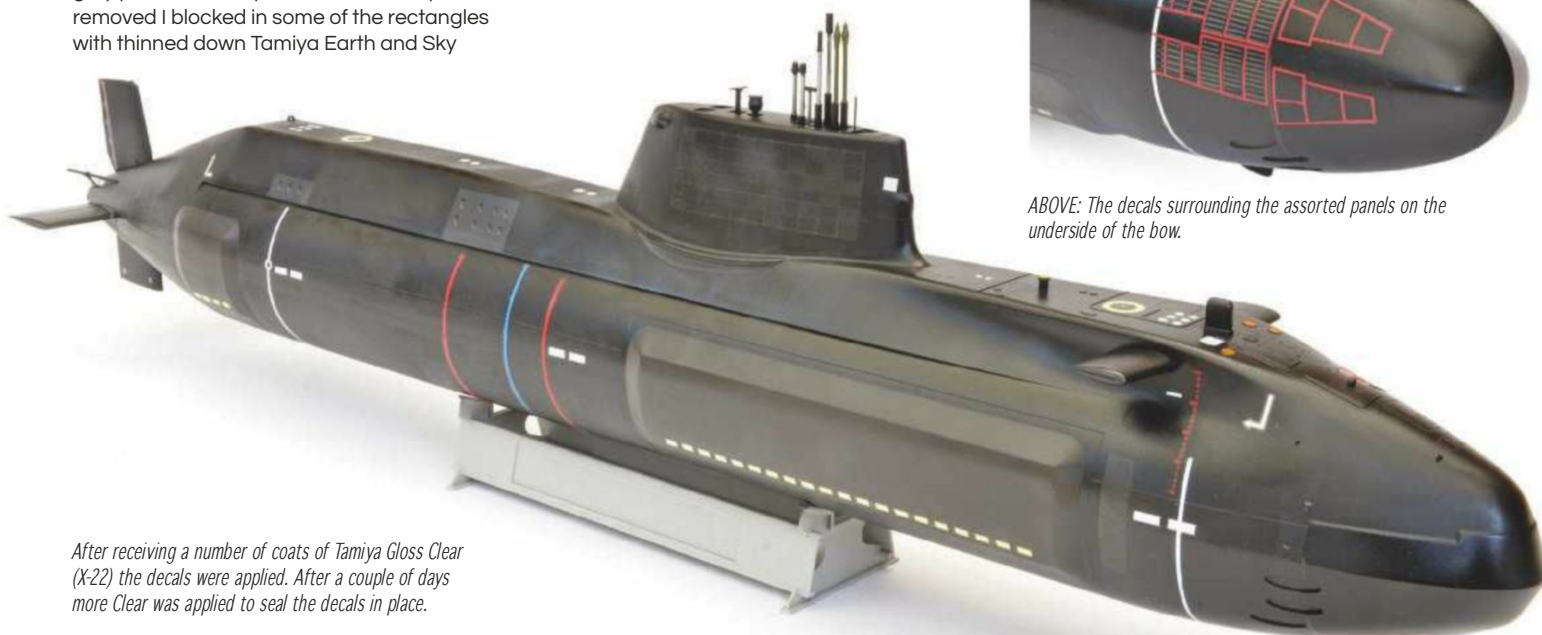
Grey. At this stage I was not bothered about getting even coverage as this would add to the effect later. When it was all dry I sprayed several light coats of the Tire Black over the top until the underlying pattern could only just be seen. Other areas around the hull were given the same treatment before the whole kit was given several coats of Tamiya Gloss Clear (X-22). This is applied to protect the paint from the weathering process and to prevent the decal carrier film from silvering on the matt surface. Silvering occurs when air gets trapped under the decal due to the matt surface not being smooth the gloss clear smooths the surface and so eliminates the effect. Once all the decals had been added several further coats of the Clear were applied to seal them in place.

## White salt residue

The whole kit was now given a very light overspray of Tamiya Sky Grey (XF-19) as a base for the white salt type residue found on submarines. When this was dry I applied the streaking effect using a wide soft flat brush and Winsor and Newton Flake White oil paint. The good thing about using oils is if you apply too much it can be easily removed or manipulated to work to your advantage. Once the streaks have been applied the paint



ABOVE: The decals surrounding the assorted panels on the underside of the bow.



After receiving a number of coats of Tamiya Gloss Clear (X-22) the decals were applied. After a couple of days more Clear was applied to seal the decals in place.



*The Astute after a light coat of Tamiya Sky Grey, note how the white oil paint has been applied to represent the salt streaks down the side of the hull.*



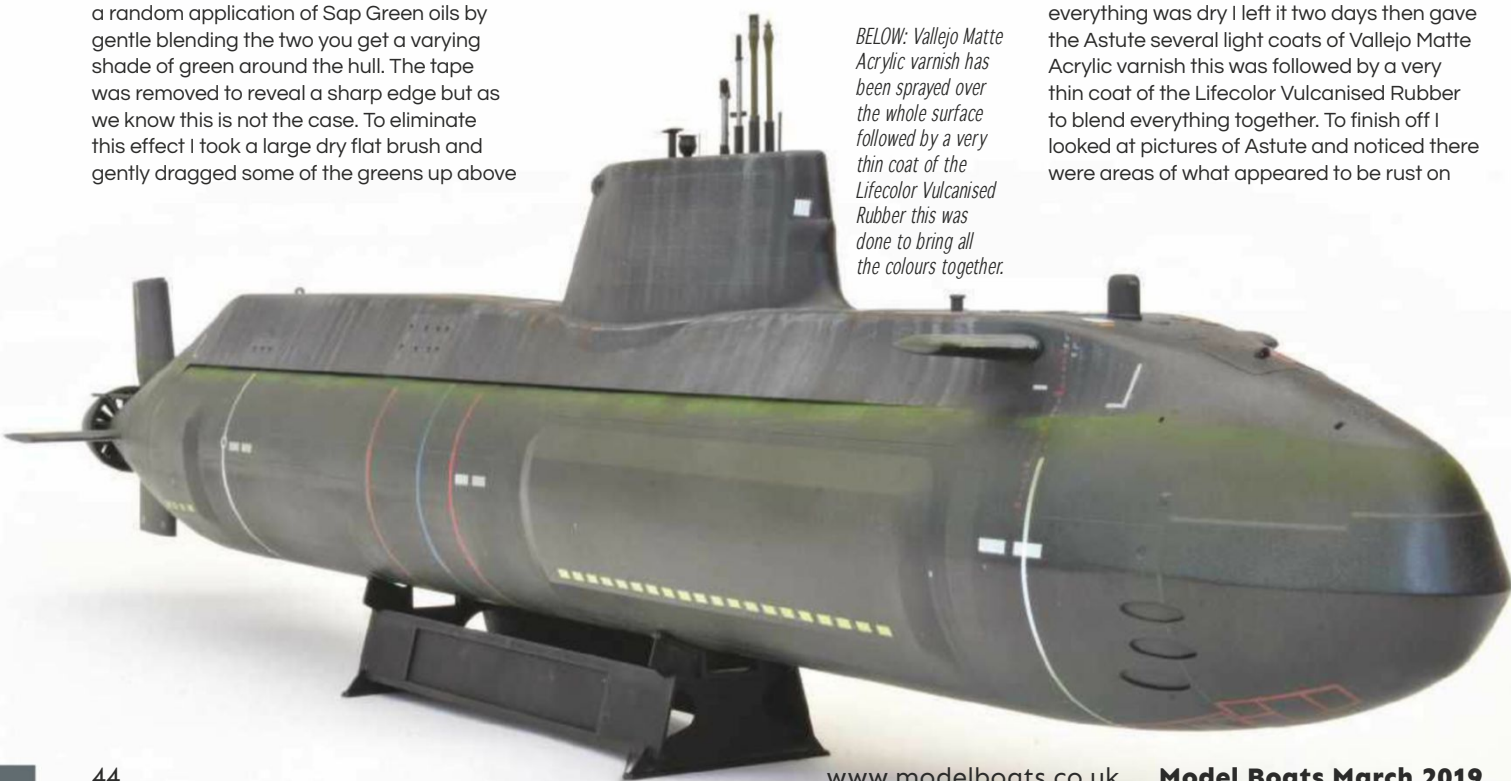
was blended in so not to be harsh. It is best to have a practice on a section of plastic card it is surprising how quickly you will develop technique of your own. Once dry I gave the upper surface a coat of Vallejo Acrylic Matte Varnish to seal everything in place. The top was then masked off and the bottom part of the hull below the water line was given a very light spray with various shades of green to represent the algae which tend to grow on ships hulls. To represent the build-up of scum that forms around the waterline I stippled a thin coat of white oil paint around the edge of the masking tape and left it to dry. This was followed by a stippling of Chrome Green Hue and then a random application of Sap Green oils by gentle blending the two you get a varying shade of green around the hull. The tape was removed to reveal a sharp edge but as we know this is not the case. To eliminate this effect I took a large dry flat brush and gently dragged some of the greens up above



*ABOVE: Here the hull has had the masking tape removed and the various shades of green mentioned in the text have been applied. The harsh line that was formed by the tape has been blended in to the surrounding area.*

*BELOW: Vallejo Matte Acrylic varnish has been sprayed over the whole surface followed by a very thin coat of the Lifecolor Vulcanised Rubber this was done to bring all the colours together.*

the line gradually blending them in. Once everything was dry I left it two days then gave the Astute several light coats of Vallejo Matte Acrylic varnish this was followed by a very thin coat of the Lifecolor Vulcanised Rubber to blend everything together. To finish off I looked at pictures of Astute and noticed there were areas of what appeared to be rust on







ABOVE & BOTTOM RIGHT: The weathered Trumpeter 1/144 scale HMS Astute.

RIGHT: This picture of Astute in the USA clearly shows the rust effect on the side of the hull.



the hull. To simulate this I thinned down Burnt Sienna oil paint and applied small spots of it in the desired areas after five minutes I took a brush which had been moistened in white spirit and gently blended the rust colour into the hull.

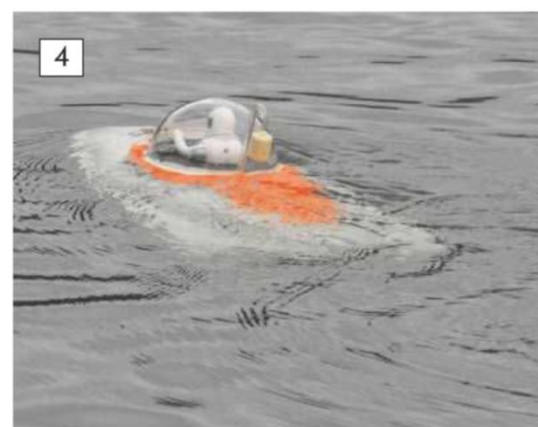
With that the Trumpeter 1/144<sup>th</sup> HMS Astute was finished. I would like to thank the folks at Trumpeter for supplying the kit and I would also like to thank Martyn Chorlton for allowing me to build her. Thank you all. ●





September 2018 Bournville  
Submarine 'Dive In'  
by Rob Fowler

# Dive, Dive, Dive!!!!!!



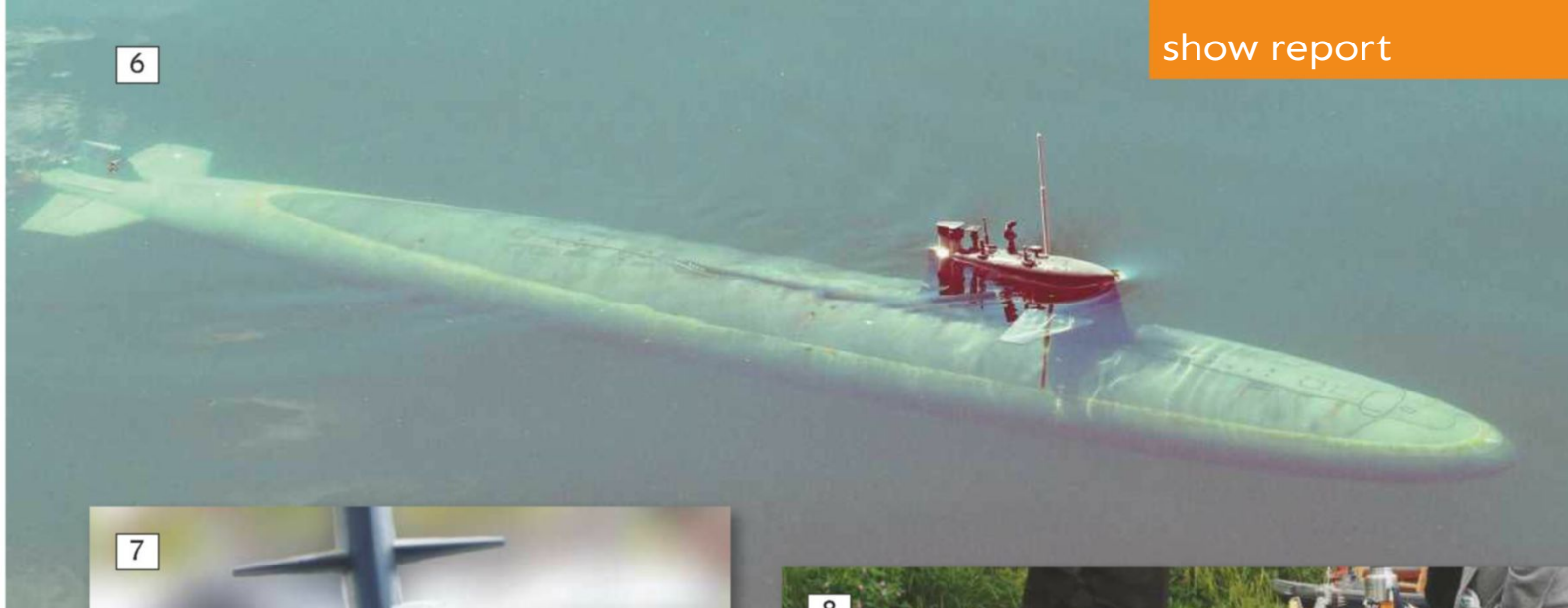
**D**ive – into Model Submarines is a Facebook group open to all enthusiasts of Radio-Controlled Submarines. It has grown massively and has members from around the world sharing their passion for RC Subs, as a direct result of this there is now a regular calendar of events around the country. These days are kindly handed over by various Model Boat clubs exclusively for RC Submarines. This means Submarine modellers travel from far and wide to enjoy a full day of sailing at this excellent venue.

September Dive In is the second of the two events which take place at Bournville RS @MBC. Folks started arriving as early as. We quickly had the tables laid out around the pool side and





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7



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they rapidly filled up with model subs of all sizes and descriptions (**Photo 1**). Fortified with bacon baps and hot tea vended by Bournville RS&MBC (Thanks Guys) the submarines were soon in the water, more importantly under the water. Many model boaters ask the question 'what is the point, surely once submerged you can't see the model?' This depends upon the quality of the water you are sailing in. At Bournville we certainly can see the submarines when completely submerged and even when sitting on the bottom of the lake. Some members have equipped their models with under water cameras to capture video and still photos of the view from the model (**Photo 2**). These are providing exciting images of the submarines operating in their element. Thanks to those that have allowed us to share, you know who you are.

One of the most unusual models on display was not a submarine but a deep-sea diver Action Man. This has rigged up a pumped system which allows the diver to descend to the bottom and rise back to the surface (**Photo 3**) great fun and in keeping with dive in.

Aquabat is another fun submersible with its clear bubble dome housing various occupants; Stig (**Photo 4**) was at the controls of one along with Grew and his minions in another (**Photo 5**).

Skipjack and Gato class subs are growing in number since Revell released plastic kits in 72nd scale (**Photo 6**). This make them easily convertible to RC, one can pick up the model kit at a very reasonable price of around £50.00. There are currently several conversion kits available for the Skipjack/Gato with the

9



R&R model engineering's being the most popular, which can allow for operational torpedoes to be fitted, note torpedoes fitted to the front of USS Scorpion (**Photo 7**) locked and loaded! They operate on compressed gas and will travel up to 50ft. When the gas is spent, they float on the surface to allow retrieval and reuse.

TV/Fantasy submarines were also represented, Mountfleet Models newly released Flying sub from Voyage to the Bottom of the Sea (**Photo 8**) and an exceptionally detailed and well-painted Engel Nautilus from 20,000 leagues under the sea (**Photo 9 & 10**). Who said subs are boring??

See you at the next dive in. ●

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LEFT: Scale model of a French sailing boat. This massive piece dwarfed the exhibits around it.

# Festi'Maquettes Model Show

Bassens, Bordeaux 6/7  
October, 2018  
by David Garden

Every so often, in this great hobby of modelling, you know that you are in for something special. I had been invited to the "Festi'Maquettes Bordeaux" held in the Espace Garonne complex in Bassens. I travelled in the company of Steve an experienced US modeller. Despite our

collective experience of model shows we really thought we had come to the wrong place when we were greeted at the reception by two attractive young women in smart flight attendant type uniforms. However, we were in the right place and this was the first of many pleasant surprises of the show.

The Festi'Maquettes (Festival of models) this year it took place on the weekend of the 6/7 October. The show is held in a large exhibition hall and as I have stated is supported by professional staff. The variety of types of models exhibited are extensive and

well displayed on the many tables backed up by friendly and knowing modellers who were very keen to explain their passion to the public. As well as boats, figures, armour and aircraft there were trains, sci-fi, cars, hand-carved wooden models, model houses and villages. One wood carver showed his handiwork of full-size Harley-Davidson motorbike parts looking like they had just come off the bike.

The greater variety of model subjects on show and, the different skills showed, in my opinion, leads to more general interest for the public and perhaps greater numbers at the door. I have always tried to advertise the existence of model shows I am attending to family, friends and colleagues. In this way the hobby and the show could get a wider viewing.

On setting up our table we were struck by the friendly welcome not just from the organisers but from many of our fellow exhibitors who came over for a lengthy chat. I got lots of practise in using my French and spent a lot of time in conversation with fellow modellers and the public. It took me all weekend to get around all the exhibition tables and manage to talk to most of the exhibitors.

Last year the radio-controlled boats had their own inflatable pond which allowed the boat exhibits to be put through their paces to the delight of the public. Unfortunately, on the Sunday this sprang a leak and flooded the neighbouring sports field. So, this year the sports centre had banned such large volumes of water and all boat models had to be static displays. Pity as it is much more fun to see them move! One exhibitor who attends with his high-quality radio-controlled boats was M. Autogue who expressed his regrets to me that his boats were confined to the display tables. Last year his models were admired greatly by the public as they cruised round the display pond.



ABOVE LEFT: Very nicely finished French fishing boat flying the Breton flag. ABOVE RIGHT: Large paddle steamer ferry as used on inland waterways.





ABOVE LEFT: French trawler (chalutier) 'Nordkap 476'. ABOVE RIGHT: Another great model of a French fishing vessel as used near the home club's town of Bordeaux. This vessel fishes in Atlantic waters.



ABOVE LEFT: One of M. Autogue's boats - an American PT motor torpedo boat. The owner placed a photo of the model sailing in his local lake. ABOVE RIGHT: A selection of high-speed pleasure craft.



ABOVE LEFT: The Revell 1/400 Queen Mary. The owner noted that the kit consisted of 550 parts and took many hours to build and paint! ABOVE RIGHT: One of my favourite kit models, the old Matchbox 1/72 Flower Class Corvette, recently re-released by Revell and capable of being built with radio-control.

For all participants there was a voucher for a coffee and croissant in the morning and we all got an aperitif before lunch. The midday

meal was available for a modest 10 euros but as this was a quiet time in the hall I chose to skip eating and get some pictures. Public

numbers were reasonable in the mornings but became quite hectic in the afternoons. There were three traders selling models and paints with other accessories who did brisk business (I did help a bit) as well as another trader dealing in model railways.

On a similar note the competition was low key and entries stayed on the tables with an entry label which included the competition number along with the request 'Be kind - vote for me!' Judging was carried out by members of the public. All prizes were large scale models relevant to the entry and given out on Sunday midday

In discussion with French modellers present, my comments produced the response that model shows in France reflect 'French style' i.e. 'cool!' Model making is a fantastic hobby no matter at what level you build and finish. I firmly believe all who participate in modelling should do so for a continuous learning process but most importantly FUN!

I would describe the show as inclusive, convivial and providing a superb time to engage in the camaraderie of our modelling hobby. Finally, many thanks to Michel Forin and the organising team for inviting me and producing a great show. I have already booked my table for next year and hope to see you there.



ABOVE: A look down the host club (Club Maquettes Bordeaux Métropole) table with a French Navy attack boat in the foreground.





# Soobrazitelnyy- Russian Corvette

Building the new Russian multi-purpose corvette  
RFS Soobrazitelnyy by **Dave Wooley**

## Removable hangar and funnel construction

With the basic construction of the superstructure in place, work could begin on the hangar. From the beginning, the intention was to have a hangar that was removable during the construction period, enabling easy access to the interior for fitting out. Akin to most modern warships, and for the practicalities of operating a helicopter, the hangar is sited aft of the funnel and can be seen here on Steregushchy, the first of the class (**Photo 1**).

Following previous Soviet-Russian warship design hangars are relatively narrow in comparison to those fitted to RN or NATO warships but large enough to accommodate the ubiquitous Kamov Ka-27 ASW helicopter, which incidentally has a twin rotor system on the main rotor head.

The purpose of having a removable hangar on the model is to allow unfettered fitting out, which will include lighting, but here the method changed from that used when

building the same feature on HMS Daring. Here, access for the initial stages of the build will be from the roof, then later from the underside. Unlike any other design of hangar, the outer walls are in fact sloping inward then outward, all part of the design to reduce radar cross section (RCS).



1: A bird's eye view of the first of the class, Steregushchy showing the SSM bay, funnel and hangar

2: The hangar sides as per the photo images are formed into a box section increasing thickness and strength whilst reducing weight.





3: Assembling the hangar in place by first fixing the hangar door and forward bulkhead.

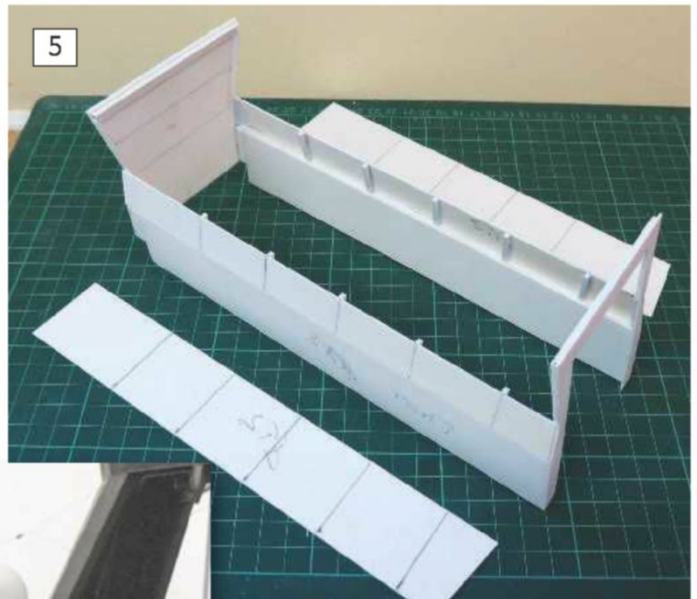
4: Sliding out the partially assembled hangar to add the upper walls.

5: Each upper side wall of the hangar is marked and cut to size.

6: The hangar door on Soobrazitelnyy, showing the arrangement for the sloping sides of the hangar.

7: The in-out arrangement for the sides of the hangar.

8: Although the hangar is in place, the vacant space forward of the hangar will accommodate the removable funnel casing.



bulkhead and the hangar door surround (**Photo 3**). It's worth noting how the forward section slopes inward.

When firmly set, the basic hangar can be removed clear ready for fixing the upper sides, plus the internal support strips (**Photos 4 & 5**). To best illustrate the in-out construction of the hangar sides, I've included this image of the hangar entrance (**Photo 6**). With the upper sides and internal supports fixed, the hangar can be returned to its space within the after-deck housing (**Photo 7**). A more detailed view can be seen in **Photo 8**, the space forward of the hangar is made to accommodate the funnel casing which is also removable to enable at a later date, the internal power switches, charger point and for ease of airbrushing





9: Internal supports fitted to the upper hangar walls and ringed in red are the Evergreen 'U' section roof beams.

10: Centre of the superstructure is the SSM (Surface-to-Surface Missile) Bay with the missile tubes to be fitted on either beam (more on this at a later date).

11: Fitting the floor into the entrance to the air intake chamber.

12: This floor will also be level with the raised platform within the SSM bay.

13: The SSM bay raised platform is fitted into the bay.



The method for the construction of the hangar, also involved roof spars which is featured on the full size vessel to span the roof space. Connecting with the side supports, these are formed from Evergreen 252 square tube 3.2x3.2 and ringed in red (**Photo 9**).

The space between the hangar is concealed the SSM (Surface-to-Surface Missile) bay, but as will be revealed, incorporates a raised inner platform and a number of large air vents built into the sides of the hull (**Photo 10**).

This connects with the chamber in the side of the hull as in **Photo 12**. The reason this chamber is added is that it is clearly visible when looking through the opening from within the SSM bay.

Within the SSM bay is a raised area which on the full-size ship allows work to be undertaken on the missile tube (missile loading) whilst giving access to the forward and after sections of the deck housing without compromising RCS. As the entire superstructure is to be lifted clear of the hull,

this area is a potential weak point and to offset this simple, but effective, measures where incorporated into this area which will be covered in a later issue (**Photo 13**). The vent arrangement in the side of the superstructure can be seen here adjacent to the funnel casing (**Photo 14**).

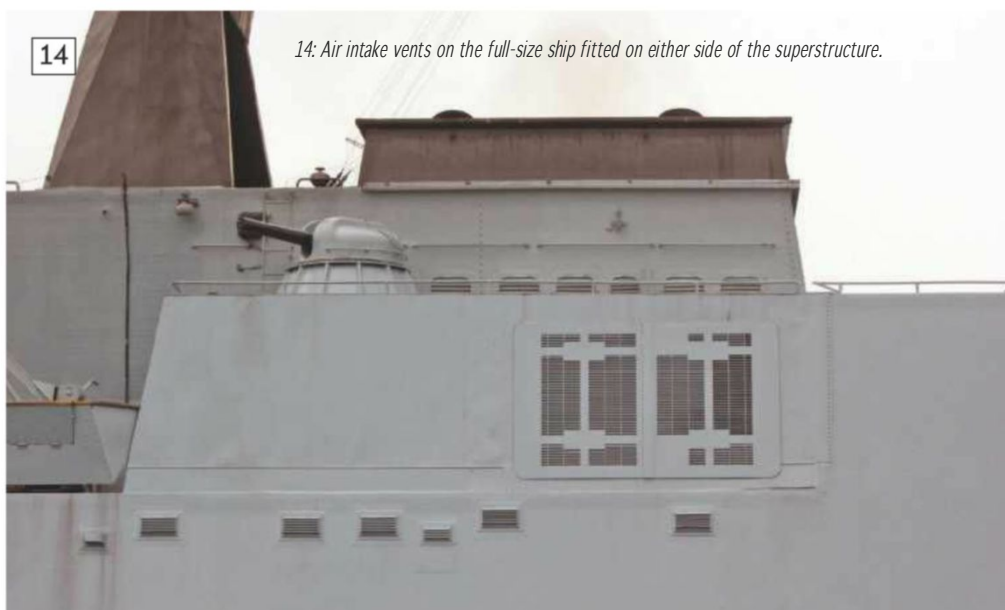
## Funnel casing

Like the hangar, the funnel needed to be removable, with three of the sides formed in to

## Preparation for exhaust gas vents

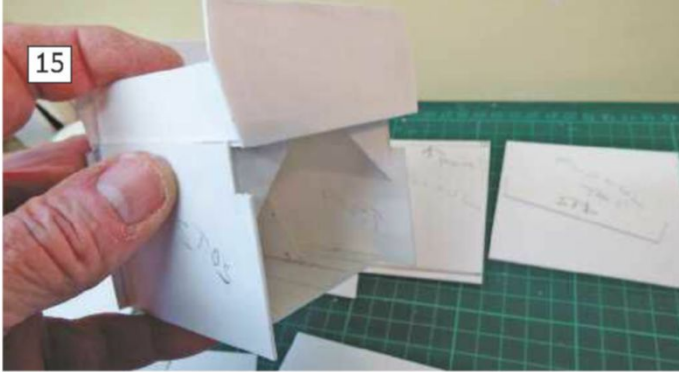
Over to port and starboard within the SSM bay are inlet air vents, because of the layout, the port arrangements differs from that over on the starboard side. To port there is an open area which leads to an internal chamber adjacent to the funnel in which air is drawn through the outer vent. The initial exhaust gasses from the Uran missile are directed onto the surface of the sea via an external flap. This opens when the missile is about to be fired and closes immediately after the missile is discharged from the tube.

Shown here is the floor being slotted into the entrance to the vent housing (**Photo 11**).

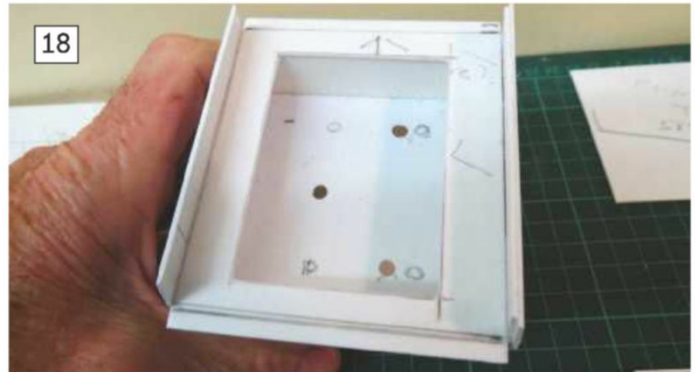


14: Air intake vents on the full-size ship fitted on either side of the superstructure.

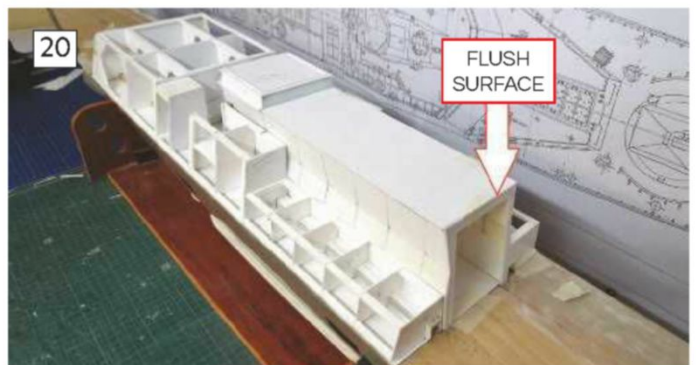




15: The basic box structure for the removable funnel casing.  
16: The funnel box fitted in a space forward of the hangar.



17: Within the SSM bay is a louvered funnel air ventilation grill, located beneath an overhang at the rear of the funnel, onto which will be fitted a photo etch fret. 18: Positions within the funnel for power switch and charger socket. 19: Cross beams are added to the top of the hangar. 20: A funnel top cover is added; this will be partly cut away and large bore tubes added. The hangar roof cut too size and added but not fixed.



a box shape. The fore and aft sections of the funnel casing mirror the outward slope of the hangar side, but the visible upper section is covered and the sloped 10° inward on all four sides (**Photo 15**). Two square cuts are made into rear of the casing that will fit around the timber spar. This rear section of the funnel casing will line up with the inner wall of the SSM bay and, as per the photos, will have a slight overhang (**Photo 16**). This arrangement becomes clearer in **Photo 17**. Here the funnel louvre air intake profile is added beneath the funnel overhang. This is continued over to starboard, to incorporate the vent into the starboard chamber. At a later stage, photo etch will be added to the profile.

A tray is added within the funnel casing to incorporate the power switch and charging point and will be hidden by the top of the funnel. As mentioned previously, I have added this arrangement to the most recent builds to avoid the need to remove the superstructure (**Photo 18**).

### Fitting hangar and funnel into place

The funnel arrangement and hangar can be placed in situ with the roof beams added to the top of the hangar. This also adds strength to the structure which, for the moment, is devoid of a fixed base and roof (**Photo 19**).

The roof is cut to size but remains removable to allow access for the interior lighting. It's worth noting that the roof sits on top of the hangar but flush with the top edge of the hangar surround (**Photo 20**).

The hangar and funnel thus far with the top of the funnel added. It is in this picture, that the in-out side of the hangar outer walls are more apparent and the sloping side of the funnel continue the slope of the hangar side (**Photo 21**).

### Next month

Cladding the sides, building up the bridge and forward VLS deck housing.



21: A general shot of the work completed thus far.

### References and acknowledgements

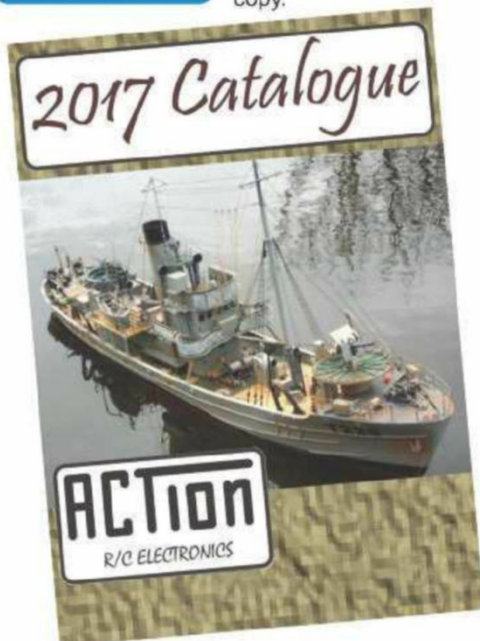
My thanks to Mark Findler for the use of his images of the Soobrazitelnyy; Kurt Grainer Warships Underway USA and Peter Brown naval architect Vosper Thornycroft for his help and assistance. A GRP hull is available from Fleetscale. [www.fleetscale.com](http://www.fleetscale.com) and detailed plans are also available from Jecabin, [www.jecabinplans.com](http://www.jecabinplans.com).



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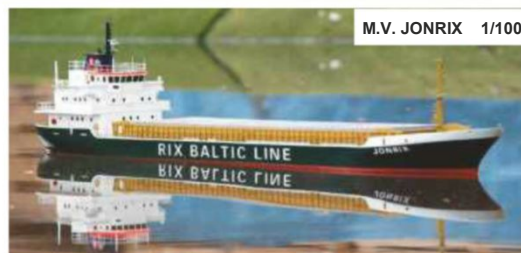
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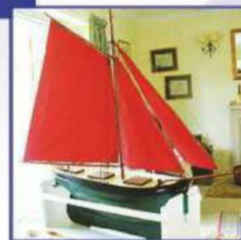
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1

# Range Finder

The second and final part covering the Austro-Hungarian dreadnought Battleship SMS Viribus Unitis ('With United Forces') by **Dave Wooley**

**M**omentous events in history often seem to be bound by a number of converging threads. Viribus Unitis, the first of the Tegetthoff-class of powerful dreadnought type battleships, was launched on 24 June, 1911 by

Archduke Franz Ferdinand, heir to the Austro-Hungarian throne. In late June 1914, the Viribus Unitis was used to take the Archduke Franz Ferdinand and his wife Sophie Duchess of Hohenberg, to Bosnia as part of an official visit. By the close of June, both Franz Ferdinand and Sophia had been assassinated in Sarajevo and the same dreadnought was used to convey their remains back to Trieste.

For the model makers at Stabilimento Tecnico Triestino (STT), 28 June, 1914 was just another day. With barely twelve months since commencing the construction of a 1/25 scale model of the new dreadnought battleship Viribus Unitis and unaware that events in Bosnia were about to change their world for ever. By the close of August, Austro-Hungary, most of Europe and the Viribus Unitis were mobilizing for war.

## The model

**Amidships** - The builder's model of Viribus Unitis was not the only half model showing interior detail, but was the most complex model ever built and it is with this in mind we can move onto the final part of this in depth look at a masterpiece of model making.

**Photo 1** shows the port side full hull and does

not give the viewer any inkling as to what to expect on the starboard side.

Last month we concluded our viewing of the model on the starboard side amidships and like this entire outstanding piece of model making, it is when you view the model from close in, the extent of the workmanship becomes evident. Take for example the 34ft cutter in the fore ground of **Photo 2** and in the background, a 45ft enclosed powered pinnace, whilst in **Photo 3** one of two 30ft open pinnaces and between the funnels one of two searchlights all faithfully following that on the full size vessel. In all, Viribus Unitis had four powered pinnaces all clustered amidships. Adjacent to the after funnel to port and starboard, is a lattice type boat crane seen here in **Photo 4**. In the foreground, mounted on the deck edge, is the rangefinder for the secondary casemated 5.9in/15cm guns.

Remaining in the same location but moving over to the starboard side, we have a completely different view. This mid to aft section of the model highlights the engine spaces which include the boiler rooms, ventilation for coal bunkers, magazine cooling and all the fittings within the 'X' turret barbette as described in Part 1; the detail is just breath-taking (**Photos 5 & 6**).



*TOP 1: Port side view of the 1/25 scale model of the Viribus Unitis. It is worth noting that the anti-foul is a green colour.*

*LEFT: Viribus Unitis ship crest. BELOW: The Viribus Unitis leaving Pola harbour.*

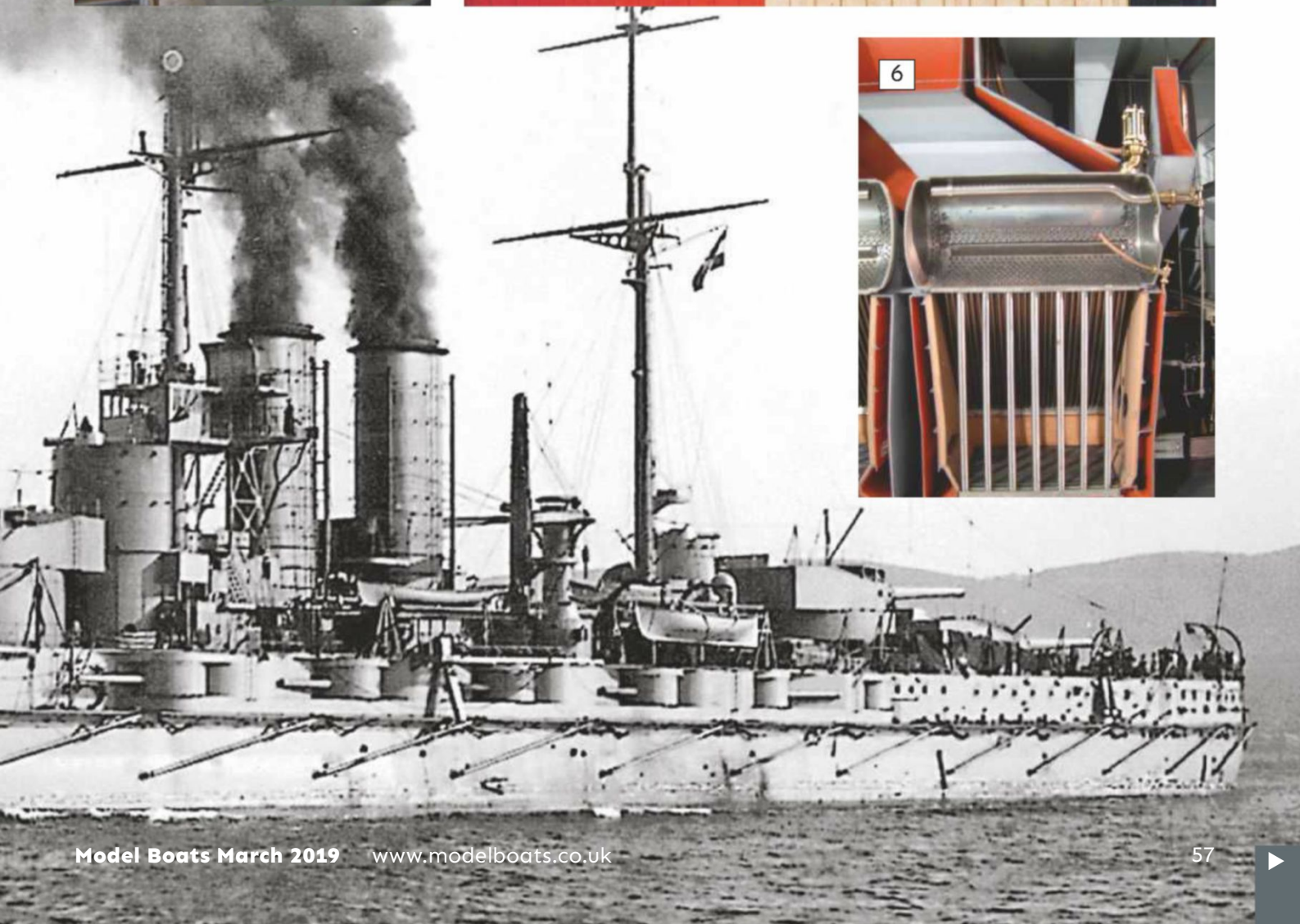
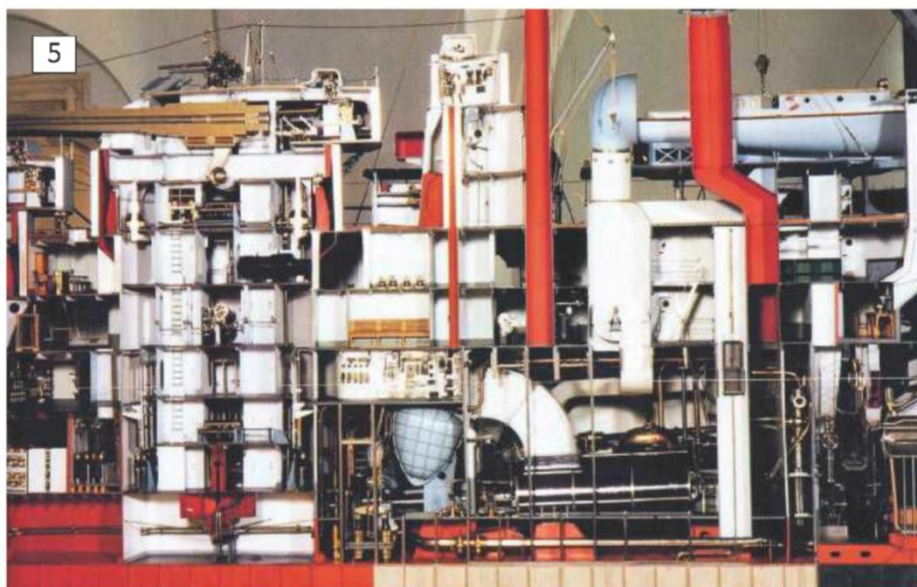






warship scale

2: Viribus has four powered pinnaces and two enclosed two open. 3: The open powered pinnace. 4: Inboard of the deck edge range finder for the 15cm waist guns is the crane for shipping the ships boats. 5: Starboard side amidships an almost complete internal arrangement showing engine and boiler rooms. 6: Part of the boiler room.







7: A very important part of the ship, the bakery. 8: All part of ship board life seen here is one of the ablutions or crew wash rooms.

Amidships, immediately below the main deck, appears to be the bakery, but I can't confirm this (**Photo 7**).

When viewing programs aired on TV showing life aboard warships, such as HMS Dragon or the HMS Queen Elizabeth aircraft, the program makers show such basics as the heads and ablutions. Well here are the ablutions aboard the Viribus, conditions have moved on since 1914 but without the existence of this model there would be little in the way of 3D detail to show how these fixtures and fittings appeared (**Photo 8**). The same goes for the refrigerated or cold storage spaces (**Photo 9**).

**Aft** - The after section, much like the forward section, houses the barbettes which is the trunking onto which the triple-barrelled turrets revolves (**Photo 10**). Below the water line aft is the stern torpedo room which can be seen in detail in **Photo 11** and two decks above the after-chain locker.

Immediately below the main deck and between 'X' & 'Y' turret, is the barber's shop complete with mirror, seen here in **Photo 12**.

Immediately below the turret is the handling room and to the left of the picture the turning gear, above the elevation gear (**Photo 13**).

Returning to port and right aft, is the accommodation ladder, whilst below a steel ledge, which supports the brailing davits for the torpedo netting and below that, the torpedo netting booms (**Photo 14**). Moving further aft on the main deck is the after-cable holder adjacent to the deck pipe (**Photo 15**).

Right aft in a traditional location, is the captain's accommodation. Like most ships of the period, it was very much fitted out with some of the home comforts. The table is prepared for a meal; a painting of the Viribus Unitis hangs on the side bulkhead, whilst a vase of flowers provides a flavour of normality. These are certainly comfortable surroundings for the Captain and his senior officers to enjoy (**Photo 16**).

Over to port right aft is the vertically-stowed stockless stream anchor, with its tumbler actuating rod for releasing the chains (**Photo 17 & 18**). Remaining in the same location, but over to starboard, we can see a comfortable chair with a

view aft, all part of the captain's accommodation. Immediately below seems to be some sort of preparation area (**Photo 19**). Our final image shows Viribus Unitis in a floating dry dock and here you can see the entire stern arrangements, with two stockless anchors aft and a clear picture of the type of propellers fitted (**Photo 20**).

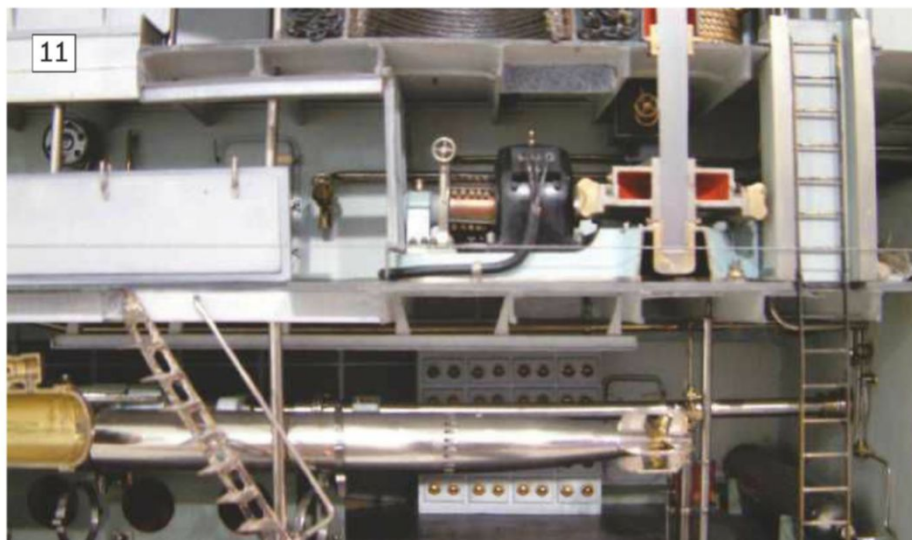
## Conclusion

The placing of an Allied barrage across the straights from Brindisi on the Italian mainland to Corfu, restricted the ability of the Austrian Navy to move their surface warships south into the Mediterranean. Thus, the potential of the Viribus Unitis was never really tested. Although raids were undertaken on the barrage, the latter was constantly being reinforced.

On 24 May, 1915, Viribus Unitis along with other units of the Austro-Hungarian Navy, shelled the Italian city of Ancona. This, according to official dispatches, was credited as being great tactical victory, as it assumed it would affect future planning of Italian Naval operations out of all proportion to the actual damage done.



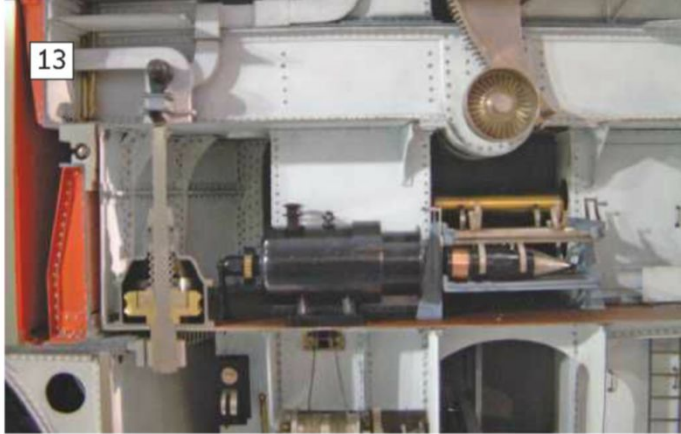
9: Cold storage or refrigerated area. 10: Although quite overwhelming in its detail almost in the centre of the picture sited between the after Barbettes is the complex arrangement of the turbo-generator room three decks down.



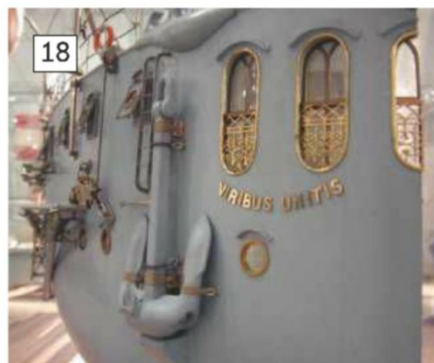
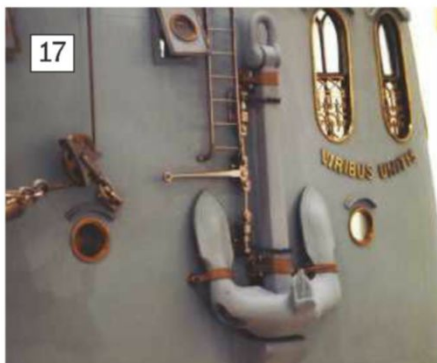
11: The after-torpedo room. 12: Just below Y turret and the main deck is the barber's shop.







13: The engineering for training and elevating the main armament. 14: After accommodation ladder and associated davit. 15: On the quarter deck is the aft cable holder with the deck pipe leading below decks. 16: Right aft the Captains accommodation in miniature.



17: Stowing the stream anchor right aft. 18: Large warships of the period had a platform surrounding the stern usually accessible from the captain's quarters. Here large ornate windows are provided. 19: Here the captain or Admiral could rest and take in the view from the stern.

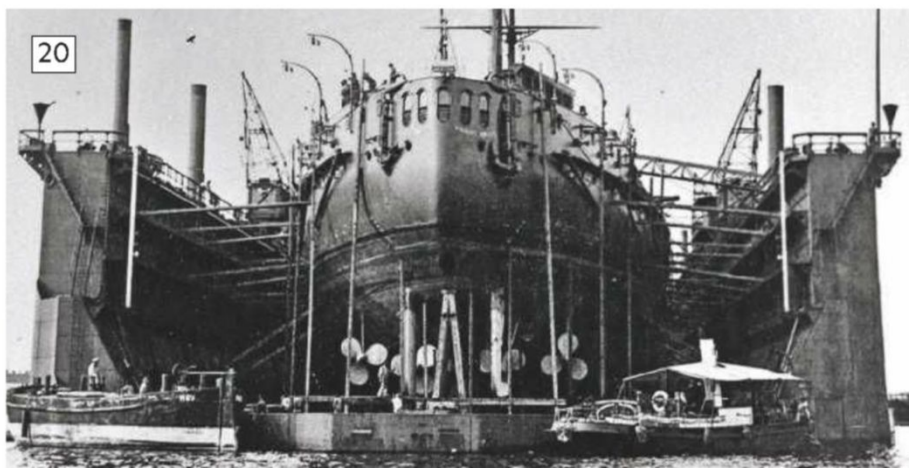
However, the barrage remained in place and not unlike the German High Sea Fleet being confined to the North Sea and the Baltic, the Austro-Hungarian Navy remained bottled up in the Adriatic for best part of the war.

In all this time, the model makers at STT continued their work and in late 1917, the model of the Viribus Unitis was completed. Less than nine months later, the Austro-Hungarian Empire ceased to exist. In its place were various independent states, with the rump state of Austria having lost its access to the sea.

By October 1918, the once proud fleet was

being parcelled off with the newly-formed Yugoslav/Croatian state taking the Viribus Unitis and as such, neglecting to impose any of the usual preventative measures in case of attack. WW1 was not officially over and as such these warships remained targets. Thus, on the 31 October, 1918 a two-man Italian Mignatta or self-propelled guided torpedo (in WW2 it was to become known as a Chariot) penetrated the weak defences of Pola harbour and fixed a 200lb warhead to the hull of the Viribus. At 6.30am on 1 November the mine was detonated and the Viribus Unitis rolled over and sank.

20: The Viribus Unitis within a floating dry dock exposing the two steam anchors, stern viewing windows, rudders and the four propellers.



## Foot note

During my research on the Viribus Unitis model, there was next to nothing regarding the fate of the makers who worked for over four years on this amazing model. The paradox is, whilst the war was destroying lives and empires, the model makers were constructing what is now considered one of the world's finest, if not the finest ship model.

## References and acknowledgements

Viribus Unitis ref - All the World's Battleships 1906 to the present edited by Ian Sturton, Pg.11-13; Austro-Hungarian Battleships by Paul J Kemp, Pg.83-106; Warship Volume 2 an article by Friedrich Prasky, Pg.104-115; Manual of Seamanship Volume 1 1915 & Shipyard Practice as applied to warship construction 1911 by NJ Derrmaid.

My sincere thanks Edward Kompast Vienna for allowing his images of the Viribus Unitis model to be used in this article. Thanks to Fredrich Prasky for several images of the interior of the entire model and to the Military Museum Vienna for their assistance.



# ✂ Reader's Letters

Your feedback and comments

Dear Sir

Recently I have had the opportunity to read the articles on 'square rig' control (by Neville Wade) which appeared in recent issues of Model Boats magazine. What superb work by the builder. I can only express my admiration for the detail, finish and performance of the models.

Some years ago, I too built a model that carried square sails. It was a hermaphrodite brig and it brought with it a whole new experience in sailing model boats. It took me a whole summer season to get the sail balance just right ..... but it sails 'like a witch' and of all the model boats that I have built it gives me the most fun. I guess it turns a few heads too! Trimming the square sails involves both sheeting the yards and raising/lowering the square sails. It would have been easier to design the model's control systems in a bigger hull but I was constrained by the size of my vehicle and by how much I could reasonably lift and carry about!

Peter Sly (Canada)

**Editor's reply** - Thanks for the positive feedback Peter and you will be pleased to know that Nev has more material in the pipeline.

Dear Martyn

Can you please help me with a model sailing boat problem? I recently bought a hull of probably a racing yacht, but without any fixtures or fittings, i.e. no mast, boom etc. The hull measures 91cm in length and has a beam of 16.5cms; the mast step has an internal diameter of 14mm. Is this a standard or a one-off? So, can you suggest a length of mast and boom and what kind of sails and size of should I make or can suggest a book that would help me?

Terry Prior

**Follow-up** - I think that it is a model replica of a 'J2' Class yacht. I think that I may have worked out the mast and boom size, but I need help please with rigging and sails; is there also a foresail boom. Thanks for your interest; I had almost given-up. terrypr34@gmail.com.

Dear Editor

I am a model yachts man and I make my own fittings. I'm looking for a manufacturer of stainless steel bearings and also a manufacturer who will construct a 'one-off' box to my dimensions.

I W Cooke (Birmingham)

## ● Response to Ian G. Todd's steering issues in last month's Reader's Letters

Dear Martyn

The problem experienced by Ian with his TID tug and coaster is a common problem with models and full-sized ships, and is easily put right by trimming down aft. If the keel is a little (more) deep aft than forward, it will become more directionally stable - ahead!

I had the same problem with an old tug hull my dad made 80 years ago, when I restored it, trimmed with the with the keel to too level. 4ft long with a rather 'yachty' hull (very slippery, for low-powered steam in the 1920's) with a large deadwood and big rudder, one would think it would be stable. But with the keel sloping just half an inch (i.e. 1:100) it veered all over the place, even when towed from fwd. Trimming down aft just another half inch (to 1:50) made it steer sweetly.

My Master Mariner brother's ship-handling notes describe this, and also detail the problems of interaction with the bottom, other close ships and banks - very relevant in canals! The bow and stern are pushed away and mid-ships sucked closer, so tricky! A lot of skill needed, or go slow!

Hope this helps - Mike Purser





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# Test Bench

A round-up of all the latest kits, books and blingy bits

Test Bench is a service that we provide free of charge to manufacturers, distributors and retailers of model boat-related product. Covering all disciplines, anything from books to balsa is accepted for these pages. To submit material, e-mail the editor via [editor@modelboats.co.uk](mailto:editor@modelboats.co.uk) with the relevant information or send samples direct to the editorial address in the front of the magazine.



## Revell 1/1200 125 Years Hurtigruten

2018 saw the 125 anniversary (1893-2018) of Hurtigruten, the Norwegian cruise, ferry and cargo operator giving Revell a very nice excuse to produce this pleasing box set. The subjects are the MS Trollfjord and her sister ship the MS Midnatsol launched in 2002 and 2003 respectively. Packed in their only little bundles, each ship is approximately 11.3cm long and despite the scale, and contain a good amount of detail. The set also includes six Revell paints, glue and brush, a decal sheet, a full colour A4-sized, 16-page instruction booklet and an A3 poster of the artwork from the front of the box. There are very few differences between the two vessels and each are built over 17 stages. While comprehensive

for 1/200 scale, you will most likely spend considerable more time painting and finishing them, especially if you want to make a crisp job of applying the small decals as well. As the subject of big liners and equally big ferries continues to grow in the model boating world, this great little set may sow the seed for progression onto a much bigger version. Good value for money and two kits rather than the usual one should tempt many.

Thanks very much to Revell for sending Model Boats this kit. Revell model kits are available from all good toy and model retailers. For details visit [www.revell.de/en](http://www.revell.de/en).

**MC**

**Product:** Construction kit  
**Ref:** 05692  
**Scale:** 1/1200  
**Parts:** 85  
**Price:** £17.99  
**Manufacturer:** Revell  
**Website:** [www.revell.de/en](http://www.revell.de/en)

## Proxxon Thermocut 650

With its HQ located at Wecker in Luxemburg, Proxxon have been producing high quality, fine power tools for model makers and the like for several decades now. Proxxon has a wide-ranging and diverse catalogue of tools which stretch from spanners through to lathes; the vast majority of them relevant to the boat modeller.

One particular tool that I tried, semi-successfully, to create as a youth, was a hot wire cutter; Proxxon's version being called the Thermocut 650 and it not only looks better than my effort but appears to work better as well! With an adjustable cutting length of between 400 and 650mm (presumably the latter figure is where the model number comes from) the Thermocut can heat a 0.2mm cutting wire through a range of 100 to 350°C. The latter is controlled by a regulating knob, one of only two controls on the device, the other being the on/off power switch. There are no temperature figures on the regulating knob so you will need to take some time getting used to the device from a heat control point of view. However, it will be worth the effort, because once you have the correct temperature for the appropriate material

the Thermocut 650 will slice through Styrofoam, styrodur, polyurethane and a multitude of other aerated plastics like the preferable knife through butter. The general rule of thumb and a good starting point is that medium heat combined with medium pressure will slice through most types of foam. A versatile piece of kit, the Thermocut 650 is best used on its back, with a supplied clamp holding it to your bench leaving your hands free to guide the media through the hot wire.

Supplied with a spare role of 0.2mm x 30m cutting wire (No.28080), the Thermocut 650 is a typical high-quality Proxxon product. Easy to set up, easy to use, this will be the only wire cutter you buy for your workshop.

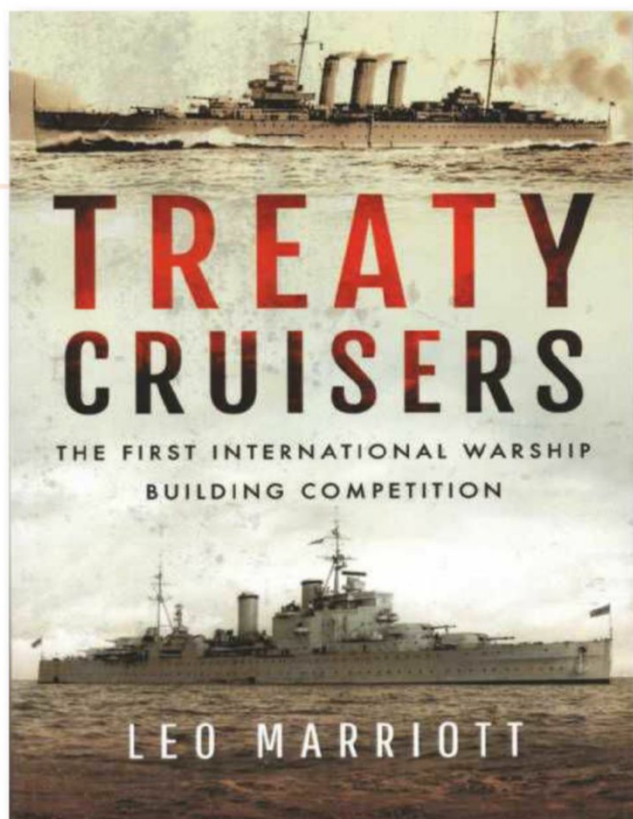
Thanks very much to Jacqueline Hunt of Axminster Tools & Machinery for supplying Model Boats with this sample. Visit [www.axminster.co.uk](http://www.axminster.co.uk) for the full range of Proxxon tools and much, much more!

**MC**



**Product:** Hot Wire Cutter  
**Ref:** 27084  
**Price:** £73.96 (Axminster)  
**Manufacturer:** Proxxon  
**Website:** [www.proxxon.com](http://www.proxxon.com)





**Treaty Cruisers –  
The First  
International  
Warship Building  
Competition  
by Leo Marriott**

The Washington Naval Treaty of 1921 and subsequent treaties in the 1930s effectively established the size and composition of the various navies in World War II. In particular they laid down design parameters and tonnage limitations for each class of warship including battleships, aircraft carriers, cruisers and destroyers. With one or two exceptions, battleship construction was deferred until the mid-1930s but virtually all navies embraced the concept of the 8in gun-armed 10,000 ton heavy cruiser and laid down new vessels almost immediately.

In this book Leo Marriott, one of Britain's most respected authors on naval history, traces the political processes which lead to the treaties, describes the heavy cruisers designed and built to the same rules by each nation and then considers how various classes fared

over the course of the World War II and assesses which were the most successful. Over eighty black and white photographs and profile line drawings of ships from the navies of Britain (County Class), France Duquense, Suffren and Algeria Classes), Italy (Trento, Zara and Bolzano Classes) Germany (Admiral Hipper Class), the USA (Pensacola, Northampton, Portland, New Orleans, Wichita and Baltimore Classes) and Japan (Furutake, Asoba, Myoko, Takao, Mogami and Tone Classes) are included. Appendices cover construction tables, together with the career history of each ship, technical specifications, armament and aircraft carried. Originally published in 2005, this 2019 version continues to be a must read for both naval historians and warship modellers alike.

Many thanks to Charlie Simpson at Seaforth Publishing for the review copy of the book which is available at [www.seaforthpublishing.com](http://www.seaforthpublishing.com).  
**John Deamer**

ISBN: 978-1-5267-4850-9

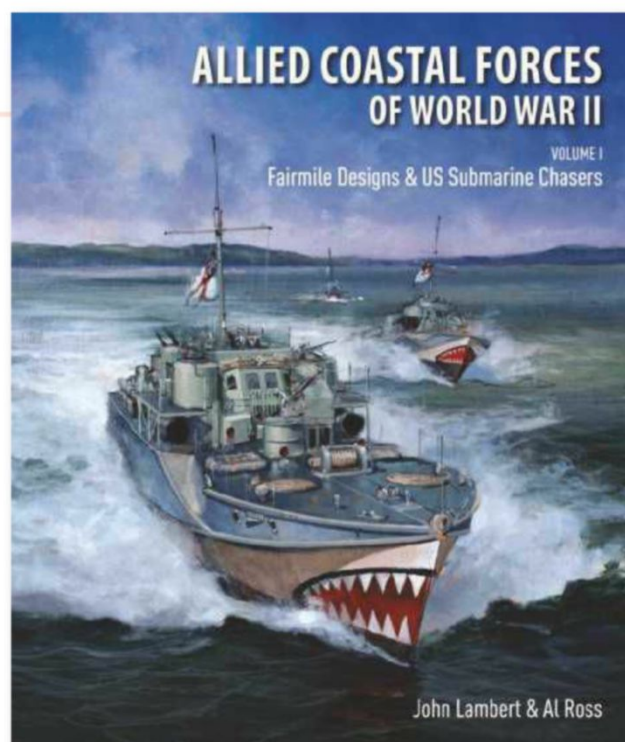
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**Allied Coastal Forces  
of World War II –  
Volume I Fairmile  
Designs & US  
Submarine Chasers  
by John Lambert  
& Al Ross**

The major contribution made by Coastal Forces to the Allied war effort has always had surprisingly little coverage. Yet, motor torpedo boats, PT boats, launches and submarine chasers served with distinction in every theatre, throughout the War. They performed invaluable service as patrol boats, convoy escorts, minelayers and minesweepers, harbour defence vessels, light landing craft, RAF rescue boats and transport for agents and clandestine missions.

First published in 1990, this now classic work remains the only publication to deal comprehensively – in words, photographs and drawings – with the technical details of all these boats. Design, construction and subsequent developments are all covered, and the builders, construction

lists, fates and technical data are given for each type. Separate sections cover armament and equipment, sea going qualities and habitability.

This first volume\* covers all the designs of the Fairmile Marine Company (including those craft built and equipped for Canada) together with the 72ft Harbour Defence Launch and the US Navy 110ft Sub-Chaser.

The authors, John Lambert and Al Ross, firmly established and recognised authorities on small warships have included a remarkable body of information, together with their finely detailed drawings, redrawn from the original builder's plans, to offer the reader an unparalleled view of these remarkable vessels. This new edition of their work will be welcomed by both naval enthusiasts and modellers alike.

Thanks go to Charlie Simpson at Seaforth Publishing for the review copy of the book which is available at [www.seaforthpublishing.com](http://www.seaforthpublishing.com).  
**John Deamer**

\*Volume II – Vosper MTBs & US Elcos – is due for publication shortly!

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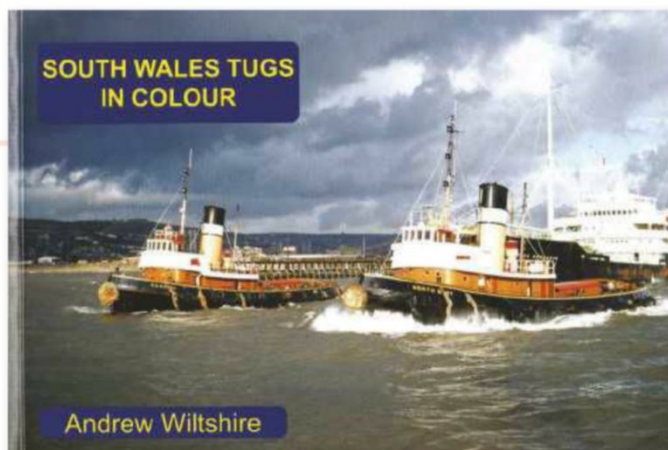
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### South Wales Tugs in Colour by Andrew Wiltshire

Tugs are the workhorses of the maritime world. Their main work is ship-handling but they have many other roles too. In this, the latest book in the 'Tugs in Colour' series, the author Andrew Wiltshire, one the UK's leading



writers on maritime subjects, takes a close look at tugs, both past and present, in the South Wales ports of Newport, Cardiff, Barry, Port Talbot and Swansea. He follows the changes as tug ownership has moved from local companies to national and multinational organisations.

The changes are illustrated by over a hundred superb

### Iwata Smart Jet Compressor

I have recently been sent the Iwata Smart Jet compressor (Model No. IS-850) from The Airbrush Company based in

Lancing, West Sussex. Having used their Sprint Jet compressor for over eight years with some very good results, I was very interested to see how the Smart Jet compares. The two are very



similar in looks but the Smart jet has the added feature of cutting off when the airbrush trigger is not being pressed. This gives an advantage of reducing wear and tear on the compressor. You can see from the images that the Smart jet doesn't have an air storage tank; in its place is a coiled hose which connects between the

compressor air outlet nozzle and the glass moisture trap. This hose serves two purposes, it helps to cool the warm air being fed from the compressor thus reducing the amount of moisture and, it holds enough air to smooth out the pulses from the single piston.

The IS-850 compressor came packed in a strong cardboard box with expanded foam partitions to prevent any movement during transit. Inside you have the compressor, the coiled hose and the hose which attaches to your airbrush, a spare foam filter and a set of adaptors for use with Badger, Paache and Aztek airbrushes. You will also find the pressure gauge, which is fixed to the moisture trap and a large rubber 'O' ring which, after the moisture trap has been slotted into place in the support bracket, slides up and sits into a recess in the trap holding it in place and a A5-sized instruction booklet. It weighs 3.8Kg and is equipped with a 1/8th HP





colour photographs, each photograph is accompanied by an informative caption that gives the reader some insight into the specification and career history of each tug, including the propulsion type, the power output of the engine(s) (in bhp), together with where it was built and who it was built for, when it was

launched, as well as changes in name and ownership and where possible, its last known location or, in the case of older tugs, final disposition.

Tugs have always been a popular modelling subject, so this well presented, meticulously researched and reasonably priced little book is a 'must have' for both

model boat builders and tug enthusiasts alike.

Many thanks go to Bernard McCall at Coastal Shipping

Publications for the review copy of this book which is available at [www.coastalshipping.co.uk](http://www.coastalshipping.co.uk)  
**John Deamer**

**ISBN: 978-1-902953-93-9**

**Pages: 96**

**Price: £9.95 (RRP)**

**Format: Softback - 157 x 235mm**

**Website: [www.coastalshipping.co.uk](http://www.coastalshipping.co.uk)**



motor which operates the single piston. The compressor uses a Polytetrafluoroethylene (PTFE) gasket to seal the piston chamber which means it runs with very little noise (50 Decibels).

The moisture trap helps to remove troublesome condensation from the air supply which may not have cooled down enough when passing through the coiled hose. Damp air passing through your airbrush with the paint can cause it to spatter and ruin what could have been a good paint job. You will need to drain the trap regularly to avoid excessive build-up of moisture; this can be done by turning the air adjustment knob in the direction of the minus sign this will open the bleed valve and allow the trapped moisture to escape.

With the two air-lines connected and my Iwata HP-C airbrush attached, it was time to give it a go. The compressor is controlled by a small rocker type switch situated on top at the rear, out of the way of any

potential spillage. To set your desired working psi, you turn the compressor on and then press the trigger on your airbrush, you then adjust the psi using the air adjustment knob on the bottom of the moisture trap either towards the + or - while keeping the trigger on your airbrush depressed. The feature that makes the IS- 850 'smart', is the auto shut-off switch which is the black cylindrical object sat beside the moisture trap. When the compressor is running for any length of time it has a tendency to get hot and could overheat. There is a thermal overload switch built in to the compressor for this very reason, it will turn it off and let it cool down before automatically resetting itself. When the compressor was turned on, there was very little in the way of vibration, the vast majority of it is absorbed by the four large rubber suction pads it has for feet; even with the air pressure high the compressor never moved. I have said the C-IW-

SMART is virtually maintenance free, but regular checks have to be carried out on the small air filter situated on the side of the main body. To change or inspect the filter simply pull the black tag and remove the sponge filter and replace it with a new one.

I have three airbrushes that I use, an Iwata Revolution CR fitted with a 0.5mm nozzle, an Iwata HP-C+ with a 0.3mm nozzle and finally a Neo for Iwata TRN1 fitted with a 0.35 nozzle. I wanted to try these three out as each one is different and as such perform differently. I tried each one in turn, starting off by using Acrylic paint from Tamiya, Hobby Color and Lifecolor; I set the air gauge to 15psi and sprayed a test piece I then moved it up to 20psi and sprayed again. The

results were first class with each airbrush, although I did have a small problem with the Neo for a start but I think that was more than likely down to me not being use to the pistol type grip. I then cleaned out each AB and tried the same exercise out using Humbrol Enamels; again good results all round. Unfortunately I couldn't try them with lacquer based paint as I have an adverse reaction to it. For more information about Iwata Products please visit The Airbrush Company web site at [www.airbrushes.com](http://www.airbrushes.com).

I would like to thank the editor and the folks from The Airbrush Company for handing me this compressor for review. Thank you all very much.

**Gary Radford**



**Product: Air Compressor**

**Ref: C-IW-SMART (IS-850)**

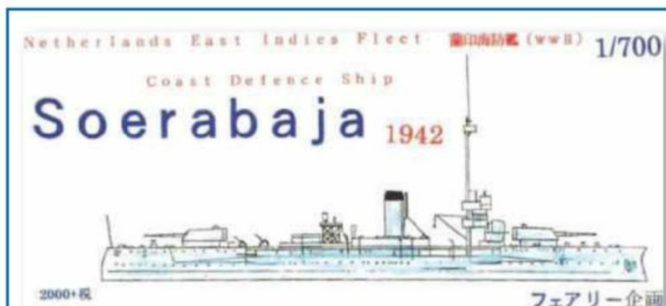
**Price: £239.00 inc. VAT (The Airbrush Company)**

**Manufacturer: Iwata**

**Website: [www.iwata-airbrush.com](http://www.iwata-airbrush.com)**



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### Fairey Kikaki 'Soerabaja'

Ref: S059 or FIRS059  
Scale: 1/700  
Price: £14.35 (HobbyLink Japan)  
Released: Jan 2019  
Notes: Resin & White Metal -  
'Netherlands East Indies Fleet' (New Tool)



### Pit-Road Aegis Destroyer (DDG-173) Kongo

Ref: JB28E  
Size: L: 460mm  
Scale: 1/350  
Price: £62.00 (Hobby Search)  
Released: Jan 2019  
Notes: Updated/New Parts

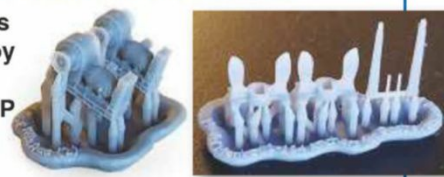


### EV Model HMS Type 26 City-Class Frigate

Ref: S031  
Scale: 1/700  
Price: £?  
Released: Future  
Notes: Resin, New Tool

## Model Monkey Boat Winches & Anchors

Ref: 164-boat-winches  
& 162-anchors-destroy  
Scale: 1/164  
Price: Approx £7 + P7P  
Released: Jan 2019  
Notes: New Tool



### Eduard Enterprise (CVN-65) Pt.4 Detail Set

Ref: 53236  
Scale: 1/350  
Price: £35 (Hannants)  
Released: Feb/Mar 2019  
Notes: New Tool



### Snowman Model Scharnhorst 1943

Ref: SP-7008  
Scale: 1/700  
Price: £?  
Released: Future  
Notes: New Tool



### Airfix R.M.S Titanic Gift Set

Ref: A50164A  
Parts: 141  
Size: L385mm.W43mm  
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Price: £29.99  
Released: Future  
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## ● Type 42

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HMS Edinburgh (D97)



## ● Crusader

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## ● Alexandra Palace show report

The London Model Engineer Exhibition 2019



## ● Christiaan Brunings

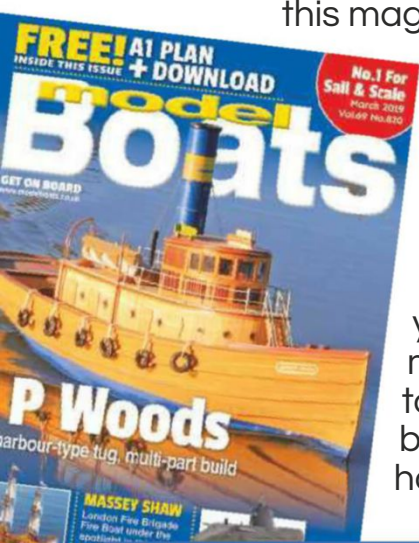
Allan Miller builds some Dutch maritime history

See more about what's in magazine month-to-month in forthcoming issues and see some of the articles you may have missed from past issues and subscription offers on our website: [www.modelboats.co.uk](http://www.modelboats.co.uk)

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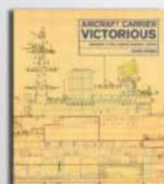
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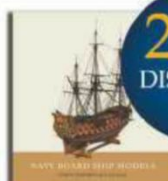
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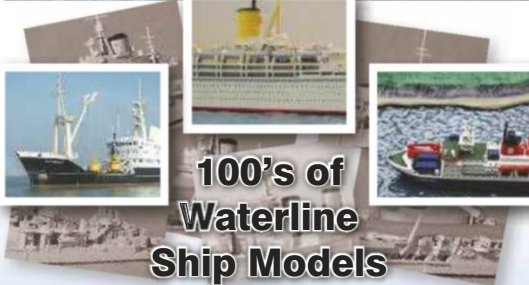
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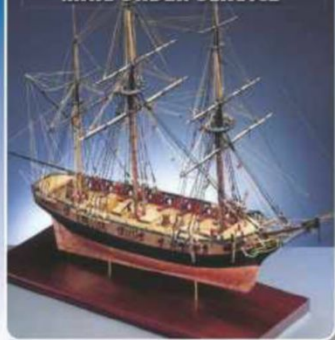
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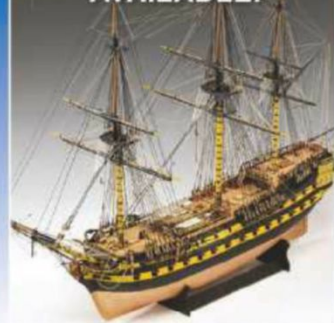
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|                                 |         |
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| Buccaneer 1:100 Scale            | £89.95  |
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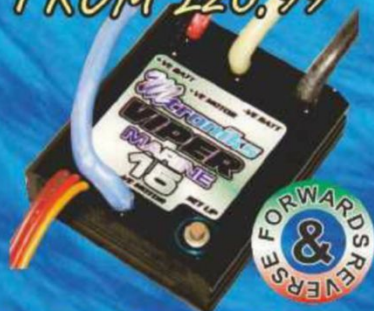
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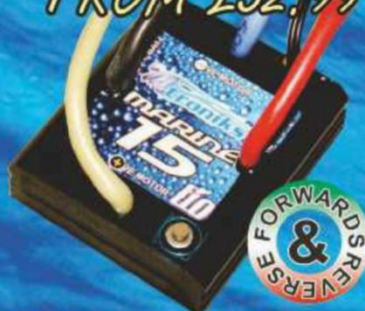
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