

**INSIDE
THIS ISSUE**

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**No.1 For
Sail & Scale**

January 2020
Vol.70 No.831

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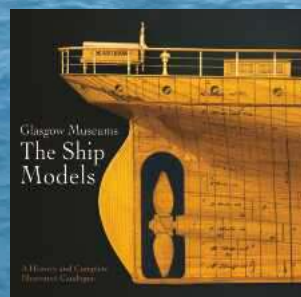
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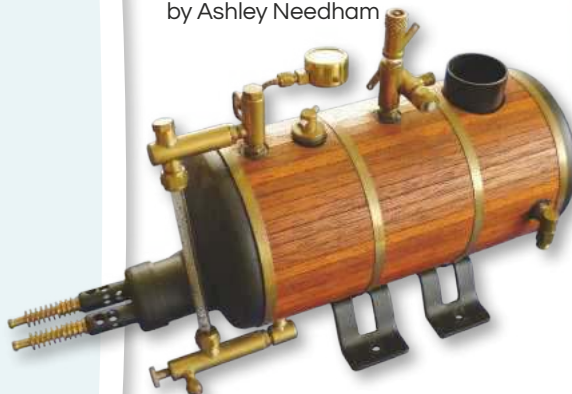
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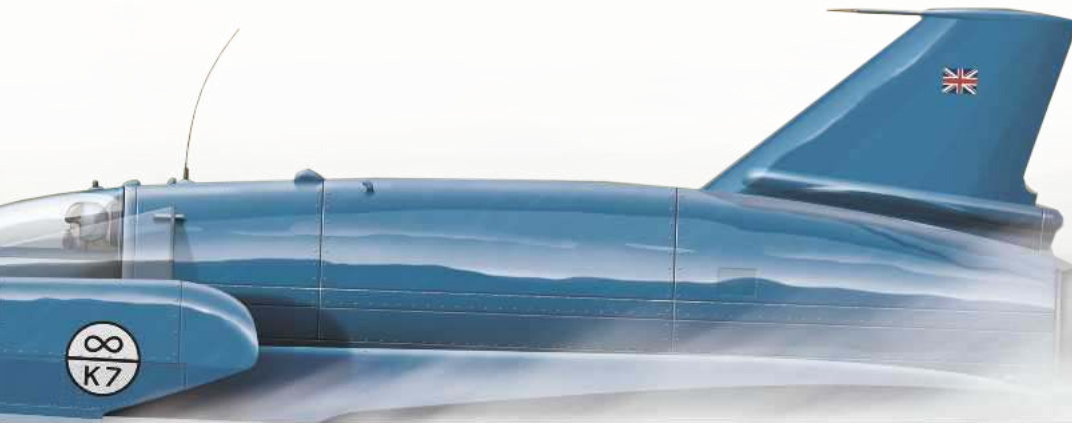
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Welcome to the final edition of Model Boats magazine for 2019; a year, for myself at least, which has rocketed by! Despite doubling my usual annual mileage in the process, I am still no nearer to visiting the many clubs that I planned in my head to visit; hopefully I shall make that up next year. I've already lost count of how many shows and events I have been to and without exception have enjoyed everyone, thanks in part to the increasing number of familiar and friendly faces who partake in this broad hobby. 2020 will be no less busy and the calendar is already beginning to fill, so once again, if you would like me to pitch up for an open day or similar event, you need to 'bag' me early; I'm a first come, first serve editor! There was one weekend last summer when I was invited to four events, ranging from 100 to 500 miles away!

This issue is packed to the gunnels with 14 articles, some written by familiar names supported by a few new comers. As always, if you fancy having a crack at writing an article, please do not hesitate to contact me and, however obscure or eccentric the subject matter is, I will still be most likely interested. You only have to take a look at the Jam Jar Submarine on Page 48; pure genius! I am always drawn to such builders and once the laughter has died down, the questions begin to flow and the ideas start to germinate and by the time you have got home from the pond your own design will have formed in your head which may lead to your own amazing craft!

That just leaves me to say thank you to all the great people who have supported us throughout 2019, including those who have committed to a subscription and as a result our figures continue to rise and secondly, to wish you all a very Merry Christmas and a Happy New Year; see you all in 2020.

Martyn Chorlton

Compass 360

Our news round-up from the model boating world

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St Austell Model Centre's Model Boat show in support of the RNLI

Saturday, 2 November, 2019 saw St Austell Model Centre's first Model Boat show all in aid of the RNLI. The show was made up of clubs and exhibitors from Cornwall and Devon putting on fantastic display of boats of all types. There was even a lad showcasing his talents with his grandad's 3D printer to produce stunning scale parts for one of their member's boats. The RNLI

didn't hold back and put on a great display with their stand and huge inflatable Shannon Lifeboat (it must be said really looked the part and set the scene as you walked up the stairs to the show.) Throughout the day they saw plenty of visitors and managed to raise a total of £200 for the great cause. When talking with Alex Dowell – owner of St Austell Model Centre and the organiser – he stated:



"I can't thank the exhibitors and clubs who attended enough for putting this fantastic show on! I would also like to thank all the tenants as well as the

board of the Market House for their cooperation and support as without it this wouldn't have been possible".

Alex Dowell

London Model Engineering Exhibition, Alexandra Palace, London, 17-19 January 2020

Now in its 24th year, the popular London Model Engineering Exhibition returns to the iconic Alexandra Palace, London. Often regarded as one of the top model engineering shows in the UK, this leading exhibition for model engineers continues to enthral visitors and enthusiasts alike with thousands of scale models from the early age of steam engines right up to today's modern marvels.

The 2020 event will be packed with over 2,000 models built by individuals, clubs and societies, from traditional model engineering like locomotives, train layouts and traction engines to large collections of scale model ships, aircrafts, tanks and militaria to remote controlled trucks and even James Bond models and memorabilia!

This year's show pays a special tribute to the emergency services and armed forces. Over 500 emergency services and armed forces models will be displayed throughout the hall.

In commemoration of the 80th anniversary of the Battle of Britain, IPMS Barnet Model Club will showcase a display of model tanks, tri-planes, Fokker planes and associated military British and German infantry figurines, plus armoury and battle machines. The Surface Warship Association also return with a large collection of scale model warships representing all periods, types and nationalities - many of which built by retired or current service personnel.

Always a show highlight is the Royal Spithead Review, a set of over 750 tiny 1/1200

scale models of iconic ships including near every significant historical vessel over 3,000 years of maritime history. A notable model is the Mayflower, which commemorates the 400th anniversary of its pioneering voyage in 2020, and Darwin's HMS Beagle. 2020 also marks the 40th anniversary of this labour of love for Jack Snary, a former engineer from Hertfordshire. Each ship takes about 40 hours to construct and cost about 50 pence per boat in materials but the collection is insured for a staggering £75,000! Jack

has also inspired his grandson to take up the hobby and his collection already consists of over 250 models!

Over 45 clubs and societies will be displaying their members work each vying to win the prestigious Society Shield. Plus, all the leading specialist suppliers will be on site providing an excellent opportunity to seek advice from industry experts and compare and purchase everything you need under one roof!

For further information or to book tickets, please visit: www.londonmodelengineering.co.uk. Dates & Times: Friday 17th – Sunday 19h January 2020; Open 10am – 5pm Friday and Saturday and 10am – 4.30pm Sunday; Last entry is 4.00pm Friday and Saturday and 3.00pm Sunday; Model Active Zone closes at 3.30pm on the Sunday; Cash Box opens at 9.00am each morning before the event opens at 10.00am.





LEFT: Setting up the model display in the lakeside pavilion.

Colorado Crew/Keystone Regatta 2019

The Annual Regatta of the Colorado Crew Model Boat Club took place on 24/25 August, 2019 at the Keystone Resort in the heart of the Rocky Mountains of Colorado. We sometimes casually refer to this event as the 'High Seas Regatta' as Keystone Lake is located at 9,321ft asl.

This is the sixth year the Annual Regatta has been held at Keystone Lake. Keystone Resort has been extremely supportive of the event, providing their lakeside pavilion,

closing off part of the lake for our exclusive use and even setting up tables with tablecloths for the models on display. The event is open to the public and many people, especially families, stop by to view the models on display and on the water.

We do present First Place in class, and Best of Show awards on the second day of the regatta. We classify the entries into the following categories: ML Military, Large; MS Military, Small; WB Work Boat; CV Commercial Vessel; PB Pleasure

Boat; SM Submarine, Modern; SW Submarine, WWII or earlier and SV Specialty Vessel. Each class is judged by the entries in that class to decide the first place winner, and each entrant is given one vote for the Best of Show.

The 'Crew' has been in existence for over 30 years, and a good number of the original members are still building and sailing some of our most high quality models. Several of the models have won national awards at other events across the United States.

Last spring we decided to look into Club 500 racing and bought seven kits through the club. Only three made it to the regatta, and we spent most of the time just getting used to going fast. When you sail tugs and steamers, the change in speed takes a little getting used to. So this year was for 'demonstration' and next spring we may get more formal.



A future Captain in training.

We got out on the water early after breakfast on Saturday and sailed all day until dusk, finishing up with a nighttime sail. Sunday saw more time on the pond, and at noon we voted on the craftsmanship of the members' boats. Our annual member dinner followed at a local restaurant.

Now that winter is approaching, and, so far, no one in the club has built an Icebreaker, we will be moving our monthly meetings indoors and share knowledge and building tips for next season.

Jim Pope and Donald Kibbe

2019 BROADLAND TROPHY & Eastern District Marblehead championship - GAMES 11

18 races were sailed on the Little Broad at Filby, hosted by The Broads Model Yacht Club. Racing started in a very light wind from the North, which is the most favourable direction at Filby, but veered towards the east in the afternoon. There were 3 different race winners, during the day, but Colin Goodman (Grunge), Duncan Ellis (Grunge) and Vinnie Zammit (Starkers Cubed)

gradually established a lead over the remainder of the fleet. In the end Colin's consistency won the day, after some very close and competitive racing. Colin has now established a big lead in the GAMES series, but the other podium positions and improver's prize are still to sail for in the remaining two events at 3 Rivers and Guildford Model Yacht Clubs. **Broads MYC & Roger Stollery**



ABOVE: Leading boats approaching the leeward gate marks. RIGHT: Colin Goodman being presented with the district champion's plate by Vinnie Zammit.



Top 3 results:

Pos.	Skipper	Club	Yacht	Points
1st	Colin Goodman	Chelmsford	GRUNGE	18.5
2nd	Duncan Ellis	Norwich	GRUNGE	28
3rd	Vinnie Zammit	Norwich	STARKERS	37

International MODEL BOAT SHOW Featuring TAMIYA TRUCKIN

The annual International Model Boat Show was sure to please last November at the Warwickshire Event Centre. The event hosted thousands of visitors, treating them to an extensive display of the wonders that marine modelling can offer. The incredible variety of models, from early warships to modern power boats and ships, was only magnified by the beauty of

seeing them on the water with a large indoor pool available for those feeling brave enough to take to the helm!

Over 600 models from a variety of clubs and societies were in attendance, with their makers at hand eager to answer any questions. Such was the high calibre of impressive models on show, it must have been very hard to

judge which club was going to be taking home the sought-after Society Shield. In the end it was Worcester Model Boat Club who managed to net the 1st prize trophy! In second place was Wicksteed Park MBC and in 3rd place was the Lifeboat Enthusiasts' Society.

It was spectacular to see sparks of inspiration twinkling away in the eyes of so many, across all generations. After seeing the static models, visitors came together around the pool to view, and join in with, the live action.

The event offered more than a fun day out too, specialist suppliers were present to provide visitors with everything they could need for their own builds.

Don't miss out; make a note of next year's dates now! The International Model Boat Show 2020 will be held on 7/8 (Sat & Sun) November at the Warwickshire Event Centre.

Can't wait till then? The next major event for marine modellers is the London Model Engineering Exhibition which takes place at Alexandra Palace from the 17th to 19th January 2020. The exhibition showcases a vast range of models from across the spectrum including marine vessels. See www.londonmodelengineering.co.uk for further details.

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HMS London

A 90 gun c1840,
ship of the line by
Ashley Needham

HMS London was a Rodney class 90-gun second rate ship of the line launched on 28 September, 1840 at Chatham Dockyard. In 1854, London took part in the bombardment of Fort Constantine at Sevastopol during the Crimean War, where she sustained several hits causing damage. Four years later she was converted to screw propulsion and reduced to 72 guns.

I have always wanted a 'traditional' two or three deck square rig ship, but have never mustered the enthusiasm for all that plank-on-frame work. Surely there must be an easier way to get the look of this sort of vessel on the water? Well, there is, read on! As usual, I am not building a replica; this is strictly stand-off scale.

HMS London

The choice of a HMS London is in part due to its relatively later 19th century build. By this time, Sir Robert Seppings had been in charge of Admiralty construction for a few years and had introduced, amongst other things, the round stern and stern as a design feature to the larger warships, nothing more complicated than simply carrying the thick hull planking to full height. Previously the hull planking had stopped at the bottom of the upper deck gunports and a separate bulkhead of much thinner construction was used, this same weakness manifesting itself at the stern, with a thin aft facing section well perforated with windows. London has a semi-round stern as, the admiralty did not like the look of the fully rounded stern as it made the captains quarters comparatively small, so a compromise was reached. This also allowed more protection to the rudder which was lacking with a fully round stern.

Secondly, and perhaps most importantly, the vessel was converted to steam propulsion

in 1858 and this adds interest as most square rig ship-of-the line type models are not so equipped and it allows me to legitimately fit a propeller to assist the propulsion of the model, square rigged models being indifferent sailors, without being accused of cheating! These ships were known as 'Liners' in their day, indeed the term 'battleship' was not commonly used, and this comes from the phrase 'ships of the line', a reference to the usual formation used in battle.

Design brief

The intention was to build a ship-of-the-line using the least amount of planking possible. Various line drawings and pictures were used to make a prototype model, to test the one-plank theory. Using only card and a hot glue gun, a model was built and the main thing this particular model showed me was that the boat would need some tumblehome (the sides of the ship should slope inwards) or it would not look right. This meant having to use two pieces of ply per side, one around the top to give tumblehome and one covering the vertical portion just below the lower gun-port line to the bottom.

Construction

A line drawing (plan and side elevation) were obtained for a Rodney-class vessel and scaled to give a model of approx. 950mm by 150mm. A centre frame of 9mm ply provides both the backbone and prow for the ship and has been made 50mm deep underneath to act as a keel, and means I can clamp it in the work-mate whilst working on the hull. It will also be used to bolt the strip lead ballast to, ensuring the ballast is as low as possible and obviating the use of a full dropped keel.

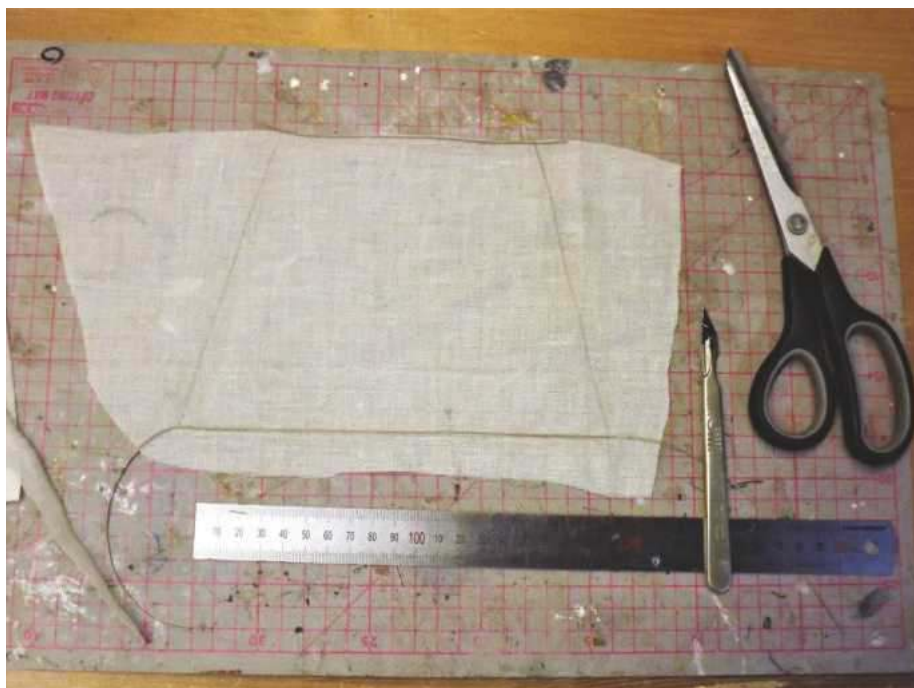
Three frames covering the parallel centre section were glued to the 12mm balsa sheet base that flanks the keel piece, the sides of which were cut to give tumblehome, starting approximately 90mm above the bottom board. At the stern, a 12mm sheet balsa slope has been glued in place and shape will be given to the stern by the gallery and deck bulwark (0.8mm ply) and by the addition of a 20mm thickness of Styrofoam down to the waterline. Mast positions were marked on the keel and footings made up and also at this time the propulsion and rudder were also fitted (see later).

I will be using 0.8mm ply for the sides, as this material bends quite nicely and is easy to set into a curve with the use of steam, supplied with nothing more sophisticated than a saucepan of boiling water and a ½ litre paint tin to bend the plank round for a few minutes to set the curve. Thin ply will form a very smooth curve if left to its own devices and not having too many supports behind it. Thus, having clamped the ply to the three parallel hull frames, the top ply plank was bent round to meet the prow (where a vertical square section strip had been glued) and the ply was moved either forward or back on the centre frames to achieve the right amount of curve, using the plan as a guide. Once I saw that a good shape could be obtained, I applied one side first, using PVA to fix the skin against the three centre bulkheads and superglue at the bow, and then the other side was attached to mirror the first. A slit, to the depth of the bulwark was made either side at the bow and the ends shortened and bent round to give the round front bulwark which will be trued up once the pre-cut deck is set in place. I know what you are thinking, that this method will not give an exact copy of a plan, but when the plan is laid next to the ship, you would be hard pressed to say that it was not an exact match. At the rear there is not a problem as the curve is slight, only needing to meet the flat stern riser.

Once both sides were dry and addition longitudinal supports had been glued in, the bottom sheets were applied, using the same technique. This time of course the top of the plank had to marry up with the lower edge of the first, but tabs applied to the bottom of the top plank made this easy and you cannot see the transition when finished. I was not over worried about the shape against the base board, as long as the halves were symmetrical. PVA and balsa strip was applied



ABOVE: Blue masking tape and painting stripes on the sides. BELOW: Trimming the muslin sails.



to gap fill and stiffen it all up. At the stern, the quarterdeck is raised, accomplished by applying a separate 40mm deep 0.8mm ply strip inside the bulwark, and the stern bend was made using ply that had been cut across the outer grain, making it very flexible. Deck gunports fore and aft were cut out and a capping rail of 2.5mm square section wood was superglued on top of the gunwale. Saw cuts for the 4mm ply gallery walks were made in the Styrofoam, and strips of Aluminium mesh provide the gallery windows and rails. Windows have been suggested by painting the mesh gold, and once glued in place, vertical black lines representing window frames were painted and at the normal viewing distance it looks very convincing.

Detail work

Other external detail is limited to the channels supporting the shrouds, the Cathead either side for the anchor and the 74 gun port lids: 14mm squares of 1.5mm ply for the main deck ones and 10mm squares for the poop deck, the larger ones having strips of paper about 2mm wide stuck on to represent the hinge straps. At the head curved strips of shaped 0.8mm ply support the beak which is crowned with a figurehead. Unfortunately the figurehead for HMS London was uninspiring: A female torso wearing a 'Tower of London'

hat, and this apparently follows form for ships figureheads of the period regarding vessels named after cities (a figure with a headpiece associated with the town). A truncated 1/32 railway figure of a lady has been used as she has the correct attributes for a figurehead, and a small wooden cube on her head represents the originals tower of London 'hat'.

Decking and ephemera

Decks are 4mm ply and the removable sections sit inside strips glued to the sides and are drilled to suit the mast positions. Humbrol, Natural Brown Wood (110) was chosen to contrast with the white inner bulwarks in bright light. Decks on these ships were relatively uncluttered: A funnel, gratings, capstan, ship's wheel, deck ladder hatches and a few cannon have been used to populate the deck. Deck gratings were purchased and wooden jewellery barrel beads, just 3mm in diameter with a 1mm hole do duty for red and natural leather buckets and larger 7mm diameter by 11mm barrel beads serve as, well, barrels! Along with the crew, they add a touch of colour to the otherwise plain deck. Cannon barrels have been left incorrectly bronze as when painted black you could not see them.

Although the liner is a nominal 1/72 scale, I decided that model railway workmen



Testing the propulsion, steering and balance.

figures at 1/87 looked very fitting and I have approximately 70 figures on deck, painted simply in dark blue/white. They add tremendous interest, the white jerkins showing up particularly well on deck.

Propulsion and control

I have fitted a 2.5:1 geared MFA gearbox unit powered by a low power 540-size motor and a 2-blade 60mm prop was made for me by George Sitek and is of the correct early style. A 5mm diameter prop shaft and a brass/silicone coupling connects the two together via a 15A Mtronics Viper ESC. At the rear, the steeply sloped stern overhang precluded fitting a normal rudder post and so have used a 'hook and eye' system. Eyes set in the keel are used to hook the rudder on to the stern post, the rudder having bent brass wire hooks for the purpose. A tiller bar pushes into the rudder top and is waggled by a long armed servo. In total the equipped hull weighs approximately 1.9Kg.

Masting matters

Masts were made from 9mm and 6mm wood dowel, with 4mm yards and are de-mountable in order to assist storage. Yards and mast tops have been tapered and the rig has been simplified. The masts (with fixed yards) sit in brass sockets which have arms soldered to them and are ganged together to a heavy duty servo by steel wire and adjustment is provided by joining the sections of wire together by an insert from an electrical connector block. Mast sockets sit inside a greased aluminium tube set onto the base and all the components were

chosen for a good sliding fit. All the masts have a steel peg at the bottom to engage in a small slot in the moving socket, so they retain the correct orientation. Masts are set vertically and are perfectly in line! I have made the masts of a height that look convincing, but they are too short for strict scale and in addition, higher masts would only exacerbate the heeling problem in a wind. At the pond-side, the masts slide through holes in the deck and engage with the slots in the sockets, and to cover the gap at the base of the mast a washer has been pre-positioned on the mast itself, painted brown, and this slides down the mast to sit in place on the deck tidying things up.

Rigging was applied to the masts using black linen thread, knotted and glued in place using a dab of PVA or superglue where necessary. My secret weapon for added interest was jewellery beads. Black 3mm and 4mm diameter beads stand in for blocks and deadeyes, as their round shape at a distance is all that's needed to suggest these items. Standing rigging, which needs to be detachable from the ship, is black shirring elastic and have hooks at the ends made from brass wire, similarly used for ringbolts and eyes.

First test

Before I went any further than completing the hull and motor installation, I thought that a quick test on the water would be in order. No point in proceeding further if my grand theories regarding keels and ballast were shown to be somewhat lacking. Coated in grey primer to just above the intended waterline with 3.4Kg of strip lead bolted to

the keel, the ship was lowered into the water. I turned the radio on and went for a quick motor around the pond. On a 9.6v Nimh battery pack and using a temporary 50mm 3-blade prop the ship was considerably faster than will be needed, and appeared to be quite stable. A few tablespoons of water was present inside, from the rudder tiller opening, but apart from that, a good first try-out.

Second test

This was conducted with additional ballast having been added to the keel in the final form using lead strip and now totalling about 5Kg (but not yet sufficient to bring it to the waterline), the new 60mm two blade prop and a raised tiller opening. Prop worked very well, stability improved just a bit but water was still slopping in from the tiller opening, and I after some discussion at the pond, the way forward will be to fit a 'water gutter' inside the stern with a sharply angled drain hole to get rid of any slopped water.

Back to the build, sails and string

I do not intend to sail the model, as such, propulsion will be by the steam engine (electric motor). Normally model ships of this type require deep and heavy keels to counterbalance the push of the sails, but this is something I do not wish to fit, and so the sails have been made from a very 'wind opaque' material - cotton muslin. Hopefully the muslin sails will give the required look when on the water and billow out nicely but at the same time not catch too much wind,

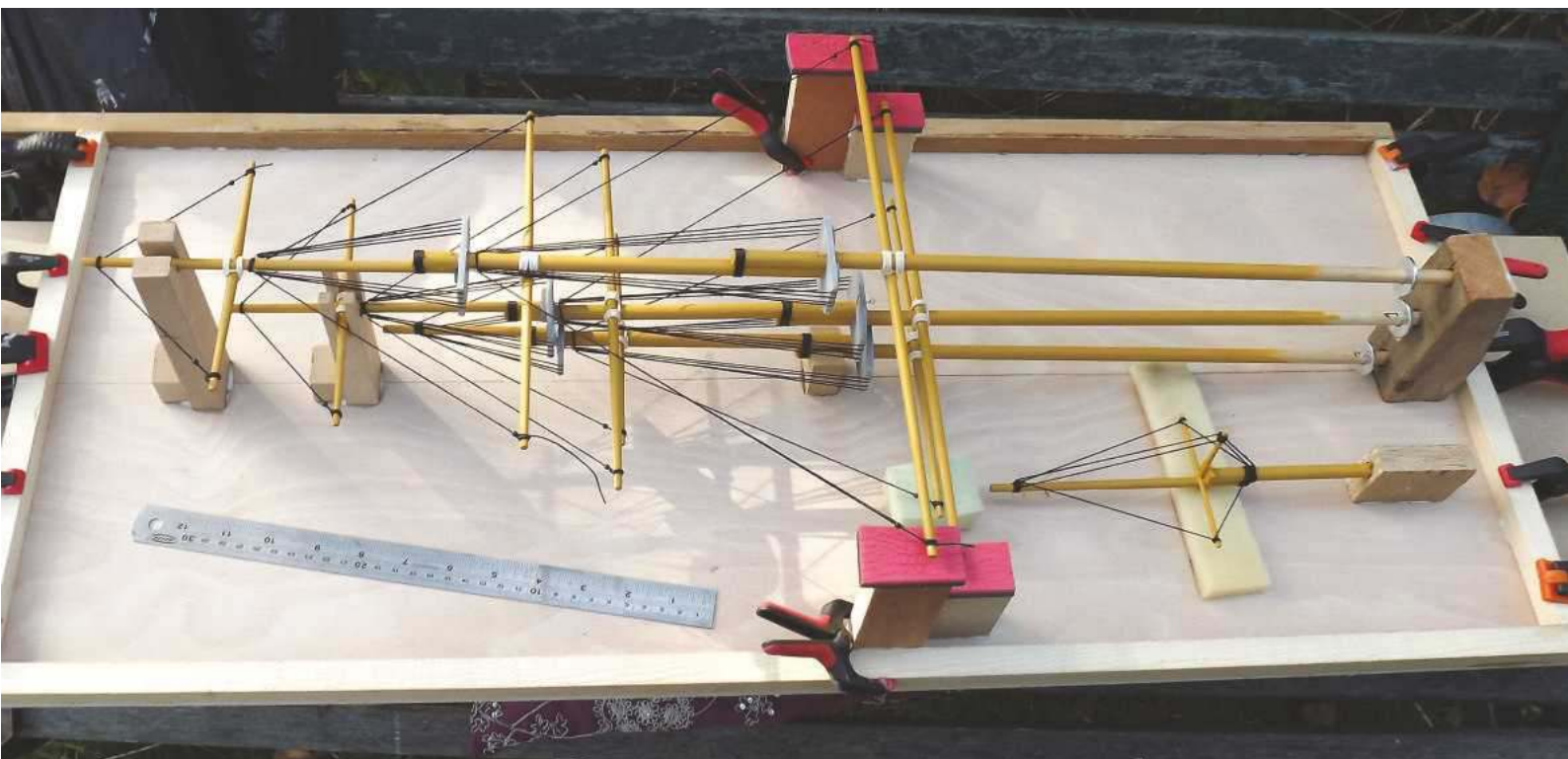


ABOVE: Shroud and ratline jig. BELOW: The bare masts in the storage tray.

decreasing leverage on the masts. My main worry was that the muslin is very transparent, and holding the cloth up you can see through it reasonably well. On the boat this would mean that masts and so on would be quite plain to see and the sail effect would be lost. However, it appeared that when viewed at a slight angle, the thickness of the cloth hides the fine holes in the weave and the material then looks fairly solid.

Templates of the sails were made using thin card; the muslin was pinned against a baking paper fronted building board (the baking paper is non-stick and works with PVA just the same as hot pastry!) on which the sail outlines were drawn in pencil. PVA glue was painted over the outlines to strengthen the edges and stop the muslin fraying when cut and brown rigging twine was glued to the top and bottom of the sails. When dry, the sail was 'detailed' with a fine black indelible marker and freed from the board by cutting with a craft knife just inside the pencil lines.

Once the hull was completed, the masts were seated in their sockets and three thick card templates were made in preparation for fashioning lower shrouds and ratlines. Using the templates, various parallel lines were marked on a bit of chipboard to mark the horizontal threads and nails were hammered in at the ends. Next, the template was placed on top in the correct position (so that the horizontal line marked on the template aligned with the pencil marks) and holes were marked so I could bash nails in at the top and bottom. Black linen carpet thread was then wound around the nails to form the vertical shrouds and white cotton thread was used for the horizontal ratlines. All the threads were raised





ABOVE: A few of the 70 figures on show. BELOW: Gun drill on deck.



clear of the board and PVA was applied to stick them all together at the intersections. At the top of the shrouds a jewellery magnetic necklace clasp had been attached and this secures them to the mast platform via magnetic action against a small piece of steel glued underneath. Finally, the assembly was cut from the frame with a scalpel and test fitted. Pairs of the 4mm beads were threaded on the loose ends before being glued into pre drilled holes in the shelves and these represent the two deadeyes which would have been used to tension the shrouds.

Upper shrouds do not have the ratlines on them and are permanently glued into position. Setting up the masting is very straightforward and is as easy as plugging the masts in, clipping the shrouds to the mast platform and then hooking on the various elastic ropes. After the standing rigging had been applied the sails were tied in place using brown thread, the bottom stays were then secured to the yards using wooden blocks (beads) as required. A small problem presented itself later on regarding the fore course sail (this is the big one hanging down from the lower fore mast yard). This, unlike the rest of the sails, is not tied at the bottom to a yard by sheets, but is free to sway in the wind, however, on one afternoon in the garden I saw that the sail was flapping unrealistically in the light puffy breeze and realised that the sail needed a bit of weight to act more realistically, and hit on the idea of replacing the bottom piece of rigging twine with a shaped steel wire stiffener. Duly fitted, this stiffness and weight maintains sail shape nicely, and is tethered in the centre to limit movement. Sheets were never fitted, the lack of which goes unnoticed.

In order to lessen the overall sail area, there is no sail on the main mast lower yard, however this then looked a bit bare, and a furled sail would be needed and discovered as many have before me that simply rolling up a bit of sail material and tying it in place does not look right. This is due to the weight of weight in model sail-cloth. Canvas is heavy stuff and will hang in nice swoopy layers when tied in a bunch, unlike modellers sail cloth. In order to get this look, I made a 0.8mm ply former and covered this with two layers of muslin. This was glued at the top, tied with brown rigging thread at the appropriate positions and using some artistic pulling and poking I managed to produce a 'partially furled' sail which looks remarkably convincing.

Sanding, sealing and painting

Once the hull had been given a couple of coats of Acrylic Eze-Kote resin and sanded, the final black/white coats were applied. Only six colours have been used on the ship: Artists Yellow Ochre acrylic for the masts, Hobbies Matt Black Acrylic for the hull with Rustin's quick-dry white primer for the stripes in way of the gunports and the bulwark inner faces, Humbrol Natural Wood (110) for the deck and lastly Rustin's external grade acrylic gold paint. At first it did look a bit odd, the white



The figurehead with all the correct attributes!

gun-port stripes, as the most famous liner left standing (the Victory) has yellow ochre stripes, and this is what most people expect to see, but no, white was the colour in use

at the time. Unfortunately the downside of acrylic is that it tends to be a bit thicker than oils and dries very quickly, leading to lumps and brush marks if you are not careful/quick.

I could have achieved a better close-up paint standard using proper model makers paint, but this is a first for me, large scale use of Acrylic, and a bit of a learning curve.

Is that a pirate ship in the distance?





The sails filled with wind.



Third test and public maiden voyage

On a calm bright sunny day with a 9.6v Nimh battery in the hold, the liner was offered into the water in all her glory, glory being the right word here because the effect of the ship at ten paces is all I could have wished for. In the sunlight, the black and white stripes are very striking, the gold peeping above the water adds a bit of sparkle to the boat, and the sailors show up nicely on deck! No drama was anticipated, although without much breeze the stability of the vessel was not going to be tested. It was suggested by pond-side boaters that a second jib sail would add a bit more gravitas to the front end, so this was added to the to-do list. At the end of the session there was no water inside the hull, so the modifications to the tiller exit have done the job.

As for sailing properly, this appears to be a non-starter, for the very simple reason that the rudder is not big enough and had no effect at all when the power was off! Applying minimum power to the prop seemed to work ok, restoring rudder effect, but then of course it wasn't actually sailing! When there was some wind, you could see the sails fill, and notice that the ship picked up speed, when facing into the wind, considerable power had to be applied to stop the ship going backwards. Thankfully the muslin was fairly convincing as sailcloth even with the bright sun, being decently opaque.

Reversing appeared to be possible, albeit slowly as water was thrown up

enthusiastically at the stern, threatening to flood the interior via the tiller opening, and was useful when on a lee shore.

Manoeuvrability at the normal pedestrian pace is perfectly adequate but in any sort of wind, large dollops of power are needed to maintain steerage. Battery consumption is minimal as befits a low power motor and geared drive.

Absolutely the final test & finale

This took place in very blustery conditions in order to fully test the stability of the liner and this showed me two things. Firstly, stability was excellent. At no point was the London on the verge of turning over but secondly the shrouds were ping-pong and I realised that flexing of the masts was the issue, therefore the magnets were replaced by very small short springs and hooks on the platforms.

Success all round I think. The London looks sensational on the water for the minimum of planking. Over a period of months sailing the liner on the pond, the vessel has remained almost stubbornly upright even in gusty conditions, vindicating the choice of sail material, keel choice and the fairly square bottom section.

I built this because I wanted that 'ship-of-the-line' look, and at three metres distant on the water I think the vessel delivers this wonderfully.

Now available!
**HM 14 Gun Brig-Sloop
 Speedy
 1782**

VM
 VANGUARD MODELS
 BY CHRIS WATTON

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



The latest release from Vanguard Models is the 14 gun brig-sloop Speedy (1782). The model is designed as per her likely appearance during Lord Cochrane's command in 1800-1801.

All versions of the Speedy kit include copper plating, laser engraved main deck, a very detailed 18 foot cutter and fine cast resin main and swivel guns. A very detailed kit but relatively easy to build. There are no less than 14 laser cut sheets and 7 photo-etched sheets in brass and copper. 10 large plan sheets and full colour instruction manual. Also included is a finely sculpted resin cast 1:64 scale figure of Lord Cochrane himself.

The initial release of Speedy is available in two versions:

Premium - Includes basswood laser cut parts and pear-wood second planking - £240

Master Shipwright Edition (Limited to 20 numbered kits) - Includes pear-wood laser cut parts, machined pear-wood rigging blocks and deadeyes, boxwood second planking and the book Cochrane the Dauntless - £340

Standard and Premium Alert kit in stock- £160-£180

Arriving soon:

Special edition Alert kit with pear-wood laser cut parts and fine cast resin black cannon

H.M. Cutter Alert 1777

Scale - 1:64
Length overall - 637mm
Width overall - 256mm
Height overall - 517mm



www.vanguardmodels.co.uk

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 Email - sales@vanguardmodels.com
chriswatton66@gmail.com



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



Brigantine PHOENIX
 1787, wooden kit
 Length: 590 mm.
 Height: 440 mm.
 Width: 220 mm.
 Included Lifeboat
 MK0101
 All hull planking and
 details are laser cut.
 Price - £225



**MASTER
 KORABEL**



Shooner POLOTSK 1788, wooden kit
 Length: 580 mm.
 Height: 456 mm,
 Width: 175 mm.
 Included Lifeboat MK0102
 All hull planking and details are laser cut.
 Price - £188



Tender AVOS 1806, wooden kit
 Length: 420 mm.
 Height: 420 mm,
 Width: 175 mm.
 Included: Lifeboat MK0103
 All hull planking and details are laser cut.
 Price - £149 without sails and £194 for the pear wood planking and pre-sewn sails version



St. Gabriel 1728
 Length: 350 mm.
 Height: 300 mm,
 Width: 150 mm.
 Price - £130





1: The Miniature Steam 3 inch vertical boiler fitted with a cast ceramic burner in the side of the furnace. This particular burner was evaluated more closely in Boiler Room Pt104.
2: A John Hemmens 3.5 inch vertical boiler fitted with a full width ceramic burner. It is supplied from a single nozzle and jet arrangement and is factory set for the optimum combustion.

Boiler Room

Burner Comparisons

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

If you remember, in Part 104, we had a look at a new type of burner, the Cast Ceramic burner as supplied by Miniature Steam in Australia. Having a look at that burner started me thinking about how we could go about evaluating the performance of a burner to compare one against the other. The trouble is, of course, that burners are designed to operate at their best when inside the boiler with the total gas flow constrained by the boiler furnace and flue so there is not a lot of point in simply sitting a burner on the work bench, putting gas

through it and igniting it. How are we going to measure performance from that? It required some further thought.

Identifying a comparison

As I mentioned in the introduction the burner really needs to be inside the boiler it was designed for to be working at its best. The hot gas flow from the burner should have been evaluated by the manufacturer to give the best possible combustion as well as the best possible transfer of heat into the boiler and

hence the water so really the burners should be evaluated with the boiler it was designed for. As it happens I was able to lay my hands on four boilers with four quite different types of burner, all of a possible model boat type of size, which I could use as a comparison. I had the Miniature Steam 3in vertical boiler with its cast ceramic burner on the side, (**Photo 1**), a John Hemmens 3.5in vertical boiler fitted with a full width ceramic disc type burner in the base, (**Photo 2**), a Maxwell Hemmens 3in Caton horizontal boiler with a twin poker burner arrangement, (**Photo 3**), and finally



4: A Pendle 3.5 inch vertical boiler with a drilled brass disc type burner fitted to the side of the furnace space.

a 3.5in vertical boiler from Pendle Steam Boilers fitted with their drilled brass disc type of burner on the side of the boiler, (**Photo 4**).

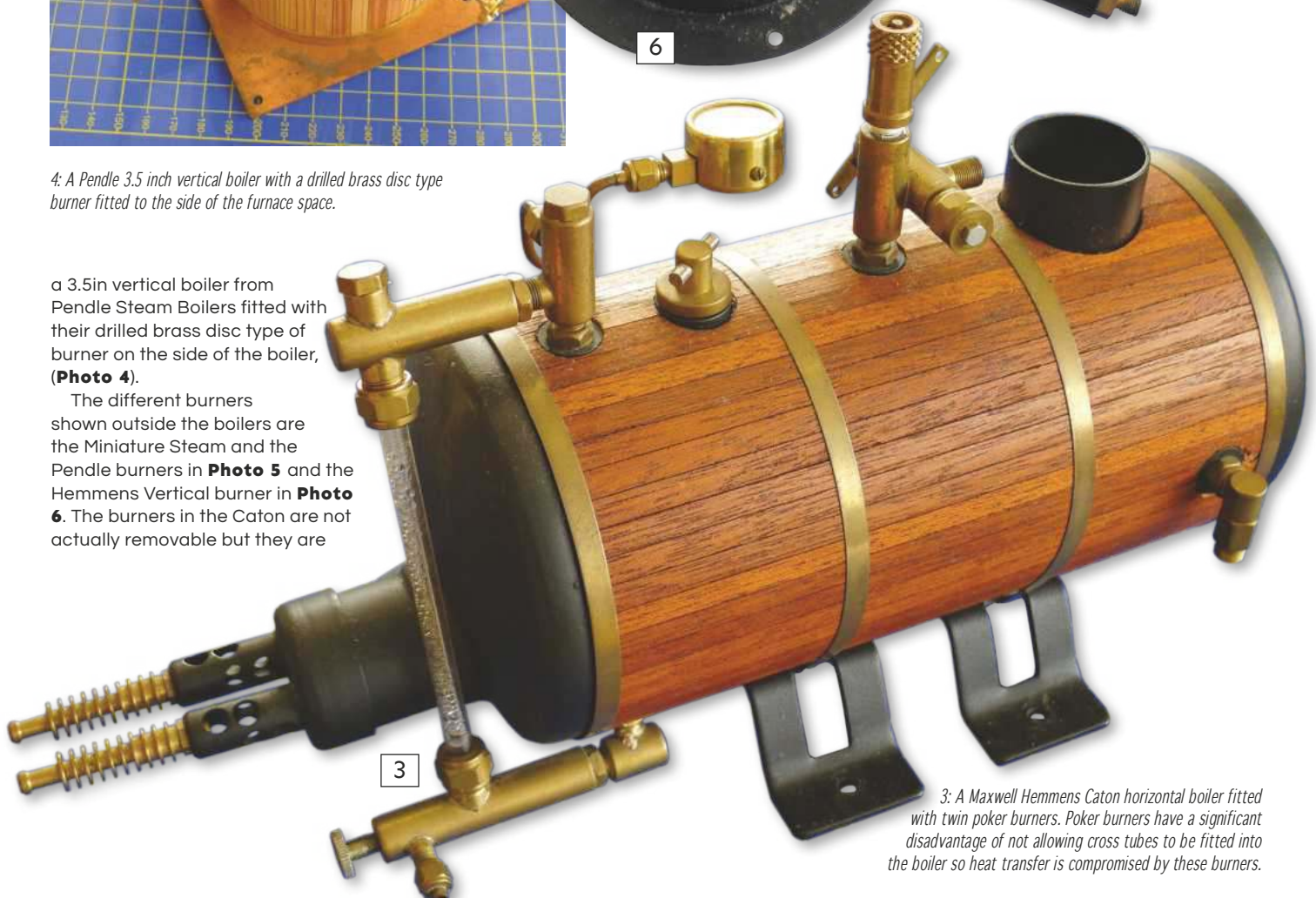
The different burners shown outside the boilers are the Miniature Steam and the Pendle burners in **Photo 5** and the Hemmens Vertical burner in **Photo 6**. The burners in the Caton are not actually removable but they are



5: The burner for the Miniature Steam boiler is the cast ceramic unit on the left. Of a similar size is the drilled disc type from Pendle on the right. Both these burners are factory fitted with a number 5 jet and do have similar gas consumptions.



6: The large ceramic disc fitted to the Hemmens 3.5 inch vertical boiler.



3: A Maxwell Hemmens Caton horizontal boiler fitted with twin poker burners. Poker burners have a significant disadvantage of not allowing cross tubes to be fitted into the boiler so heat transfer is compromised by these burners.



7: A twin poker burner arrangement of the same type as fitted to the Hemmens Caton boiler. This is a burner unit from the same manufacturer's Ribbersdale boiler.

identical to the twin poker arrangement from the same manufacturer in **Photo 7**.

The question was now how to devise a reasonable test. Using a very simple engineering premise that efficiency of a piece of machinery is basically what comes out divided by what goes in what I thought what might be of interest was to put a given quantity of water into each boiler and see first of all how long it would take the boiler to get the water to 100° centigrade. That would only of course give us an indication of how powerful the boiler might be, but what I really wanted to compare was how efficiently the boiler and burner converted the gas into steam. Consequently I decided to weigh the gas tanks before and after the test, (**Photo 8**), so I could not only see how fast the boilers performed but, more, interestingly, how efficiently they performed.

Before we generate a flood of letters questioning the scientific value of such a test I will hold up my hands to start with and declare that this is far from a scientific evaluation. It is simply a comparison for our interest and discussion only. All the gas bottles, boilers, equipment and water were placed in a single room and left there to normalise their temperatures overnight. The plan was then to do the tests in quick succession to make the comparisons as fair as possible. All the boilers were fairly new with very little use and a clean furnace and water space. Despite all the precautions there would still be inequalities in the effectiveness of lagging, any possible restriction in the nozzles and even inaccuracies in getting the temperature of the water rather than any part of the shell but, as I mentioned, I make no claims for scientific perfection.

The tests

The smallest capacity boiler was the Miniature Steam Boiler so I wanted to decide on a quantity of water which was the same for each boiler. It would then have to be accepted that the other boilers were not going to be at their most efficient because the water levels might not be at the designed level but at least the quantity would be the same.

The boiler was filled with 250ml of water, which had settled at 14° centigrade overnight, via a syringe through an open plug in the top. The gas tank, a new full tank to ensure consistent evaporation rates, was weighed and connected up to the burner. The temperature probe, (**Photo 9**), was then placed into the water and the thermometer turned on. As the boiler was lit a stop watch was started and the temperature observed until it reached 100° centigrade, (**Photo 10**); the time was noted. The gas tank was removed and reweighed. This would then give us a consistent temperature rise for each of 14 to 100°, which could then be compared with the time taken and the quantity of gas used to do it.

8: A small electronic scale is enough to give an accurate weight of the gas tanks to the nearest gram.



The results

Here comes the interesting bit.

Boiler	Time Taken to Heat to 100°	Gas Used
Miniature Steam	2min 8sec	178g - 173g = 5g
Hemmens Caton	1min 30sec	184g - 178g = 6g
Hemmens Vertical	1min 50sec	190g - 182g = 8g
Pendle Vertical	3min 15sec	182g - 176g = 6g

The comparison

The first thing of interest I noticed was that there was not as large a difference as I thought there might be but the amount of gas used did appear to be quite interesting. Taking them individually:

A) Miniature Steam: For a smaller boiler the 250ml of water was probably about the best level for heat transfer so I would have expected it to do well. The time indicates that the burner is not particularly large, the jet fitted to the nozzle of this one is a No.5, but the quantity of gas used is interestingly the best. The saving of a gram of gas over the nearest other boilers represents quite a saving over a period of only a couple of minutes and I suspect is helped by the efficiency of the cast ceramic burner.

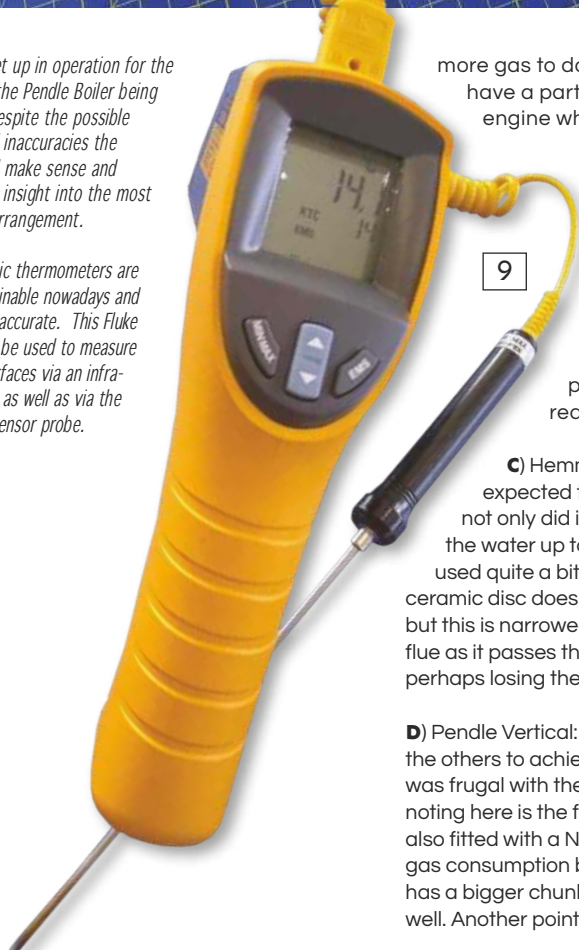
B) Hemmens Caton: Not surprisingly the twin poker burners took the water to temperature the quickest, by a considerable time. However you are using

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10: The set up in operation for the test with the Pendle Boiler being tested. Despite the possible sources of inaccuracies the results did make sense and offered an insight into the most efficient arrangement.

9: Electronic thermometers are easily obtainable nowadays and extremely accurate. This Fluke model can be used to measure remote surfaces via an infra-red sensor as well as via the attached sensor probe.



more gas to do this and, unless you have a particularly demanding engine which is unlikely in most models, perhaps the two poker burners are a lot more than is required. It is worth noting that this boiler is actually paired with a 'V' four valve engine that is particularly frugal on steam so the burner is probably way more than required.

C) Hemmens Vertical: I actually expected this to be even faster but, not only did it take 20secs more to get the water up to temperature but it also used quite a bit more gas. The full width ceramic disc does give a very wide flame but this is narrowed down to a much smaller flue as it passes through the water space, perhaps losing the benefits of the burner.

D) Pendle Vertical: While it took longer than the others to achieve the temperature it was frugal with the gas in doing so. Worth noting here is the fact that the Pendle was also fitted with a No.5 jet so you have similar gas consumption but it is a larger boiler so it has a bigger chunk of copper to heat up as well. Another point worth noting is that both

the Pendle and the Miniature steam burners are both adjustable outside the boiler to give you the best possible flame before inserting it into the boiler. The Hemmens burners are not adjustable and so the quality of the combustion is factory set. While it can be argued that having the ability to adjust the jet for the best combustion is an advantage it can equally be argued that you can't mess it up if it is in a fixed position!

Conclusion

As I hope I have stressed this was far from scientific. I do think it was interesting though and while no one could argue that it was conclusive it did show patterns that could have been expected. I was surprised that the figures were as close as they were but, of course, after a few years of frequent use the differences in gas consumption can add up to a noticeable saving.

As we have seen in earlier Boiler Room articles though the demands of the engine are met by the burner, not the boiler, although the complete picture does show that the design of the boiler rather than its size does play a part in the overall efficiency.

I also see that the latest design of Hemmens boilers no longer use the twin poker burner arrangement but have changed to a ceramic disc design so I am sure that the efficiency of these boilers will have now improved as well.



Bluebird K7 at its moorings in Loch Fad, Scotland, 2018; its first trip out following restoration work.

The right engine for Campbell and Cobb

Gas Turbine engines in model boats by **Ernie Lazenby**

Time passes very quickly as one gets older, yet it is 18 years since I first saw a gas turbine (jet engine) fitted to a model boat. It was at the annual gathering of model boat enthusiasts at the old Windermere Steamboat Museum, a fantastic weekend which may return one day now that the museum has re-opened after being closed for many years. My attention was drawn to a very large model boat, mainly because of the loud noise it was making as the owner demonstrated the engine with the boat on its display stand.

The first thing that struck me was the large number of people who had gathered around to view the model and the unrestricted way they were allowed to get so close to the model while the engine was being ramped up; it seemed to me a bit unsafe for the viewing public, however more on that later.

The model was eventually put onto Lake Windermere for a run; however my impression was one of much noise with not a great deal of speed. I wondered why the owner had chosen a jet engine when an alternative means of power such as an IC engine would have produced more speed at a reduced

cost and more scale like. It was a model that attracted much attention and it was very apparent the owner had the means to be extravagant.

At that time I was writing a regular column for a rival magazine and a reader contacted me requesting advice/help with his gas turbine-powered 1/6 model of Donald Campbell's Bluebird K7 hydroplane someone had made for him. As someone who has a lifelong interest in the speed record exploits of the Campbell family, in particular Donald, how could I refuse? The enquirer made it known he was the partner of Miss Gina Campbell; Donald Campbell's daughter and I immediately saw an opportunity to both advance my knowledge of jet engines and meet the lady.

Donald Campbell's K7 Bluebird is perhaps the most iconic hydroplane in the world, not because of the tragedy at Coniston in 1967 when Campbell was killed while attempting to break the world water speed record, but because of its prior history in setting world records driven by a very charismatic brave man whose legacy very much prevails today. A legacy brought to the attention of

new generations through the efforts of the Bluebird Project team, led by engineer and skilled diver Bill Smith, who recovered K7 from the depths of Coniston water and restored it.

Readers may be wondering why I have mentioned a full-size boat. Well, Bluebird brings me nicely to the question of what model boats are suited to, a jet engine using nothing more than jet thrust to power the model. Going back many years, model makers have made working models of Bluebird using IC engines or electric motors driving a prop in the water and they worked, however they lacked the realism of a real jet engine producing the characteristic sound and impression of raw power. It was not until commercially made miniature jet engines became readily available that working models of jet powered boats such as K7, Spirit of Australia, John Cobb's Crusader and other such hydroplanes, could be powered with miniature jet engines.

Jet engines

There are now so many manufacturers producing miniature jet engines I will only make brief mention of one particular manufacturer later in the article.

The simplest ones as used for models are referred to as turbo jets. Nothing too complicated to look at, a cylinder-shaped unit containing several parts that rotate on a central shaft. A small electric motor is fitted to the inlet side of the engine and is used to start it by spinning it up as fuel is fed in by a pump. Going back to around the time I was working

on Miss Campbells partners K7, the most readily available engine in the UK employed a simple starting system whereby a glow plug of the type used in two stroke IC engines ignited a mixture of butane/propane gas. An electric control unit (ECU) via a remote sensor, monitored the internal temperature at the exhaust and at a pre-determined figure, fed in, through a fuel pump, kerosene (paraffin) mixed with a small amount of motor cycle two stroke oil, usually about 5%. The paraffin ignited and the gas would then be turned off. Things have moved on quite a bit since then and these engines now use a full kerosene start system, gas is not needed (one thing less to worry about!).

The process of obtaining the thrust is this; Air enters the engine through an inlet protected by a FOD (Foreign Object Detection) screen to prevent unwanted items entering the engine. The air enters the compressor, that consists of one set of fixed blades (stator) and another of rotating blades (rotor). The air is compressed and then goes into the burner where the fuel/air mix is ignited. That process creates a hot gas that passes through the turbine and out of the nozzle which is shaped to accelerate the hot exhaust gases. The turbine uses the energy from the hot exhaust to rotate and since the turbine is linked to the compressor by the central shaft, it keeps the compressor turning and the electric motor is no longer used. That's how they work, so let's take a look at practical applications.

Photo 2 shows a 1/8 Bluebird K7 owned by Rich Marsh. Its power unit is a Wren 44 Gold, full kerosene start producing 10lbs of thrust at a maximum RPM of 195,000. This small model has not been fully tested yet and Rich knows I have some reservations about the model's ability to handle the maximum available power. Also shown is Rich's large model of Spirit of Australia (**Photo 3**) fitted with a Wren 100 Super Sport, producing 22lbs of thrust at 145,000 RPM; a large heavy model that should handle the power.

The engine fitted to the 1/6 Bluebird shown is a Wren MW54 producing 18lbs thrust at 160,000. It has an operating temperature 800°C (ouch that's hot), gas start (**Photo 4**).

Practical considerations and applications

Model boats, by their very nature of having to operate in a much different medium, present much different problems to model aircraft. Model aircraft once airborne, after rolling resistance on a hard surface, have only air to contend with, whereas model boats have the sticky stuff called water with all its resistance to movement characteristics to deal with. Is there any point putting a jet engine in a model that operates totally in a displaced mode, i.e. hull always immersed in the water? Short answer is no. The only sensible application is for model boats that plane across the water. There is of course the question of how do



ABOVE: Richard Marsh's 1/8 Bluebird next to the author's 1/8 Crusader. Note size differential; power/weight size differentials are important considerations. BELOW: Richard Marsh's Spirit of Australia.



A Wren engine with the green protective screen and electric motor housing; the glow plug is on the top.

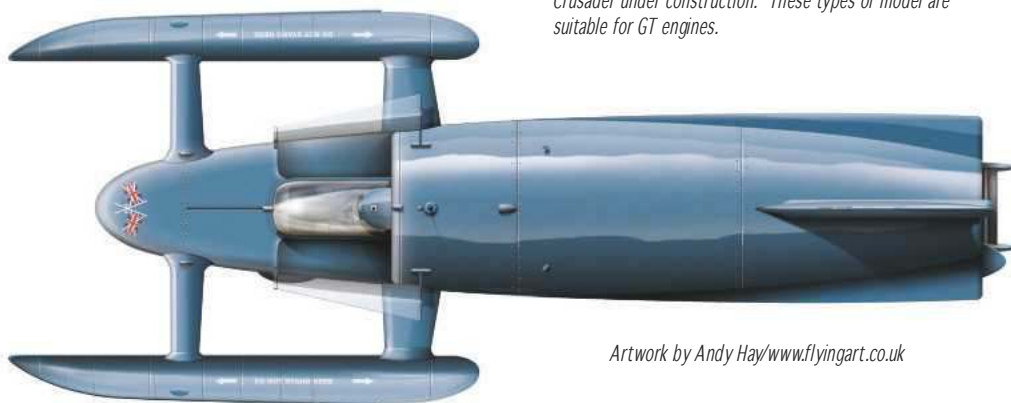
you get a model out of the water and onto the plane? The answer is simple, the power to weight ratio needs to be correct. A model where the jet thrust being produced is less than the weight of the model will struggle to get out of the water, if at all, and when it does the level of speed will be reduced. The 1/6 K7 I made in 2006 has almost a 1:1 power to weight ratio; total weight 16lbs, engine producing 18lbs of thrust. The full-size

Bluebird when fitted with its Bristol Orpheus engine in 1966 had almost a 1:1 power to weight ratio (Photo 5).

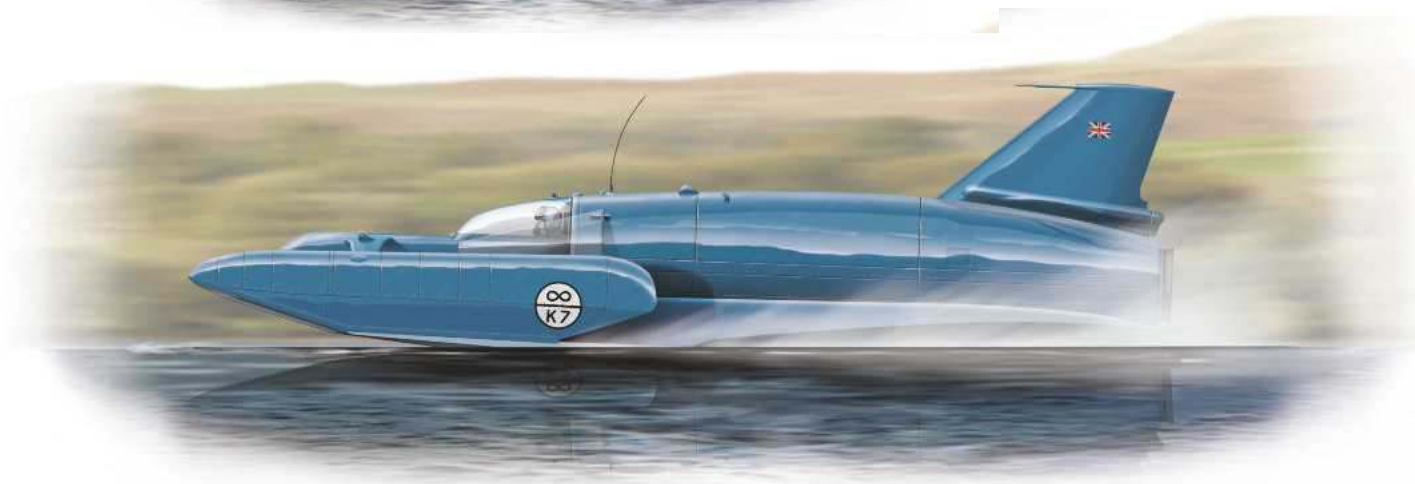
Another consideration is the size of a model. A small over-powered model is a disaster waiting to happen; yes it will get out onto the plane easily but the water is not to scale and keeping the model on the plane instead of becoming airborne will be very difficult. That possibility brings me to a



ABOVE: The author's 1/6 Bluebird and his 1/8 John Cobb Crusader under construction. These types of model are suitable for GT engines.



Artwork by Andy Hay/www.flyingart.co.uk



question that has caused me some concern for a number of years: a question that those who manufacture miniature jet engines seem reluctant to answer despite several requests from me. It is this, what happens to a red-hot jet engine that suddenly enters a large volume of cold water while the turbine blades are turning at over 100,000 RPM. Surely there must be the problem associated with thermal shock to the metal and physical distortion produced by the conflicting forces as spinning blades enter the water. I have yet to get an answer, however one can prevent such potentially expensive occurrences by making sure that the power to weight ratio, relative to the size of the model is correct. Hopefully, no one will experience an incident that could provide a definitive answer to the question. Personally, I would not be inclined to run an engine again after an incident until it's been thoroughly examined and tested; better to be safe than sorry.

Another most important consideration is the size of the air intakes on a model boat. Jet engines consume lots of air and the bigger the engine the more air they consume. Free flow of air from the intakes to the engine is important, therefore nothing should be placed in the air flow that restricts it.

Just an aside piece of info; the real K7 once had a problem with collapsing air intakes due to the suction created by the Bristol Siddeley Orpheus engine when it was fitted in 1966 to replace the Metropolitan-Vickers Beryl axial-flow turbojet engine fitted in 1955 and used for all the previous world speed records/attempts. The Orpheus produced much more power and the original intakes could not withstand the forces involved. The collapsed material entered the engine destroying it; being on loan from the Ministry of Defence, one can assume that this did not go down well!

Sometime ago I was contacted by a model builder who had made a 1/4 scale K7 Bluebird that would not plane unless it was towed behind a full-size ski boat; it was far too heavy and did not have enough power. I believe that some well-intentioned model makers who have made model boats for gas turbine engines

6



have made them far too heavy believing they need to be extra strong to cope with the thrust. There are areas of these models that need to be well-constructed as with the sponson arms on the Bluebird K7 and John Cobb's Crusader, however, the main body of the boat needs to be kept as light as possible.

ABOVE: Richard Marsh and Jamie Lazenby with alternative fire extinguishers?

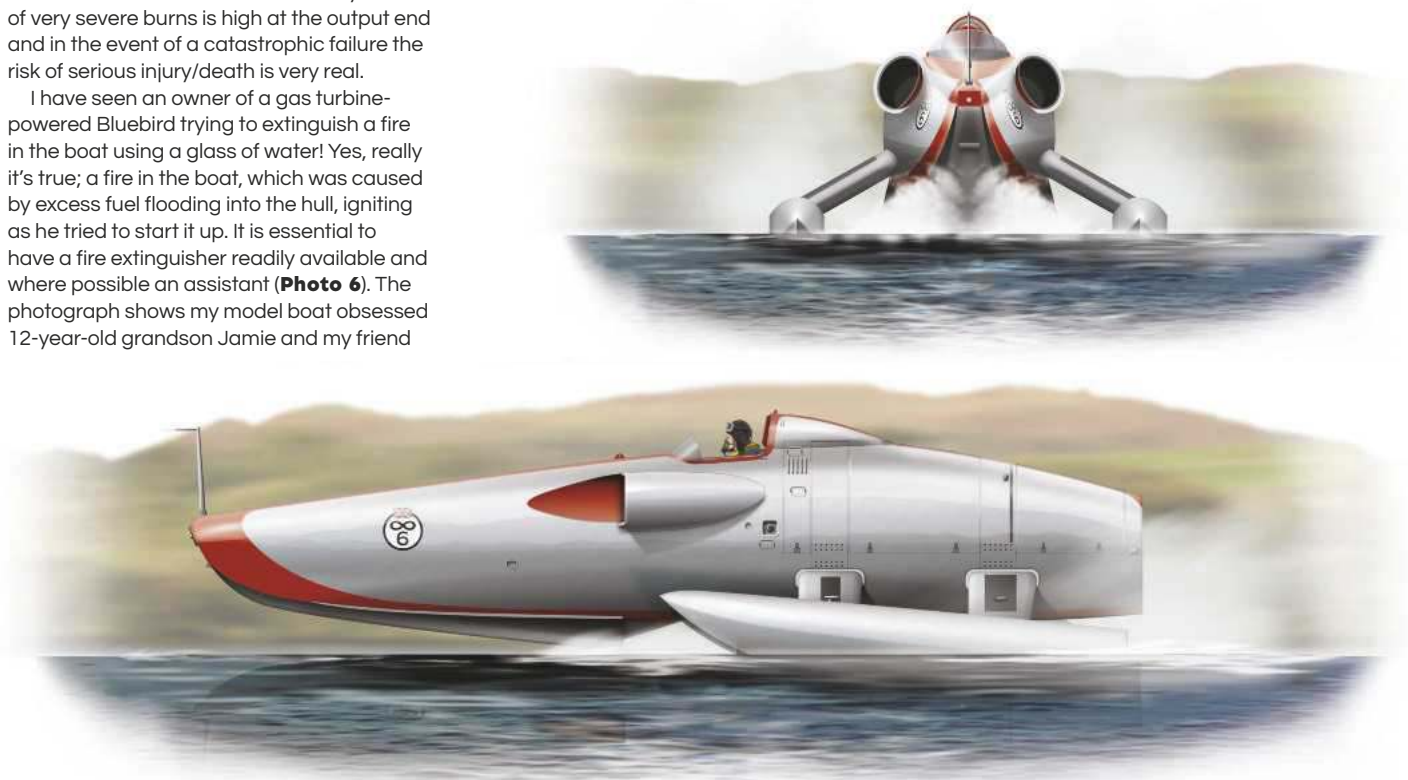
Safety issues

I want to cut to the chase here, these miniature jet engines are not toys, they are pieces of precision engineering operating at high RPM and at extremely high temperatures and should not be treated casually. The risk of very severe burns is high at the output end and in the event of a catastrophic failure the risk of serious injury/death is very real.

I have seen an owner of a gas turbine-powered Bluebird trying to extinguish a fire in the boat using a glass of water! Yes, really it's true; a fire in the boat, which was caused by excess fuel flooding into the hull, igniting as he tried to start it up. It is essential to have a fire extinguisher readily available and where possible an assistant (**Photo 6**). The photograph shows my model boat obsessed 12-year-old grandson Jamie and my friend



Artwork by Andy Hay/www.flyingart.co.uk





ABOVE: The servo operated/user operated kill switch to instantly cut fuel supply off. Also the Wren 54 engine and associated equipment fitted to the author's 1/6 K7 Bluebird. BELOW: The data terminal used to start a jet engine and access data relating to the use of the engine. It is useful for checking how many hours the engine has been run.



Rich Marsh holding examples of what is good and what is bad, work out which! There ought never to be a fire if all the equipment is maintained correctly and should there be a fire in the engine, then stopping the fuel supply will kill the engine and thus the fire.

The problem is how to prevent a fire when the boat is on the water. Let's be frank, do we really want a high-speed jet engine powered model going out of control; of course not, therefore a kill switch is essential. The K7 model I built, now owned by my son Ian, has an electronic fail safe and a mechanical one which kills power to the fuel pump in the event of signal loss or should the operator need to shut down the engine quickly. Photograph shows the servo operated kill switch (**Photo 7**).

Another bad practice I have witnessed is the owner of a jet engine having problems with a glow plug, so he thought it a good idea to turn the gas full on, then go to the back of the boat and use a lighter to ignite the gas; bad idea, massive flame resulting in damage to the engine.

An equally bad practice I witnessed was someone re-fuelling after a run by filling the fuel tank via a small tube through the top of the boat with its cover on thus preventing a view of the fuel tank and while the engine is running; another really bad idea!

The UK Model flight association have available via their website codes of practice for the safe use of gas turbine engines and much of it is relative to model boats.

An important safety issue is maintenance. It is very important that these engines are serviced in accordance with the manufacturer's recommendations. The total amount of time an engine has run is recorded by the engine management system and that information is readily retrieved by the data terminal (**Photo 8**).

Notwithstanding all the above comments, gas turbine engines are perfectly safe to use in model boats if basic common sense is applied in conjunction with the BMFA codes of practice. Don't be frightened of them, but treat them with respect, they are not big boy's toys!

Third party public liability insurance

This is an important consideration yet one that many people seem to dismiss as being something that does not concern them, until something happens that is!

Model boats powered by internal combustion engines/steam and electric motors can be covered for third party public liability insurance via the UK Model power boat association (MPBA) or through specialist insurance companies. Gas turbine-powered boats present a problem. Back in 2006 when I built K7 I made enquiries with the MPBA and was informed that gas-turbine powered boats were excluded and thus not covered.

The British Model flight Association was, and remain, more than happy to cover gas-turbine powered model boats. As far as I can determine the BMFA is the sole port of call for insurance and I suggest you join them. Recently I became aware that the MPBA were revising the policy and there was a possibility gas turbine model boat would be covered. At the time of writing this article I have been unable to get an update from the MPBA.

I have also established, that the UK's leading insurance company for model boats/ model engineering and the company that provides third party public liability insurance and offers insurance for the Model Boat Club I am secretary of, will not cover gas turbine-powered model boats.

It's a problem easily resolved for a small cost, I have to say that anyone who is willing to risk their financial well-being by not being insured against third party risks is being really thoughtless. I include my errant son in that comment, at times he seems to adopt a cavalier approach to such matters but I love him none the less!

The Bluebird Project

I thank Bill Smith and the Bluebird Project for providing me the photographs of the restored K7 Bluebird at Loch Fad in Scotland 2018. A remarkable achievement that has taken many years of hard work by a group of dedicated volunteers. I have visited the project in North Shields on a number of occasions and been allowed to take photographs. In this article I could not resist

including a couple of photographs I took of the Orpheus engine (**Photo 9 & 10**) while it was being tested out of the boat and also of the operating system put together to do the tests. It is a big engine that came out of a Hawker Siddeley Gnat trainer. The original engine that came out of Coniston water when the boat was recovered was beyond repair however, several items from it have been painstakingly restored and fitted to the engine shown in the photograph. I witnessed the engine being run up at nowhere full power and it's noisy, very noisy.

Conclusions

Gas turbine-powered model boats will always be a minority sport restricted to those with an interest in having a model that is a scale representative of the full-size boat. Should anyone in the UK complete the build of a boat to attempt to break the World Water Speed Record currently held by the Spirit of Australia built and driven Ken Warby, an Australian who has held it for over 40 years, it's very likely its success would lead to a small number of gas turbine-powered models appearing; just as the restoration of the K7 Bluebird has given rise to an increased number of working GT-powered models.

Cost is very much a major consideration and, let's be honest about it, they are not cheap and never will be. It's a niche market in model boating. To those who have unlimited resources the total cost is of no concern, however to those on limited budgets the consideration is? Does



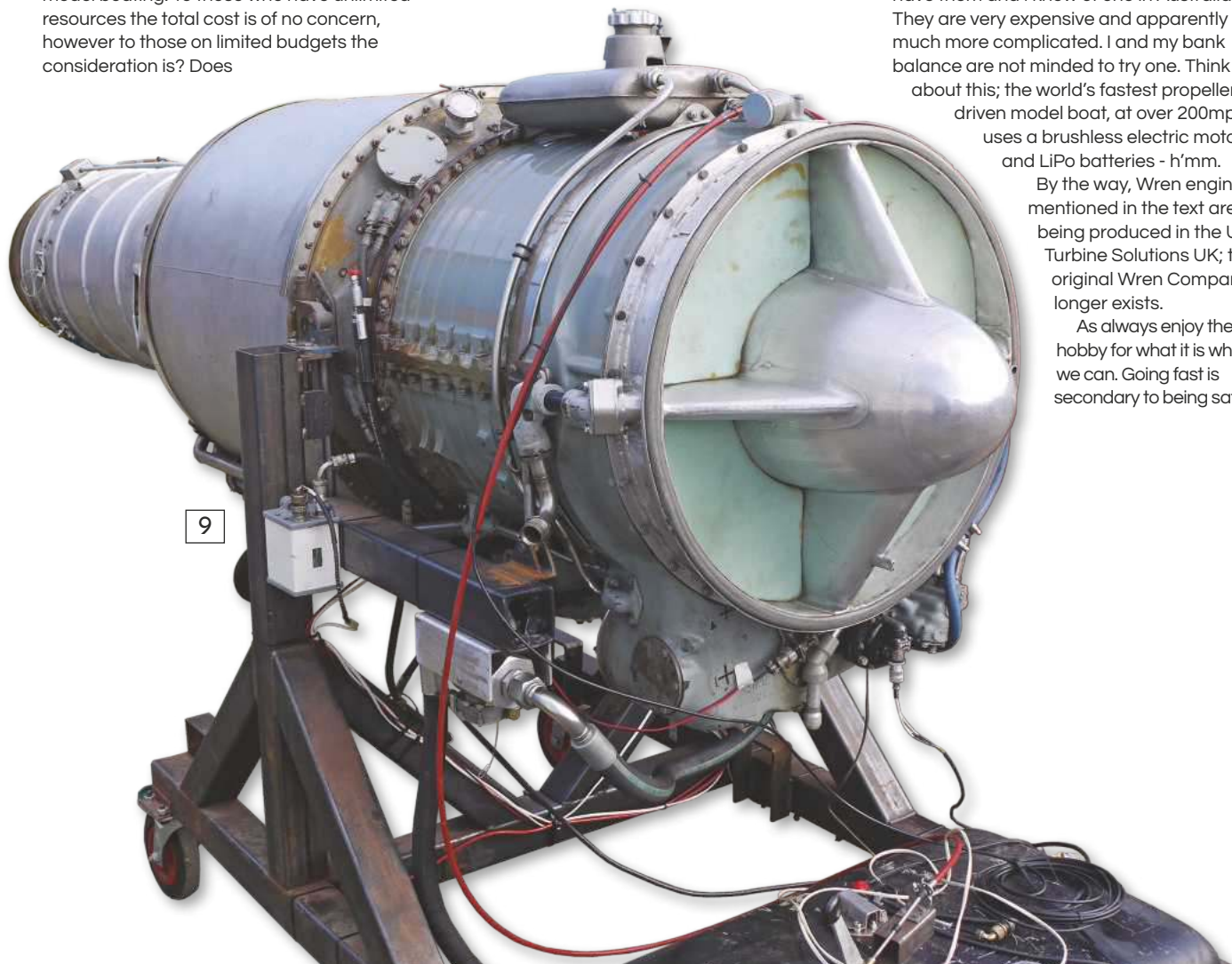
ABOVE & BELOW: The Bristol Orpheus engine used in K7 during testing in 2018; several of the parts on the engine have been taken from the original and restored to full working order.

the need for something different outweigh the potential total loss or major damage resulting from flipping over a model? Model boats travelling at speed can and often do flip over it's the nature of the hobby. Just as jet engine model aircraft can and do fall out of the sky.

I have deliberately refrained from mentioning turboprops, which is a jet engine driving a prop shaft with a propeller in the water; no jet thrust. I have no experience of them and don't know of any in the UK, although I know several enthusiasts in Europe have them and I know of one in Australia. They are very expensive and apparently much more complicated. I and my bank balance are not minded to try one. Think about this; the world's fastest propeller driven model boat, at over 200mph uses a brushless electric motor and LiPo batteries - h'mm.

By the way, Wren engines mentioned in the text are now being produced in the UK by Turbine Solutions UK; the original Wren Company no longer exists.

As always enjoy the hobby for what it is while we can. Going fast is secondary to being safe! ●





A Facelift for an Old Lady

The restoration of a 1960s 16 inch tug by Charlie Oates

An old lady is found

Some of you will already know that I like to search around old junk shops that masquerade as antique shops. A little while ago whilst doing just that, I found a complete 1960s kit of the 41cm long tug, Climax by Hobbies of Dereham. When I opened the box there was a pile of obeche and ply wood, some roughly cut out, a brass propeller and shaft, and a new, unused Mighty Midget electric motor, a collectable from the 1960s. I bought this little lot for £20, and tried to think of a convincing tale to tell my wife when I got it home.

As it happened, she was quite happy, one week later I had sold the Mighty Midget on EBay for £30 so I was in profit and I was left with a lovely pile of wood to make into a model. The plan was in tatters, just a few strands of paper, and the instructions were typical of the time, i.e. they assumed the builder had been through the school system of the day and knew something about wood and tools. Fortunately for me, I had, and this isn't exactly my first model, so no problems there (Photo 1 & 2).

As I looked at the pictures, I realised just how basic a model this would build into, very simple lines, chunky 'details', a home-made toy rather than a decent

model. My problem was whether to build it as per the original, or to make it into something better. With some trepidation, I decided that as I was having a nostalgia trip, I should make it as designed.

I'm going to be brief about this bit, I'm not writing a build log of a 1960s model. Suffice to say that I built the bread and butter hull, cut out and glued together the superstructure, knocked up the details

1

INSTRUCTIONS FOR BUILDING THE MODEL TUG 'CLIMAX'

Made from Design No. 251 Special



THERE can be few model boat enthusiasts who would not be proud to add 'Climax' to their collection. It is for service anywhere that model boats can be used. It is a carefully designed craft guaranteed to give long and trouble-free service. Yet construction difficulties have been minimised to the point of non-existence, and anyone who can use a fretsaw and a few simple tools cannot fail to make a worthwhile job.

The model, which is typical of British river tugs, is 16 in. long with a 4 in. beam, and is 7 1/2 in. high overall. It is electrically driven by a dependable low-consumption motor and incorporates a provision-built propeller shaft and screw. It will give hours of pleasure to young and old alike, and be the envy of all who frequent model boat ponds.

Even at home it will prove an object of considerable interest, and provision is made for a proper stand which not only serves as an outdoor waterway test for the model, but also affords ample opportunity for its display.

Properly Shaped Hull

'Climax' has a properly shaped and hollowed hull, closely following the shape of the real thing, and is made from specially selected light, but strong, wood. This wood, together with all necessary wire, cord, transparent material for windows, etc., is obtainable in the form of a complete kit, and those undertaking to make the model cannot do better than purchase one. The motor and propeller units are supplied as extras.

All the preliminary cutting is done with the fretsaw, the final shaping being completed with a penknife, rasp and glasspaper. The hull is made up in two complete sections, which are glued one on either side of the keel piece, and each of the sections is built up on the familiar 'bread-and-butter' principle. The superstructure is added after the hull is made, and is of simple but authentic outline. It is constructed so that it is

detachable from the hull to give access to the motor and propeller units when required.

The recommended electrical unit for the craft is a 'Mighty Midget' motor. These DC motors are for use with 3 volt or 6 volt batteries, and their current consumption is low. On two standard flat type pocket lamp batteries, the motor runs perfectly. It is totally enclosed and capable of really hard work.

The motor, as supplied by Hobbies, is complete with brass pulley which is coupled by a suitable drive to a larger pulley on the propeller shaft and unit, also obtainable from Hobbies. This set-up gives the necessary reduction in the number of revs. per minute, and drives the craft at a realistic speed, and with plenty of power in reserve.

How to Start

The first step in construction is to transfer the various pattern pieces to the required wood, making sure that all the pieces have been properly drawn out before cutting. It will be necessary to fit the pieces carefully on to the panels supplied in the kit in order to use the wood to the best advantage. For instance, on one panel 16 in. x 3 in. x 1/4 in. you will get two pieces (3), and on another panel of similar size you will have one piece (6) and one piece (4). Examples of how to fit the pieces are shown in the diagrams. Fig. 1, and the other pieces are laid out similarly on the remaining panels. The 11 in. x 3 in. x 1/4 in. panel and the 9 in. x 4 in. x 1/4 in. panel, incidentally, are used for the stand on which to place the model when it is not in use.

Cut out the pieces comprising the two hull half-sections. These are pieces (1), (2), (3), (4), (5) and (6), and there are, of course, two of each. Both sections are glued together head-and-butt fashion, as shown in Fig. 2, but be sure that you produce a left- and right-hand section and not two sections the same. The right-hand section is

The pieces (26a) actually project from the bridge and rest on the hullworks of the stand when the superstructure is placed on the hull. They are not attached to the hullwork in any way.

The next step in construction is to insert the propeller shaft in the stern tube, and then fix the rudder. Before the propeller is actually fitted, however, force as much Vaseline as possible into the stern tube and liberally smear the shaft with it. The Vaseline is used to prevent water seeping into the hull through the stern tube, and should be replaced from time to time when the model is in use. When the propeller shaft is inserted in the stern tube, the large pulley is screwed in position on the forward end. Slight play should be allowed between the pulley and the end of the stern tube, so that the propeller unit revolves freely.

Making the Rudder

The rudder is cut from 1 in. wood and shaped to the section shown on the design sheet. A piece of medium wire is shaped to form a tiller, flattened where shown in the diagram, and driven right through the rudder (see dotted lines on the design sheet). The hole for the wire is, of course, drilled in the rudder. It should be of such a size that the wire is a tight fit when driven in.

Now cut pieces (51) and (52) and glue piece (51) into place in the stern where shown. Insert the wire tiller through the stern (tuck into the rudder), and through into the keel. Screw piece (52) into place. This latter piece serves to prevent the tiller being withdrawn accidentally, yet can be quickly removed as required so that the rudder can be taken out. This then allows the propeller to be withdrawn in order to re-grease the stern tube as explained in an earlier note.

Although the deck piece (14) is shown in this drawing, remember that it is actually a permanent part of the hull and does not lift off with the remainder of the superstructure.

Strengthening pieces (56) are now cut and glued to the keel near the propeller where shown.

The hull and propeller gear is now complete.

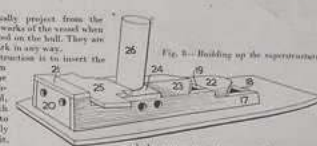


Fig. 3—Building up the superstructure

and the next step is to mount the motor and batteries. The layout of these and the wiring is shown in Fig. 16. Wires are fixed to pieces (16) and (17) and fastened by screws to pieces of metal strip as shown in the inset diagram. The motor is then fastened centrally to its bed, and the complete assembly screwed to piece (3), a rubber band over the pulley of the motor and that of the shaft providing the necessary drive. The leads from the motor are connected as shown.

The batteries should be placed in the hull exactly as shown, in order to ensure forward motion. If the batteries should be placed in the other way round, the model would go in reverse. In any case, be quite certain that both batteries are the same way round, for if one is wrongly

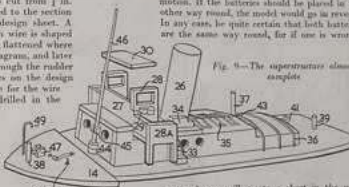


Fig. 4—The superstructure almost complete

reversed you will create a short in the motor with the possibility of damage.

The main switch is made from a metal strip, and details are shown in Fig. 10. The contacts on the foredeck (14) are wired through the holes (A) and (B). The wires are connected to these screws, as shown, and the handle set at the actual switch contacts.

'Half Speed' Running

It will be found that the motor will function quite well on only one battery, but the second should always be in position to give the craft its correct trim. If it is desired to run on one battery only to give the effect of half speed, one of the wires from the second battery can be cut and a separate switch incorporated in it. With the switch at the 'off' position, only the forward

and sanded and painted it. The addition of some spare radio gear with a servo motor driving the propeller made it ready for sailing on the garden pond (**Photo 3**).

It worked; it was quick enough, turned well and looked awful! A trip to the boat club with it brought some stunned looks and, a lot of meaningful silences followed by suggestions that I change my medication. That was enough for me; a complete rebuild was called for. Three months very enjoyable work later I ended up with one of my favourite models.

Which new face?

Whether we describe a model as semi-scale, stand-off scale or whatever is irrelevant, it isn't a scale model. It just looks as though it might be to an untutored eye. Certainly all my models fall into this category, many are very close to original vessels, but not exact copies. This model certainly falls into that category. I had a look at many pictures of tugs trying to find a design I liked and that would be close 'ish' to the lines of the little monster. In the end, I based my rebuild on some pictures of Lady T by Mobile Marine Models, a classic steam tug of the early 1900s.

The surgery

It takes a surprisingly short time to strip a model down, compared with the build, after an hour or so I was left with a sorry looking mess on the bench. I decided to split the

shown in Fig. 2. After gluing, each section should be clamped up until quite dry. Waterproof glue should be used for these hull sections and, indeed, for the whole of the craft.

Now take a tracing of the dotted line on the keel pieces (7) and (8) on the design sheet, and transfer this line to the hull sections as shown in Fig. 3. This gives the outline for the preliminary shaping of the hull pieces.

Shape the sections to the lines and also shape away the steps on the outside of the sections until the surfaces are almost smooth. You will then have two pieces looking rather like the illustration (Fig. 5).

Fitting the Keel

The keel pieces are now cut and glued to one side of the hull as in Fig. 5. Insert the stern tube as shown. Fitting it closely between pieces (7) and (8) and fill the cavity with glue. Next glue the remaining half of the keel into position, when you will have an assembly like that seen in Fig. 6.

At this stage, run plenty of glue round the joints on the inside to ensure a thoroughly waterproof shell.

Pieces (9), (10) and (11) are next glued into position (see Fig. 6), and then pieces (12), (14), (15) and (16) are cut out and glued in place as shown in Fig. 7. It will be noted that piece (13) is cut from the centre of (14), but is not glued into place. It forms the base of the superstructure and also acts as the hatch for the motor. As will be seen later, this piece, complete with the superstructure, is always readily removable to give access to the 'works'.

Before piece (14) is finally glued in position, it is advisable to insert two pieces of covered flex through the holes (A) and (B). The piece through hole (A) should be about 5 ins. long, and that

through hole (B) 9 ins. Leave the ends projecting through the top of piece (14), and lead the other ends round into the wall of the hull.

Piece (14) is shaped from the front as shown by the dotted line (Fig. 7), giving the necessary sweep to the bows. Now finish shaping the hull, using the sections shown on the design sheet as a guide. When satisfied with the overall shape, glasspaper thoroughly to remove any imperfections in the surface, then give the work a coat of woodfiller and stand aside to dry before rubbing down again with fine glasspaper.

While the woodfiller is drying, the worker can go on with making the superstructure. For this the pieces (15), (16), (19), (20), (21), (22), (23) and (24) are cut first, shaped where necessary to the sections shown on the design sheet, and cleaned up and glued together as in Fig. 8. Also in Fig. 8 can be seen the pieces (25) and (26), the floor of the bridge and the funnel respectively, and these pieces can be cut and shaped next before fitting.

The diagram (Fig. 9) shows the superstructure nearing completion, having had added the mast (16), the various bridge pieces, deck fittings, etc. These pieces are cut and shaped before gluing. Note, of course, that piece (14), which is a fixture, is included in Fig. 9, and is not part of the piece which lifts out to give access to the motor.

'Glazing' the Portholes

The small portholes are covered outside with discs of transparent material, the edges of which are later painted to represent brass rims. Transparent material can also be glued inside the wheelhouse at this stage. Pieces (26) which cover the rear hatch, are made from medium-thick wire, and the frames of the windows on the hatch immediately behind the funnel are from this card lined, cut, and glued into place.

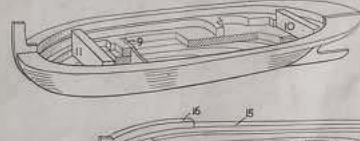


Fig. 6—The hull nearing completion

Fig. 6—The two sections of the hull glued into position, and other parts added

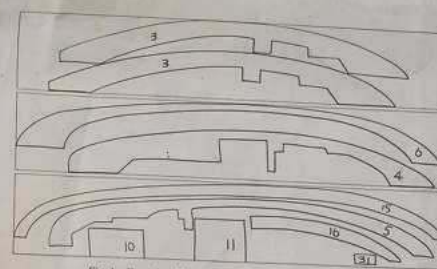


Fig. 1—Examples of how the patterns are laid out on the panels

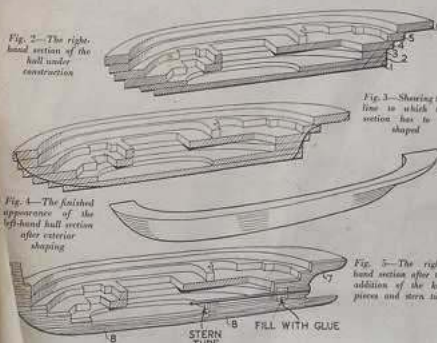


Fig. 2—The right-hand section of the hull under construction

Fig. 4—The finished appearance of the left-hand section after exterior shaping

Fig. 5—The right-hand section after the addition of the keel pieces and stern tube

Fig. 3—Showing the line in which the section has to be shaped

Fig. 4—The finished appearance of the left-hand section after exterior shaping

Fig. 5—The right-hand section after the addition of the keel pieces and stern tube



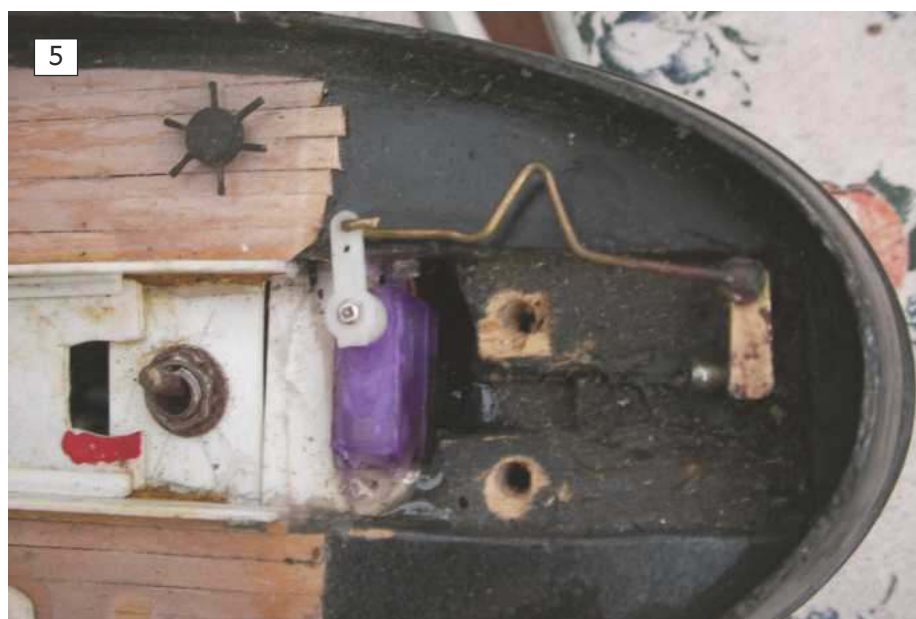
job into three obvious tasks.

The hull, strip the paint, plate it and re paint; the deck and deck fittings, together with a new opening and the upper-works; a real challenge.

The hull

This was the easy bit, the sanding down, took no time, but then I decided to plate the hull. Properly done, plating follows a strict regime, well carried out, it looks great. This time laziness won over technique; I just cut some card rectangles and glued them on, a pleasant evenings work.

The card used was old Christmas cards, the glossy kind; these are easy to get a good finish with. I got through a small



tube of impact adhesive, and was careful to get glue on all the edges, but not so much that it came out at the joins. A quick spray with varnish to properly seal the card, three coats of acrylic paint and two last coats of satin polyurethane varnish saw the job finished. The varnish does yellow the finish a little, but that improves the overall effect. No one has noticed that there isn't a true plating pattern so I'm very happy with it. After about 30 hours sailing in pond water, swimming pool water and twice in salt water, it still looks fine and nothing has lifted. Result! (Photo 4) hull plating.

The deck

Working out the size for the opening was a little fraught, any model needs decent access to the innards, a small model especially so. I was on a hiding to nothing here, a compromise between being just able to get my fingers in and not distorting the size of superstructure too much was needed. Placing the rudder micro servo high up at the stern made life easier, and putting a plate for the receiver and the light switches just in front of it helped too (Photo 5).

In the end I settled on having three removable parts. The main superstructure is removable and a cover that incorporates a companionway covers the switches (Photo 6). Lastly, I made the whole of the stern decking removable. It's a well-known fact that any model that has its rudder linkages built in and difficult to access will give problems from the first time out. My rather simple answer was to incorporate a large towing bollard into the stern deck. This is made from some brass rod that extends about 2cm below the deck. The rods go tightly into some drilled holes on the stern blocks. Hey presto, one secure rear deck easy to remove and strong enough to tow with (Photo 7).

The motor and the batteries were tricky, they have to be low in the hull to keep the centre of floatation down. A little experimentation allowed me to check I can get the four AA batteries and their holder onto the hull floor and out again ok. The original pulley drive had been a problem because there is not much room to change the belts, so I used a couple of gears from the bits box. A ratio of 2 to 1 is perfect, and the motor was just hot glued in to save space. There is very little stress in such a tiny model, so this slightly shoddy arrangement is fine.

With access, drive and control sorted out and a suitable opening in the original deck, it was time to start the more detailed work. In my extensive 'that might come in handy sometime' box, there are a lot of veneer off-cuts. A very fine grain light coloured one was selected and cut up into planks about 3mm wide, I then planked the whole of the deck areas and had quite a few planks left over for planking various bits of the superstructure. I weathered the deck, as I've never seen a tug with a motor yacht finish. My method was simple, a coat of acrylic varnish, (outdoor type), rub down gently, apply a water thinned coat so that I get dodgy faded areas, then another top coat - quick, easy and durable.

The superstructure

Like most superstructures, the essence is just a few boxes glued together. A few measurements got the basic shape of each section, I then transferred these onto some 1mm plastic card, cut them out, glued it all together and reinforced the joints. Getting the size was easy; I just built it around the deck coaming. As I was working from photographs, I could do my own thing and the layout of the bridge, funnel and engine room cover etc. was done on the 'that looks about right' system. The eye can be remarkably accurate at judging to correctness of things.

If building a superstructure around the coaming in this way, try rubbing a little candle wax on to the coaming first, it stops any stray glue welding



8



it all together. If I had happened to miss one bit with the wax and glued the first box to the coaming, I wouldn't tell you. Yorkshire men are good at swearing though.

With the first 'box' done (less than 1 hours work) a suitable bridge deck was cut out, this time using a card template because I wanted to check the overhangs. Lastly, I made the bridge area from bits of homemade 2-ply veneer. I made the shape up as I went along, nothing clever, just make one piece, glue it in and measure up for the next one.

Ok, that was easy, a couple of evenings work, superstructure built. However the next bit took me three months on and off. It would be waste of time for all of us if I describe every detail of turning those boxes into something worthwhile, but some notes might help and the pictures are mostly self-explanatory (**Photo 8-10**).

Veneer was used in tiny pieces to clad most areas. I used contact glue entirely, not superglue as the stuff makes me ill. Also with contact glue it allows some degree of adjustment and it's not embarrassing if it's on your finger when you scratch your nose.

Railings are just brass rod and wire cut, filed, soldered and painted. The funnel is a vitamin tube, with bands glued on and a steam pipe added; all simple and easy. Some types of detail make a lot of difference on a model like this, hinges on doors, door handles and grab handles are very visible. I use a tiny bit of brass wire, for handles and to make the flat bits, I hammer the ends on a piece of scrap iron. An old brake pad works well as an anvil.

10



Fittings

I like making fittings; it's one of my favourite jobs. So nearly everything is just knocked up from whatever junk I have around. The exception is the vents; I had some in the spares box and two ships boats as well. I'm not happy with the boats and will make a new pair when I get around to it.

Buckets are air rifle pellets, with a wire handle, engine housing vents are old washers filed and polished. A water tank was made from another plastic tube, with a watch winder as a valve and other scraps of tubing lagged with thin string added to finish it. Again, after painting, it was all weathered for effect (**Photo 11**).

The chart table on the bridge has a map found on the internet. It was shrunk on my computer and printed out then sealed with spray matt varnish. Small lifebelts are easy and tasty! I sucked some polo mints until they were the right size, dried them and a spray of varnish completed that job.

(**Photo 12**) Winches stand out on tugs, but very few people can identify all the bits. I'm glad about that because it means I can use 'modellers licence'. If you look carefully at the photo, you should see the following. A bit of brass plate, some old servo gears a broken bit of biro and a press stud. Add those together with some string, scrap rod and a little bit of 13amp plug, then point to a matt finish – voila!

Well that's about all there is to say about this boat, most of the rest is obvious in the photographs. An accurate scale tug? Definitely not, but I hope it's a convincing model.

9



11



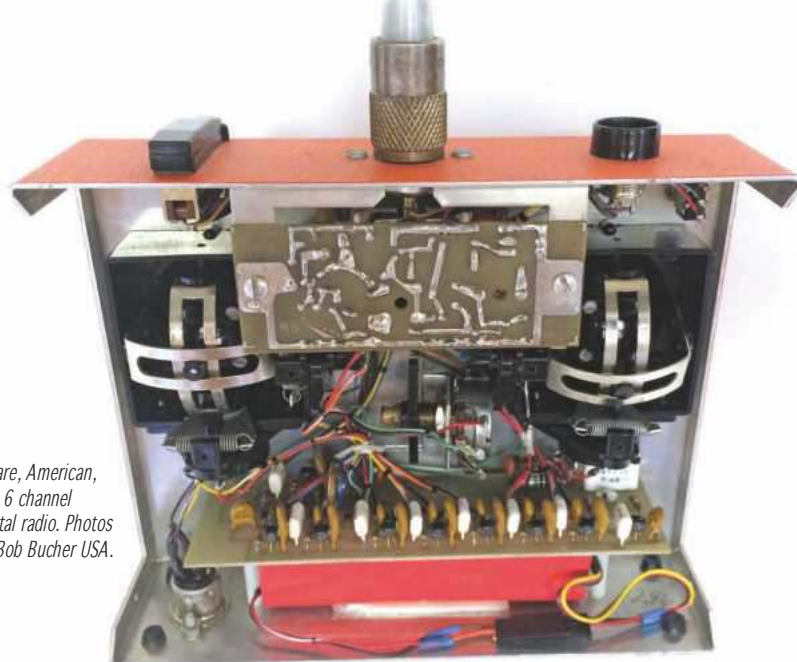
12



I try to follow one simple rule when building like this. Any feature should look as though it could be used. Occasionally I get somewhere close. This little tug has given me more building pleasure than many larger faster and imposing models that I've made over the years, it sails well too. If bits of wood and brass appeal to you more than watching a TV soap opera, try something similar.



A rare, American, 'RS' 6 channel digital radio. Photos by Bob Bucher USA.



Some 'American

By David J Wiggins

Hello there vintage fans. This month and courtesy of kind American collector Bob Bucher, I'd like to share with you two of the least well known (in Britain), but top flight radios to emerge from 1970s USA, these being Bobs example of the smart, orange-cased, 6 channel 'RS' and my own example of the perhaps slightly better known Pro-Line 'Competition' line. Let's begin with the least well-known of these radios over here, the small range of 'RS' equipment designed, I believe, by Bob Novak.



and there were design mishaps often caused by their use at high and low temperatures as there had been, indeed, with the first germanium junction transistors many years earlier. Many smaller makers abandoned using 'chips' altogether and went back to proven discrete circuitry until the state of the art improved and settled down a bit and I suspect that is the case here.

ever popular Kraft-Hayes (K-H) control sticks with chromium trim the latter replaced, on later models, by a plastic open gimbal item manufactured I think by D&R (Dick & Rose) in the states.

It would be most interesting to know just how much of the Kraft families income was generated by their plastic mouldings division headed up by Chuck Hayes and Joe Martin. It must have been significant, one feels such was the worldwide acceptance and quality of items like these sticks and their almost universally used range of servo mechanisms not to mention the huge range of moulded accessories (fuel tanks, linkages and wheels etc.), that K-H distributed across America and around the world; a topic for another time maybe?

The American 'RS' Radio brand

If I understand things correctly (and I'm perfectly happy to be corrected by American readers who will very likely know much more about RS history than I do), Bob Novak had previously designed for the Californian concern of Micro Avionics (M/A) before this once popular brand was absorbed by Orbit/Datatron after M/A experienced technical problems with their last (XL/XL-IC) radio line. I have previously both restored and described (elsewhere) examples of both M/A and Orbit sets from the Orbit owned-era so will not repeat that here.

As a young electronic designer Mr Novak was an understandably keen user of the earliest generations of I.C. (integrated circuit) in his work, so it's perhaps something of a surprise to see that his own radio brand did not employ these advanced, but not always reliable back then devices. The early days of 'silicon chips' in R/C were not easy ones

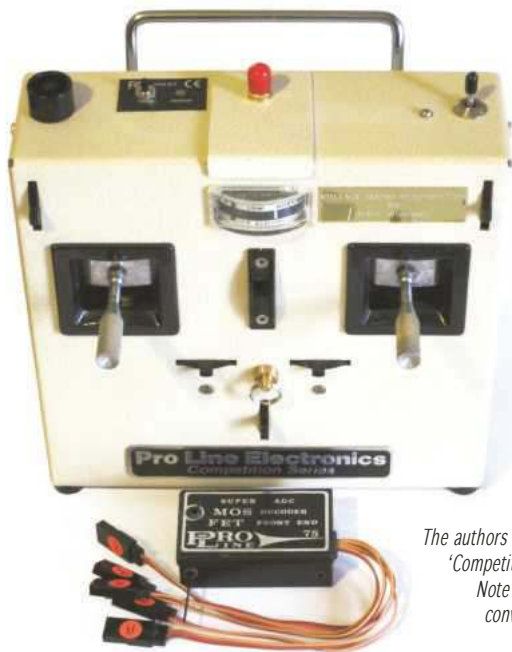
and there were design mishaps often caused by their use at high and low temperatures as there had been, indeed, with the first germanium junction transistors many years earlier. Many smaller makers abandoned using 'chips' altogether and went back to proven discrete circuitry until the state of the art improved and settled down a bit and I suspect that is the case here.

An advanced idea in some RS

transmitters was their adoption of modular RF (radio frequency), printed circuit boards permitting both individual frequency and band changes to be made by the user/modeller. Kraft Systems had been doing likewise for a little while, so that was not unique but it was certainly unusual back then. Other nice features included the 'UHF' pattern co-axial transmitter antenna connection seen and the use of the

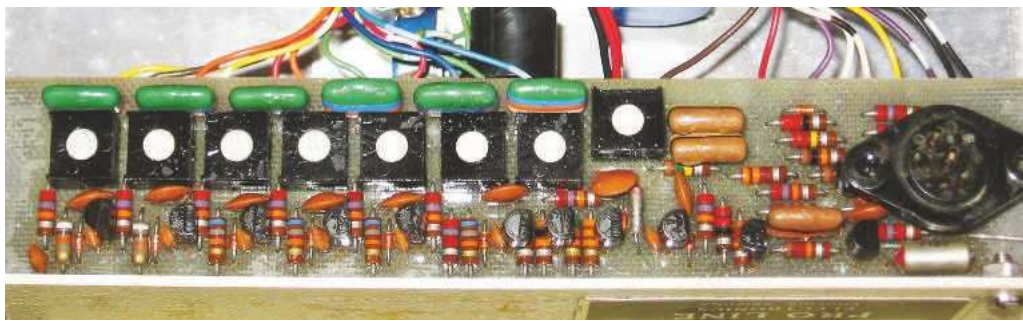
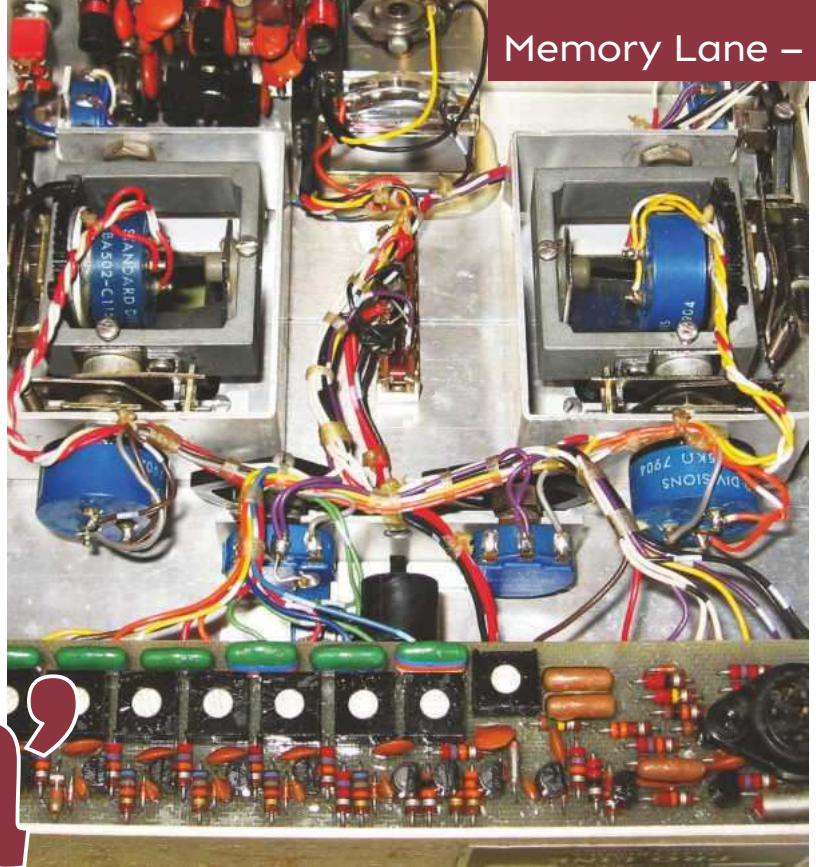


A now rare RS receiving set to match our transmitter. Bob Bucher USA.



The authors 24 Pro-Line
'Competition Series'.
Note 24 receiver
conversion esp.

Exotica'



This 6 channel RS transmitter and its matching receiving set (both shown), the property of Bob Bucher in the USA as I say, was the top product in the line but they also manufactured very nice looking 2 and 3 channel radios aimed at glider pilots and at us marine modellers. The RS 2 channel must have received many sales by being included, as the supplied radio set, with the then very popular Hobie 'Hawk' ready to fly (RTF) model sailplane. The 2 channel receiving set (not shown in this issue), is representative of the US state of the electronic art c1975 featuring – to choice – either a truly tiny receiver and 2 servos that look like they were made for RS by D&R, or a servo 'brick' unit (same comment), which is to be discussed later in the series

along with my own example of the RS20 2 channel radio.

In conclusion, RS radios, despite their nice quality, were not that long on the American R/C market and sadly, within a few years were being sold off at discount prices by the big US hobby dealers. Why that was I have no idea?

A Pro-Line 'Competition' restoration

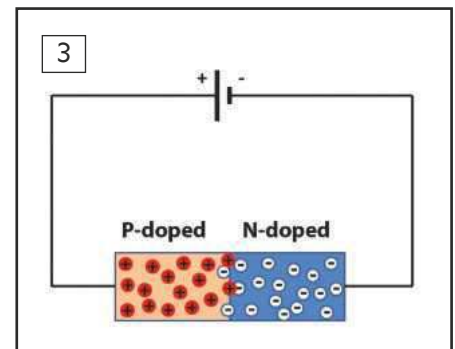
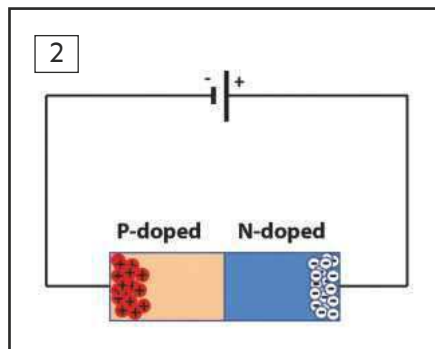
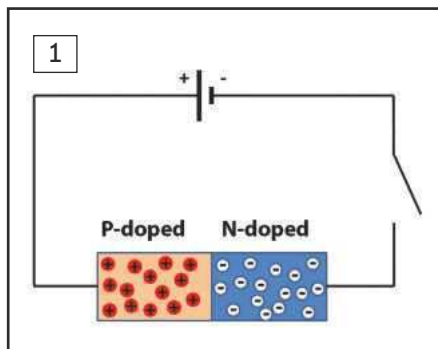
Some years back I purchased the Pro-Line radio illustrated and this has proved to be one of my more difficult restoration tasks of recent times. Having spent a lot of money both on buying the radio and on having it converted to 2.4GHz out in the states, I began to find serious problems that required a major rewire. Put simply, all of the old solder joints made by the original assembler had begun to disintegrate and 'dull' (you can tell when old solder is going 'bad' just by looking at it given lots of experience; this is not the same thing as a 'dry joint') and major work was required.

Had this been a problem on almost any other radio brand I would not have bothered but this Pro-Line, in addition to being touted as 'the World's Best' set at the time of its manufacture (not to say still much sought by collectors), had also cost me a great deal of money by then and it just had to be tackled.

I began by renewing every single one of the flexible cable joints (at every control pot, the switch and every circuit board connection).

The job was a success, but it revealed just how bad the old solder had become with cable fracturing as each wire was lifted off and its joint remade thus calling for more major surgery than had been planned at the outset. It was thus decided to re-solder all of the circuit board joints as well. This being a major job calling for removal of all the old American solder on the encoder panel before renewal with fresh 60:40 lead/tin radio solder it was put aside for 'another day' while I faced serious matters in my personal life. As anyone (all of us?) who has ever put off a job will know, time can fly and it was only in early 2019 that I picked up the transmitter to finish off the job. By then various items had 'gone walkies' and needed finding. Anyway, the parts were found and the job did get done. Some jobs take a few weeks but this one has been a champion, having taken years. While I was at it I renewed some old tantalum capacitors and put in a new charging socket. The caps had dried out with age and the socket was corroded by old NiCad leakage. That's life I guess.

Next time (next year indeed!), I'm featuring a selection of interesting old charging equipment & discussing the history of battery technology as related to r/c and model making.



Light Emitting Diodes in model boats

Light Emitting Diodes (LED) are a bright idea for most lighting effects in models. I have several times talked to model boat builders using miniature bulbs in favour for LEDs as they claim to have limited electronics competence. This is a pity as LEDs are not tricky at all to use; **Martin Peterson** explains.

Function

The theory of the light bulb is very easy to understand: A relatively high current flows through a very thin metallic wire that due to its resistance gets very hot and glows. The oxygen-free environment inside the glass ball prevents the wire from catching fire. But how does the LED work? A miniature

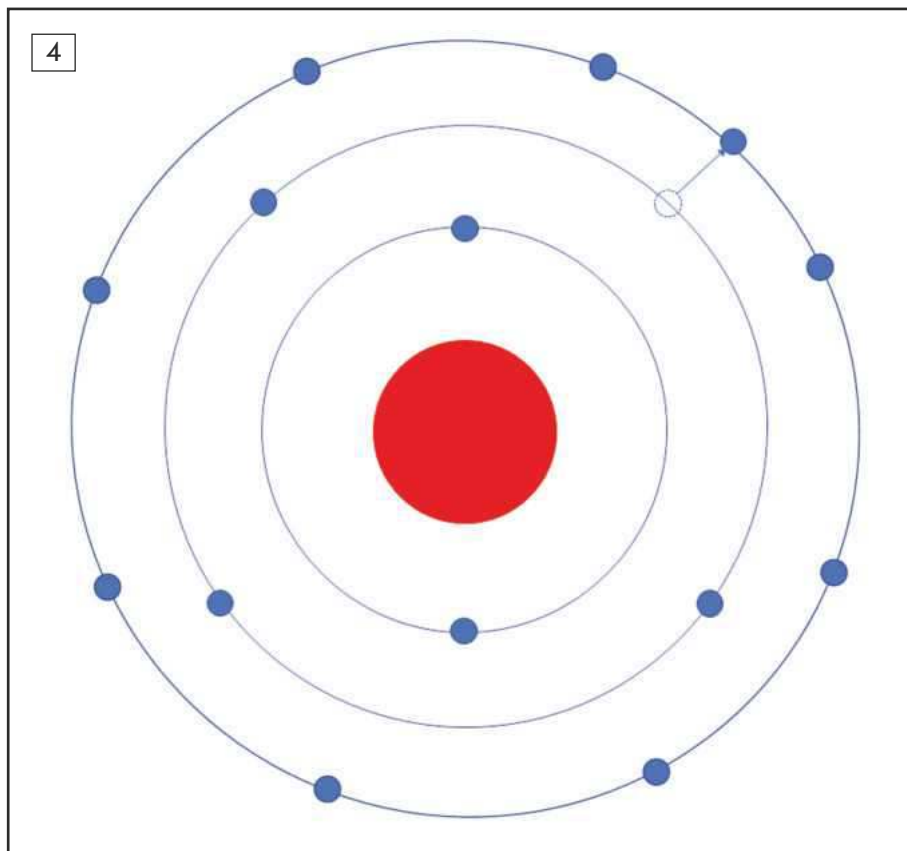
piece of semiconductor glows intensely at very low current, but only when the current flows in the right direction. One can think it is magic. The scientists do have a name for magic: Quantum mechanics and using the quantum mechanics the LED can be explained. In this article the explanations are simplified and not fully scientifically

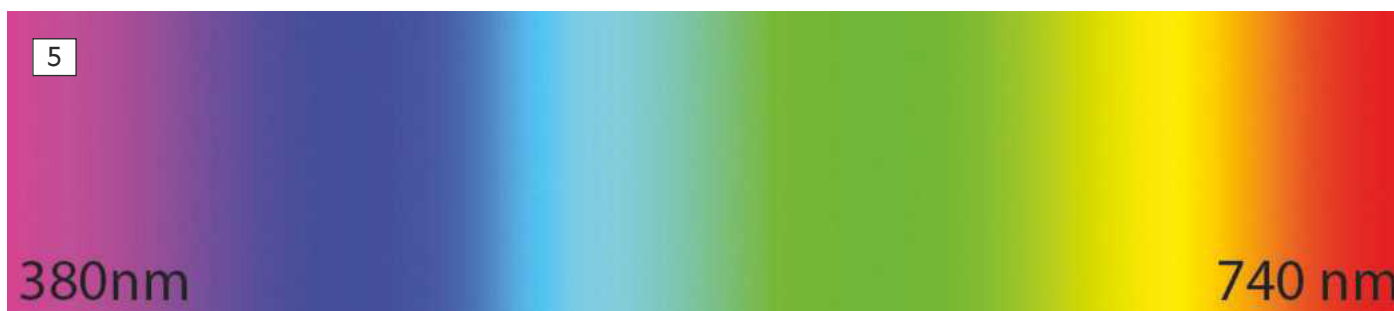
correct, but hopefully understandable for the interested model boat builder.

A diode consists of a PN junction, i.e. a piece of semiconductor that has been doped; carefully been contaminated with specific substances causing the negatively doped half of the semiconductor to have an excess of negative charges: Electrons, the positive half have an excess of positive charges: Holes (electrons missing) (**Fig.1**).

If one sets the voltage in reverse the electrons and holes are forced away from the junction, no current can flow through the diode, as no charges are in the middle of the diode (**Fig.2**). But if the voltage is set correctly the holes and electrons are forced towards the junction where they can meet and the current can flow through the diode (**Fig.3**). Still there is an inertia in passing the junction causing a forward bias. For a standard silicon diode the forward bias is typically 0.7v, for LEDs the bias is greater, typically 1.5-4v.

In the classical Bohr atom model, the electrons are orbiting the atom core in a number of shells (**Fig.4**). When a current flow through the LED some electrons move to a higher shell by the added energy, this process is called excitation. The excited condition is very unstable, and the electrons soon fall back to the original shell. When falling back the excess energy is emitted as light. The same process happens in a standard diode but there the excess energy is converted to heat due to the material properties in the diode. LEDs are made from materials with special energy gaps: Direct band gaps, between the electron shells to make the energy gaps suitable for light generation. The band gaps are controlled by the material composition, different band gaps give different colours, but a material can only generate one band gap size, i.e. one colour. There is a spread in colour within the





LED, but the spread is quite small, typically 30-50nm (Nano meter, billionth of a meter). The visible colour spectrum is 380-740nm (**Fig.5**) and the LED spread is then about 10% of the visible spectrum. As the PN junction is very small several LED chips can be mounted in the same encapsulation creating a multi-colour LED. Using the effect that a LED only generates light when forward biased one can create dual colour LEDs by putting the LED chips in parallel with mixed polarization. As an example, a red LED that will be green when polarity is changed. If polarity is rapidly alternating the LED will be yellowish. A red, a green and a blue LED that are simultaneously lit will give a light that the eye will see as white, but some parts of the spectrum is missing causing a bad colour representation: A low RA-value. A better method of generating white light by LED is to use an ultraviolet or blue LED that lights a phosphor based yellow dye. The blue and yellow light mixed create nearly a full spectrum. Using different mixes of various blue shades and various luminous materials generates different shades of white such as cold white and warm white. Lately the luminous material has been mixed into the LED material. Combining the right LED and luminous material has created LEDs with a RA index greater than 80 and the LED can replace bulbs, low energy lamps and fluorescent tubes. I replaced all fluorescent tubes in my man cave about two years ago and got a very good light environment with uniform flicker-free intense light with low energy consumption. I kept my old armatures and just replaced the fluorescent tubes and the starters. New starters were shipped with the tubes (**Photo 6**). The cost was about the twice the cost of standard fluorescent tubes, but life time of the LED tubes is about 30,000hrs. I will have to replace the tubes in about year 2046 if they are lit three hours a day!

The surface of the LED chip acts as a mirror, very little light can escape from a naked LED chip as the difference in refraction index between the semiconductor and air is too great. Covering the chip in plastics creates a more favourable step in refraction

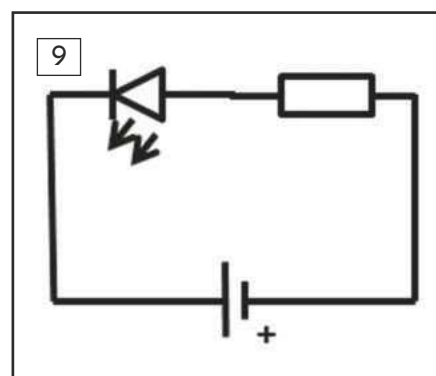
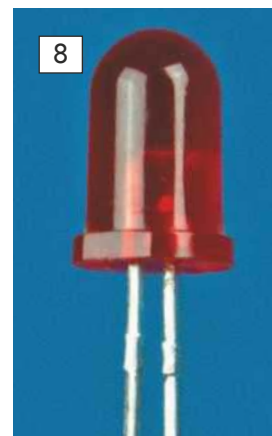
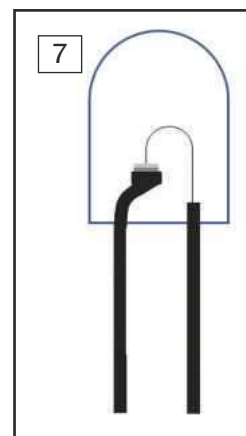
index and the light can escape from the chip. The difference in refraction index from plastics to air is no problem. The plastic housing also protects the sensitive chip from the environment and gives the LED a manageable size (**Fig.7**).

Despite the energy efficiency of the LED, heat is generated in the LED and as the chips is very small it has a small cooling surface and LED might have problems getting rid of the heat. High intensity LEDs are therefore mounted on metallic coolers. The temperature of the chip should not exceed 150°C (300°F). Heat is one of the factors limiting the lifetime of a LED; another factor is the luminous material within white LEDs. The chip has a lifetime (MTBF; Mean Time Before Failure) this 3-5 times the lifetime of the luminous material. Ageing of the luminous material gives the white LED a cooler (more blueish) light. Typical life time for the chip is 100,000hrs, compare with the typical lifetime of a light bulb that is 1000hrs, many miniature bulbs have even shorter lifetime.

Development

The first LED was created by the Russian scientist Oleg Losev in 1927. Due to the limited light intensity there was no use for the LED outside the laboratory. In 1951 the theoretical model explaining the LED was published, but still very limited use for the LED. Rapid progress increased the light generation and since the 1960s the light intensity has doubled every 18 months according to the Haitz's law. Thinking about today's LED efficiency one can wonder what will happen in LED applications within a few years; there is no indication that the progress will stop.

LEDs are covered with several patents and only a few companies manufacture white LEDs. The research is intense, and we will see many interesting LED applications within a few years. LEDs are getting smaller and smaller, today's smallest LED in laboratories is just three atoms thick, approximately 1nm (1 millionth of a millimetre!) Organic LEDs (OLED) will reduce cost and give new applications.

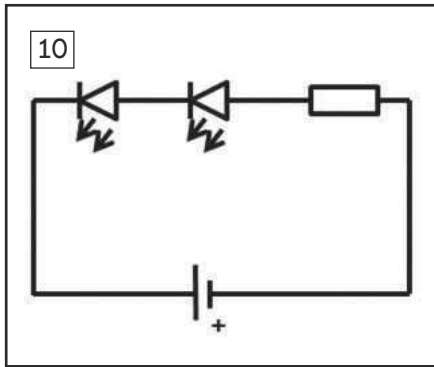


LEDs will be printable on paper and other materials at low cost. This will for sure give very interesting applications for models.

Electric connection

A LED only lights when connected with the right polarity. The anode should be connected to plus and the cathode to minus. Standard LEDs have the cathode marked with a flat side on the base of the encapsulation (**Photo 8**) often the cathode terminal is shorter than the anode terminal. For other encapsulations one must consult the data sheet to find out which terminal is anode and cathode (or just test). A LED is driven by a low voltage, usually in the interval 1.5-4v. The voltage is determined by the material in the LED, different colours therefore usually need different voltages. Fortunately, it is very simple to control the voltage over the LED by using series resistors (**Fig.9**). But what resistance value to use?

As an example, we use a LED with the specification $U_F=2.0v$ and $I_F=20mA$, F indicates forward, i.e. connected to generate light. To calculate the delta voltage between the LED and our power source we assume that we use a 12v battery. The difference between the battery and the LED is then $12-2=10v$, 10v must



be consumed by the resistor. 20mA equals 0.020A, as m is an abbreviation for milli.

To calculate the resistance, we use Ohm's law:

R is the resistance in Ohm (Ω)
 U is the voltage in Volt (V)
 I is the current in Ampere (A)

Putting our values into the simple equation gives us:

Resistors are manufactured in standard values (usually the E24 series with 24 values per decade) and there is no standard resistor available with this resistance. We select the nearest higher value as a higher resistance gives a lower voltage over the LED, lower voltage equals less heat. A too low resistance gives a too high voltage over the LED and reduce its lifetime. Nearest higher standard resistance is 510 Ω . Resistors are available in different wattage. To calculate the wattage P, given in Watts (W), we use the power law:

Putting our values into the equation gives us:

That is less than the standard wattage of 0.25W and we select a 0.25W resistor. If we would like to connect the same LED to 24 V the calculation will be:

$\Omega = 1.1\text{k}\Omega$, k indicates kilo that equals thousand.
 Nearest standard resistor is 1.2 k Ω

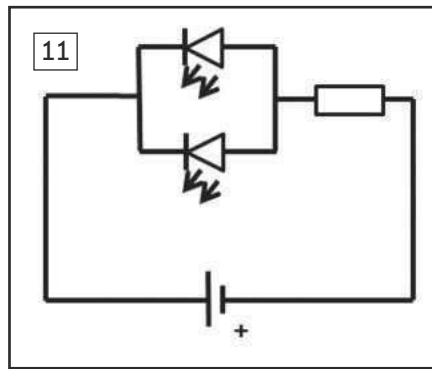
We must use a 0.5W resistor.
 LEDs can be connected in series and parallel circuits. In series the voltages are added and in parallel the currents are added. A series circuit (**Fig.10**) of two LED from the example above gives us the voltage over the LEDs:

Connecting to 12V gives us the voltage over the series resistor

The same current flows through both LEDs and we keep $I_F = 20\text{mA}$

Nearest higher standard resistor is 430 Ω .
 The wattage becomes:

i.e. less than 0.25W and we can safely select a resistor of 430 Ω 0.25W.
 A parallel circuit (**Figure 11**) using the same LEDs as above the voltage over the LEDs becomes 2V, i.e. 10V over the series resistor at



12V battery voltage. The current is the sum of the currents through both LEDs:

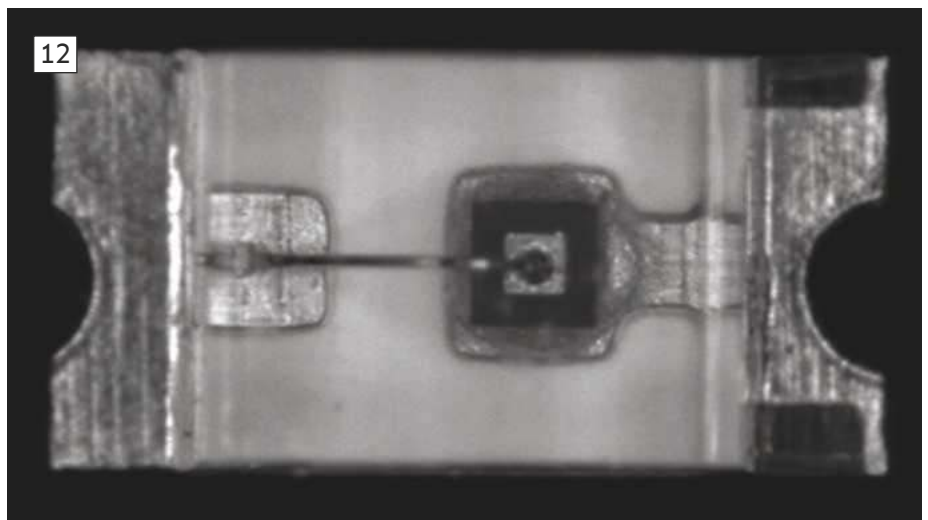
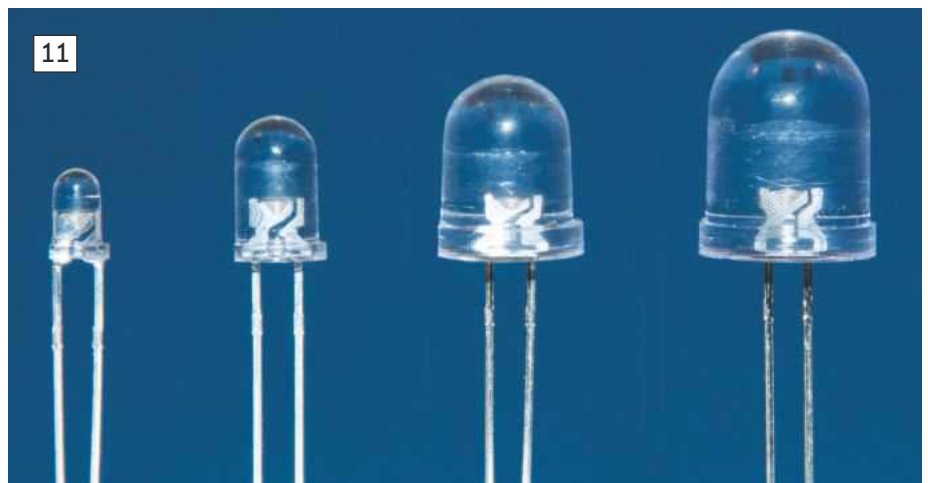
Nearest higher standard resistor is 270 Ω .
 W
 We select a 270 Ω , 0.5W resistor

If your LED gives too intense light for your application, you can lower it by increasing the resistance of the for the series resistor. If the resistance is increased too much, the LED will not light.

LEDs in models

LEDs are very suitable for models: Sub-miniature size, low voltage and very low current consumption, generate intense light but very little heat. Light effects can easily be created using simple electronics such as simple IC projects or microprocessors such as Arduino. LEDs are very cheap, a few pence each and the lifetime are sufficient to enable mounting in positions where they cannot be replaced. LEDs are available in many colours such as: Red, yellow, green, warm white, cold white, blue, purple, pink, amber and RGB that can be electrical controlled to generate various colours. Many sizes are available: Classical sizes are 3 and 5mm, but also 2, 8 and 10mm (**Photo 11**) are easily available, in rectangular shape the 2x5 mm is a standard size. Sub miniature are available as Surface Mounted Devices (SMD) (**Photo 12**). Some special shapes are side view, curved lens.

Encapsulation	Approximate size [mm]	Approximate size [inch]
0402	1.0x.5	.04x.02
0603	1.6x.8	.06x.03
0805	2.0x1.3	.08x.05
1206	3.2x1.6	.12x.06
3528	3.5x2.8	.14x.11
5050	5.0x5.0	.2x.2





Some standard encapsulations for SMD LED (Photo 13)

All colours are not available in all sizes but it is challenging to find a light problem in a model that cannot be solved by LEDs. If the space is very limited the light can be transmitted from the LED to the point of light by fibre optics. The thinnest I have found is just 0.25mm and can be bent in 5mm radius (Photo 14). A slight filing of its surface will create a light leak that can be used for some light effects.

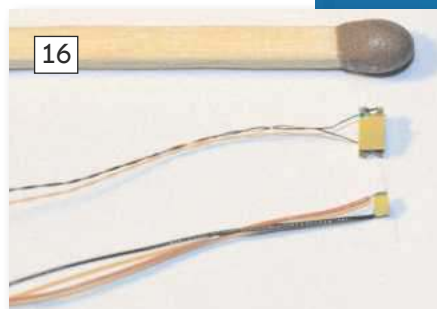
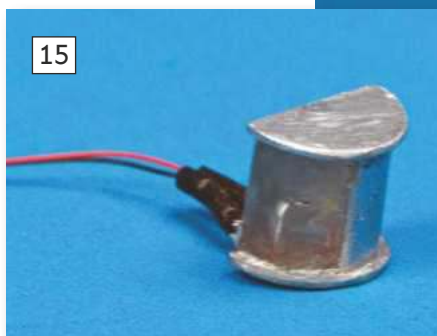
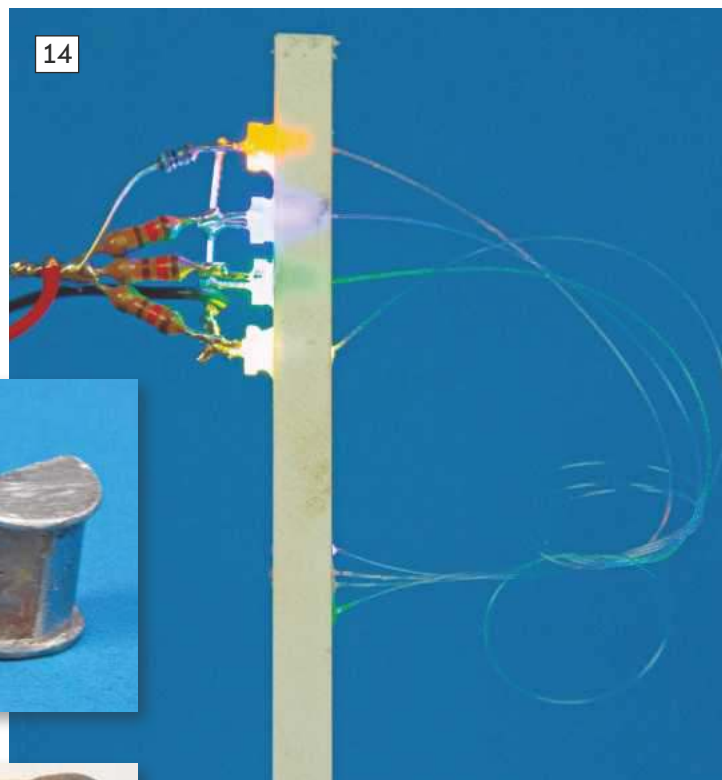
Standard LEDs can be reshaped by milling and/or filing. As the plastic material easily melts it is necessary to use sharp tools and a good cutting fluid such as desaturated ethanol to reduce friction heat. Machined surfaces can be polished using a felt polishing tool in the Dremel, remember to use plenty of polishing compound to reduce the friction heat. In this way I have created lanterns where almost half the encapsulation was removed (Photo 15).

SMD LEDs are designed to be soldered on printed circuit boards but it is possible to solder connection wires to a SMD LED if one has some soldering experience, thin solder tip and fine solder wire. Using a 0.3mm tip and 0.32mm solder I have successfully soldered wires to 0402 (1x0.5mm) (Photo 16). 0805 is quite easy to solder, 0603 is challenging and 0402 is very tricky. Thin wire can be bought in electronic component shops. There is SMD LEDs with pre-soldered wires available at some on-line stores i.e. Ali Express, but the ones I found did have too thick wires to please me.

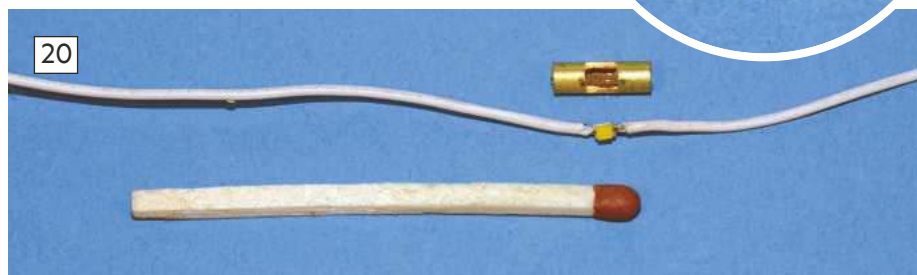
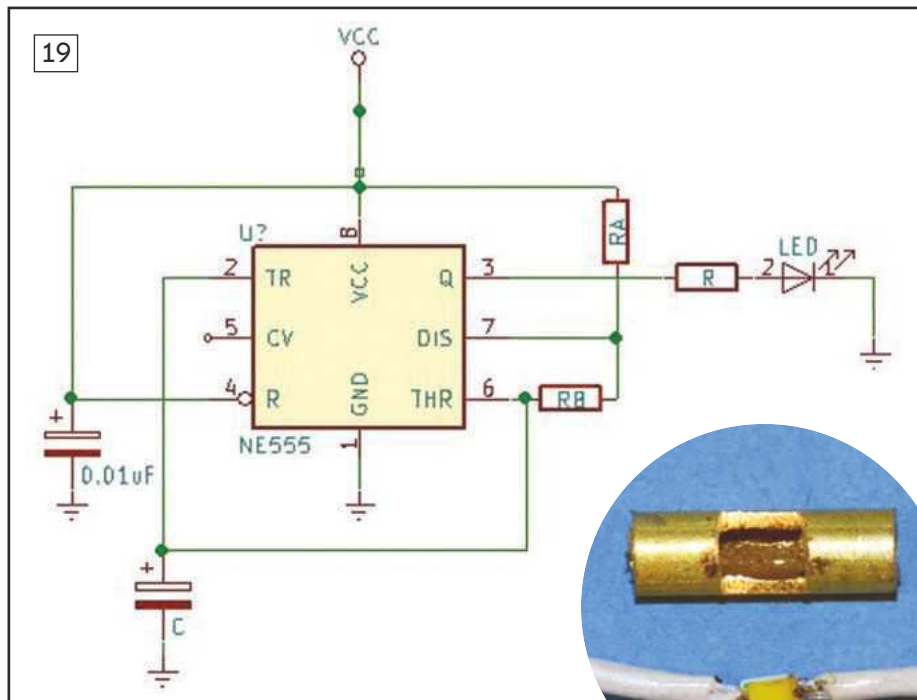
For models with very limited space the connection wires could be painted using conductive paint. I have yet not tried this myself, but if interested, google for 'Conductive paint'.

A very useful LED product is LED-strip: LEDs by meter. SMD LEDs have been assembled on a flexible circuit board, often the strip has been moisture protected by transparent silicon. Supply voltage is mostly 12v but also 24v versions can be found. Usually the LED-strip is sold in 3- or 5-meters length rolled on a spool (Photo 17). The strip can be cut at marked positions a few centimetres apart. New supply wires can be soldered to the cut off part. LED strips are available in various colours and light intensities.

There are many use of the LED strip; I have used them for illumination of model boats cabin interiors and to get light around the spindle in my milling machine (Photo 18) an area that always gets in



the shadow regardless of how bulbs are directed. The most powerful LED strip I have found has a light intensity of 4800 lm/m, that is comparable to 10 pcs of standard 40W bulbs. Please remember that high effect LED strips need cooling, i.e. by mounting of a rigid aluminium profile.

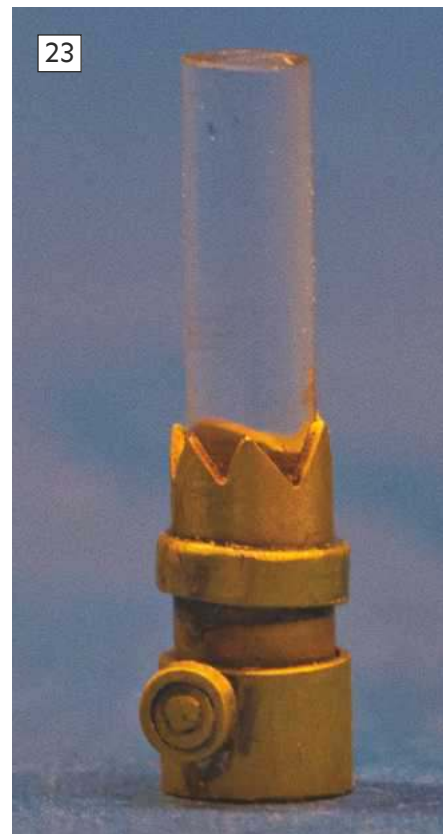


Flashing LEDs

There are flashing LEDs available, but the flash frequency is not adjustable, usually the frequency is 1.5 to 2.5Hz and the smallest flashing LEDs I have seen was 3mm in diameter. An easy way to get flashing LEDs is to build a simple oscillator based on the classic timer IC 555 (**Fig.19**), said to be the most versatile IC on the market, I fully agree. Flash frequency is controlled by the value of three components; the two resistors may be replaced by potentiometers to make the frequency adjustable.

Model boat applications

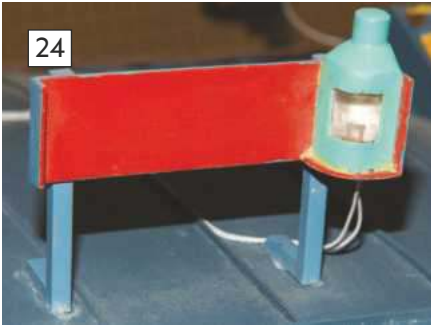
The use for LED in model boats is endless, the only limiting factor is the imagination, in one of my model boats I needed a brass tube lamp 3mm in diameter, I just filed out a window on one side of the tube and put in a 0603mm warm with SMD LED (**Photo 20**), some CA glue insulated the soldering and some epoxy glue sealed the tube. The lamp now lights up the compass in wheelhouse of my model



(**Photo 21**). In the same model I needed a paraffin lamp on the wall (**Photo 22**), a piece of acrylics rod simulates the glass cylinder in the lamp and some pieces of scrap brass tube were soldered into the holder (**Photo 23**). Within the brass base I put an amber SMD LED conned to a simple electronic circuit that gave a flickering light. I had an idea of adding a potentiometer to the knob to make the light adjustable, but the smallest potentiometer I could find was a few mm too big.

Lanterns are preferable built with LEDs in model boats, I many cases standard LEDs can be used, sometimes they need some modification by file or milling and encapsulated by brass or plastics. A standard





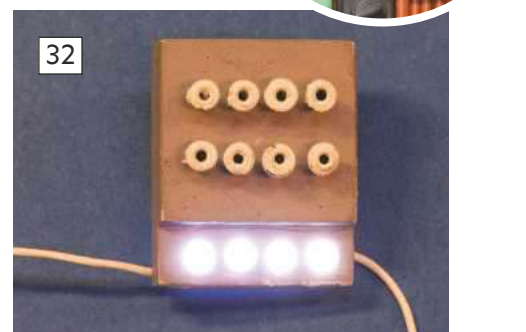
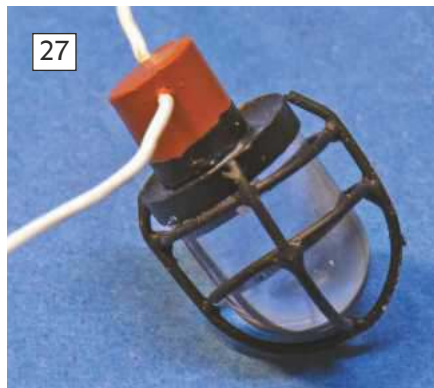
10mm LED, some brass profiles and a dab of Milliput made this lantern at my model Färjan 4 (Ferry number 4) (**Photo 24**). The side and front lanterns did differ in shape but was built in the same way. A window was cut out in a brass tube, angular profiles and pieces of sheet brass were soldered to create the lantern housing (**Photo 25**). After sanding and painting the LED with pre soldered wires were inserted from below and sealed with some more Milliput. The challenge was then separate the red, green and white light versions until they were mounted in my model. I cheated and put a marking on the wires with tape. The same model had very nice lamps in the salon (**Photo 26**), again the 10mm standard LED was just the right size and the lamp basket was soldered from brass wire, some plastic tube formed the lamp base together with some Milliput (**Photo 27**). As the warm white LED has a voltage of 3.3v, I connected four LEDs in series, with 12v battery voltage I got the right light intensity. Four circuits give the total of 16 lamps that I needed. The deck gets its light from similar lamps under the roof, the lamp glass is a half ellipsoid, not easy to simulate with the standard LEDs. A piece of clear acrylics was filed and sanded to the right shape and polished to surface using a cotton disk in my Dremel. I had to use plenty of polishing compound to not melt the acrylics by friction heat. A small cavity was milled at the backside of the acrylics and a SMD LED was glued in (**Photo 28**). SMD LEDs were used as lanterns in my model Erik Nordevall II. The prototype has the lanterns very nicely fit into the woodwork of the open bridge (**Photo 29**). I copied this by side view LEDs with curved lenses, actually my LEDs are a few tenths of a millimetre too small but better a bit on the small side than too clumsy (**Photo 30**).

An eye-catching detail in the cabin of Färjan 4 is the fuse cabinet with bulbs (**Photo 31**), I made my 1/16 scale cabinet in plastic card. Fuse insulators was quite easily created by soldering brass rings to 2mm brass tubes.



Bulbs were simulated by 3mm standard white LEDs, it was a bit tight to fit the wires but finally I made it (**Photo 32**).

As shown in this article, the LED is superior to the bulb in most applications and to use the LEDs, is neither tricky nor mysterious. ●



Corvette Central

From Canberra Australia **Eris Kennedy** reports on a group of committed modellers who have thought well outside the box. Photography by **Mike Uzzell, Mick Davis** and **Eris Kennedy**

Task force 72 (TF72) is an Australian model boating entity dedicated to building ships predominantly to 1/72 scale. The members of the Canberra division of TF72 called Fleet Base Canberra have taken up the challenge and gradually created a fleet of vessels based on the ubiquitous Revell 1/72 Flower-Class Corvette. The exact number of Corvettes and Corvette derivatives at FBC is hard to pin down but there are at least 13 by my count including a couple under construction.

The real things were of course built in some numbers and evolved over time into various forms. After the war some of these little warships lived on in the service of other navies. When Monserrat's 'The Cruel Sea' was made into a film in 1953 the Greek Navy was able to furnish a corvette which became, temporarily, the Compass Rose. Other superannuated Corvettes cropped up in civilian roles various. The guys at Fleet



Base Canberra (FBC) have followed a similar evolutionary path to the genuine article.

They first adapted the Revell kit into a variety of military marks and have more recently ventured into post war civilian variations. The military versions include both the early, short fo'c'sle version as well as the long fore-deck craft as depicted in the Revell kit. The models of civilian refits are an interesting study in just how much the

appearance of a ship can change with a change of purpose.

Though not necessarily in chronological order, the following gives a little insight into specific models built by FBC members.

The ships

Mick Davis has produced a model (**Photo 1**) of a floating museum ship called HMCS Sackville (K181). This unique vessel is an original Corvette dating back to the Battle of the Atlantic. She lies along side at Halifax in Nova Scotia. Mick sought and received much generous support from the Museum to produce this model. This particular model suffered the ignominy of actually sinking during sea trials, a little matter of insufficient ballast I'm told! Fortunately she was salvaged to sail again.

Mick also created a Norwegian version (**Photo 2**) of the Flower (K01). The full-size ship was originally commissioned as HMS Acanthus but ultimately became HNoMS Andenes. The Norwegian flag flying on a Flower-Class Corvette has catalysed many a pond side conversation.



3

Mick's current project is a vessel used for water carrying (**Photo 3**). The hull for this model was created with John Harriot's assistance (see later) and was done by cutting several centimetres out of the stock standard Revel Corvette hull amidships and then re-joining it. By all accounts this was a tricky task.

Bob Murdoch has built a number of versions of the Flower-Class based on the Revell Kit one of which is rare indeed. This is the Kreizis, PA2 (**Photo 4**) which, in reality, was one of four corvettes that were captured by the Germans, from the French, in 1940 and pressed into service with the Kriegsmarine. Choosing to recreate this unusual iteration of the flower class opened up whole new and unusual range of opportunities for décor.

The captured ship was a short-fo'c'sle flower so modifying the hull was the first task. The main gun was a 105mmC/XX gun of the type used on VIIC class U-boats. Bob used an Eduard aftermarket kit to replicate this weapon. Lighter weapons were recovered from a German half-track kit of the correct scale.

Bob found researching the Kreizis difficult however his policy is to get what he can and then get on with the build rather than become frustrated about not having every last detail to hand. The key reference for this conversion was a book called Flower Class Corvettes in the Kriegsmarine service by Stephen Bock.

Bob has also constructed a model based on the aforementioned HMCS Sackville but in her post war guise as an Oceanographic vessel (**Photo 5**) and before she was converted back to original configuration for the Museum. The civilian guise with a much altered superstructure means you have to look hard to see the corvette within. For reference material Bob used a book by Marc Milner called HMCS Sackville 1941-1945. Interestingly this version of the Flower-Class was the only one to have a sail. This was rigged on the aft mast and was installed during her short career as a cable layer. The sail helped to stabilise the ship directionally when she was working.

The miniature gun tub, the masts and the Sampson post are all scratch-built as are the winches. The 27ft whaler and motorboat came from the Quaycraft range and the 'crew' are based on civilian engineer figures from Gunthwaite. The model took twelve months to build and was completed in December 2018.



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6



Peter Cole is a long-time member of TF72 and led the charge when it comes to corvette construction and conversion. He generously assist all comers with their projects while still finding time to work on his own creations. Peter's model corvette is the short fo'c'sle HMCS Agassiz, K129 (**Photo 6**). It is unusual in that it was not built from the Revell kit but rather a fibreglass hull. The superstructure is all scratch built. The full rigging really makes this model look the part. The line rigged along

7



the side represents the boat rope that was employed to hold the bow of the ships whaler when launching underway.

John Harriot cut his teeth in Flowers with a rendition of HMCS Wetaskiwin, K175 (**Photo 7**). The model is based on the hull and fittings from the Revell kit with shortened fo'c'sle and scratch built superstructure.

Once this model was completed a second hand and partially completed Flower kit came his way. At the same time he read a book about salvage tugs on the West Coast of Canada called High Seas High Risk by Pat Wastell Norris. Among other adventures the book describes the work of the salvage tug Sudbury which turned

out to be a former Flower-Class Corvette of the same name (K162).

John contacted the Maritime Museum of British Columbia who proved to be very forth coming. They providing various drawings from which John was able to create an accurate rendition of the Sudbury (**Photo 8 and 9**). As part of this project, John had to square the stern of the model slightly. He managed to do this by softening the plastic with a hair dryer and while pushing it against his workbench. Also of note was the necessity to lower the free board of the quarter deck on this model.

In constructing the superstructure John used cardboard mock ups to check that

he had 'the look' he wanted; he calls this technique CAD (Cardboard Aided Design). Using the kit as a basis allowed John to develop his scratch building skills. The unused kit parts have been shared amongst friends for inclusion in their projects.

Brett Warburton has recently launched HMS Campanula (K18) (**Photo 10**). Brett says the Campanula required a minimum of structural modification from the basic kit however he has ventured into weathering and successfully achieved a highly authentic finish.

Trish Price recently completed HMS Heather (K69) (**Photo 11**). As with most of the boats built by FBC members several members contributed in some way to the construction. At least three members collaborated to construct the rigging and flag halyards on Heather for example.

And last but certainly not least, is a rendition by David Petersen. David's Model stands alone among the FBC corvette models in that he built his Revell kit stock standard as HMCS Snowberry (K166) (**Photo 12**). Dave is also working on another Corvette in Irish livery.

8



Know how

The Corvette builders at fleet Base Canberra agree that the Revell 1/72 kit is an ideal size for ease of construction with plenty of displacement and free board making the models seaworthy and able to be sailed in a variety of conditions. The internal space is more than adequate for containing the running gear. It is also single screw which keeps things simple.

Inevitably some tricks and ideas have been developed that make the models easier and quicker to build and to enhance scale fidelity. For one thing they discard the hand rail system supplied with the kit and use 0.8mm and 0.5mm brass wire as a substitute. These handrails are constructed in situ on the model. A really hot soldering iron is recommended for this.

The masts that come with the kit are generally replaced with brass tube of a smaller diameter. The flag halyards are created using an elastic type line called EZ line which does not sag over time. It can be obtained from suppliers of model railway bits and pieces.

Another tip is that the aft end of the superstructure in the kit is 2.5mm to long.

9



RIGHT: Members of Fleet Base Canberra (TF72) enjoying some pond side time. From left to right; Bob Murdoch, John Harriot, Peter Cole and Mick Davis.



This is true of both the long and short fo'c'sle versions.

The corvettes are typically powered by a 6v gel cell type battery which also serves as ballast in the cavernous hull.

The corvette (and derivatives) building program at FBC has not yet run its course with several more models in the pipeline. Once thing is for certain though, their pond is well defended against U-boats!





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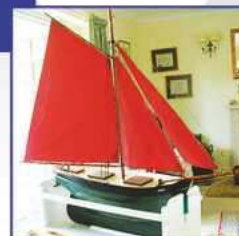
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The Jam Jar Submarine

Model submarines and their eccentric builders
by John Cox

England tends to produce more than its fair share of eccentrics; the modelling world being no exception. In the model aeroplane fraternity we have seen various birds, flying carpets and flying toilet seats. The model car world also carries its own selection of weird vehicles to stretch the imagination. Arguably we model boaters have a bit more scope to let our ideas run wild. We have all seen motorised ducks, swans, Loch Ness monsters, beer barrels, Coke bottles, surfers and so on, but it might be said that the model submariners are nuttier than the rest of us - why? The saner ones among the population might ask, why do they build models that they then deliberately sink out of sight? Of course the real answer is that it's not the model, it's the technology and the challenges that go with it.

The Oxford Model Boat Club have a couple of members of the above ilk producing subs in various guises from the readily available plastic kits suitably modified, and submersibles using plastic tubes from

plumbing outlets; that is to say nothing of the fully operational James Bond Lotus (not yet fitted with Bonds hand dropping the fish!)

Allan Struth, a club member with plenty of imagination, is well-qualified to join the elite band mentioned in the opening paragraph. Allan has passed well beyond his sails made from Tesco carrier bags and various weird models and ideas, he is now totally fascinated by submarines, so building one out of jam jars can only be viewed as normal (for Allen at least!).

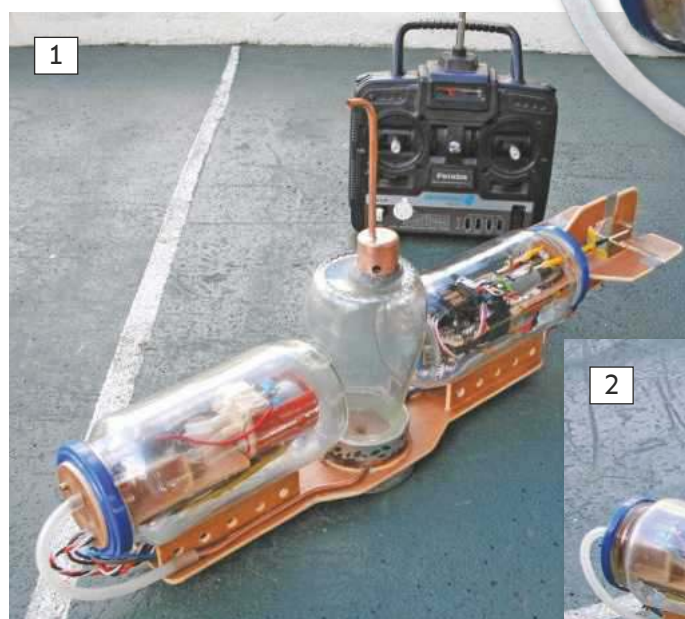
The basic principle is that one of the jars contains the drive motor, propeller shaft, steering servo and receiver and the second one a windscreen washer pump which floods the third jar to gradually reduce buoyancy until the boat submerges in exactly the same way as conventional submarines.

It will be obvious from **Photo 1** that the 'hull' is formed by two identical waterproof

plywood cut outs and duly cross-braced with the same material. Three jam jars are then bonded together using builder's high strength transparent adhesive to form an inverted 'T'. The jars are in turn bonded to the plywood frame using the same type of adhesive. The jars are mounted so that the screw tops, which are strengthened with similar plywood, faces fore and aft and in such a way that the tops are easily accessible.

To the rear of the plywood 'hull' is a vertical rudder and two horizontal dive planes made from the same type of plywood. The shape is very similar in appearance to the rudder and tail assembly of a First World War fighter plane (**Photo 2**).

The forward jar contains an ordinary car windscreen washer pump and a servo operating a micro switch. The inlet side of the pump is connected to soft silicone tube which exits the jar through the screw top into the water. A servo activates the pump, which then pumps the water from the outlet side of the pump into the vertical jar. The servo is of course activated through the transmitter. The crafty part about the system is that when the servo arm is in the dead band position it is shaped to squeeze the silicone tube, thus forming a simple cut-off valve. There is also a voltage regulator to provide reduced voltage to the otherwise too powerful pump.



4



3

The aft jar contains the rudder and dive planes servos plus the receiver and battery. As said previously, the jam jar tops (which are fairly fragile) are strengthened by bonding plywood to the outer side. Various wires, control rods and the silicone tube need to exit the tops so the plywood also provides a good key for any sealant. The whole system is powered by a small 2 cell LiPo which gives a surprising amount of running time.

The vertical jar/conning tower/ballast

tank sports a copper pipe 'stop end' on the lid, plus a piece of bent copper tube to represent a periscope. These items serve no useful purpose other than being a product of Allen's fertile imagination.

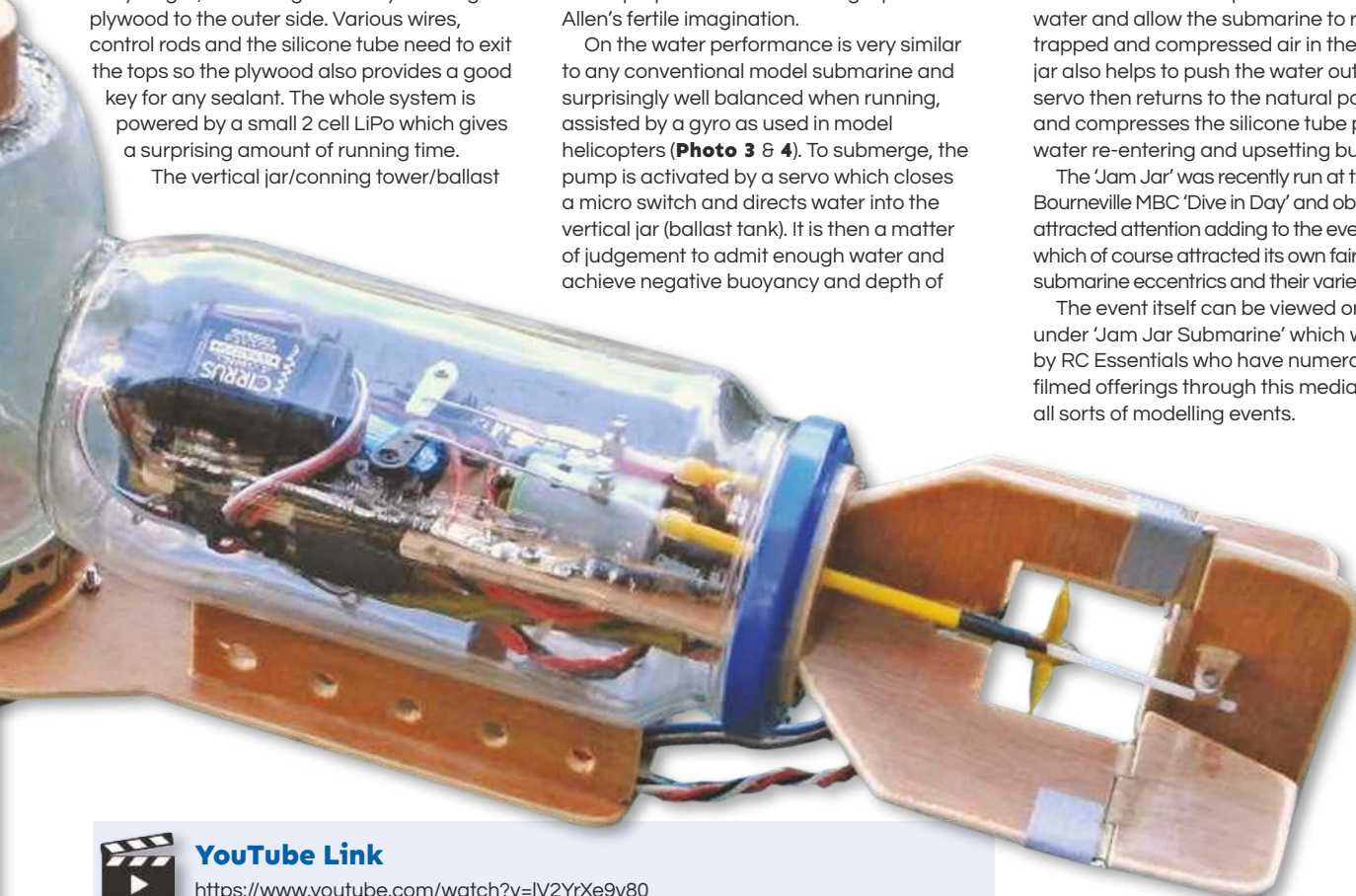
On the water performance is very similar to any conventional model submarine and surprisingly well balanced when running, assisted by a gyro as used in model helicopters (**Photo 3 & 4**). To submerge, the pump is activated by a servo which closes a micro switch and directs water into the vertical jar (ballast tank). It is then a matter of judgement to admit enough water and achieve negative buoyancy and depth of

dive. The imitation periscope helps in this respect but by judicious use of the various functions signalled from the T/X, a level run when either surfaced or dived is easily achieved. Of course the dive planes and gyro all play their part to help in the process.

To surface, the servo activating the pump and compressing the silicone tube is used in reverse mode to expel the 'ballast tank' water and allow the submarine to rise. The trapped and compressed air in the vertical jar also helps to push the water out. The servo then returns to the natural position and compresses the silicone tube preventing water re-entering and upsetting buoyancy.

The 'Jam Jar' was recently run at the Bourneville MBC 'Dive in Day' and obviously attracted attention adding to the event itself, which of course attracted its own fair share of submarine eccentrics and their varied offerings.

The event itself can be viewed on YouTube under 'Jam Jar Submarine' which was filmed by RC Essentials who have numerous well filmed offerings through this media and cover all sorts of modelling events.



YouTube Link

<https://www.youtube.com/watch?v=IV2YrXe9v80>

Soobrazitelnyy on sea trials in the Baltic.



Soobrazitelnyy-Russian Corvette

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

Construction of the deck house hand and safety harness rail plus external water-tight doors

Deck house rail

Placed around the deck house and parts of the upper superstructures are handrails. These are about waist height and are replicated here using .4 brass wire curved at each end. The simple method used to maintain the same distance from the inside of the rail to the surface of the deck housing, is a section of 2mm thick styrene slotted into place. When the rail is set firm the styrene section is lifted clear (**Photo 1**).

2: Handrail to the side of the deck housing and the safety harness rail on the edge of the structures.

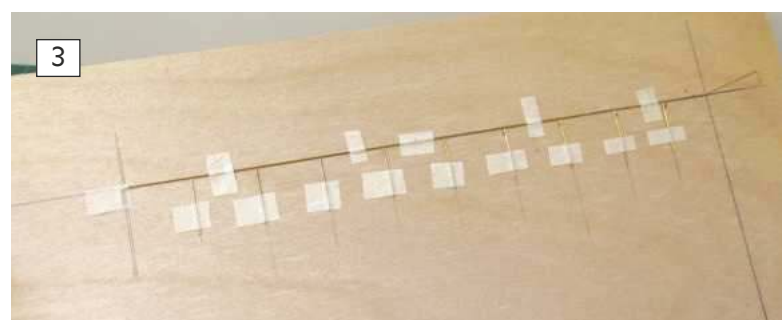
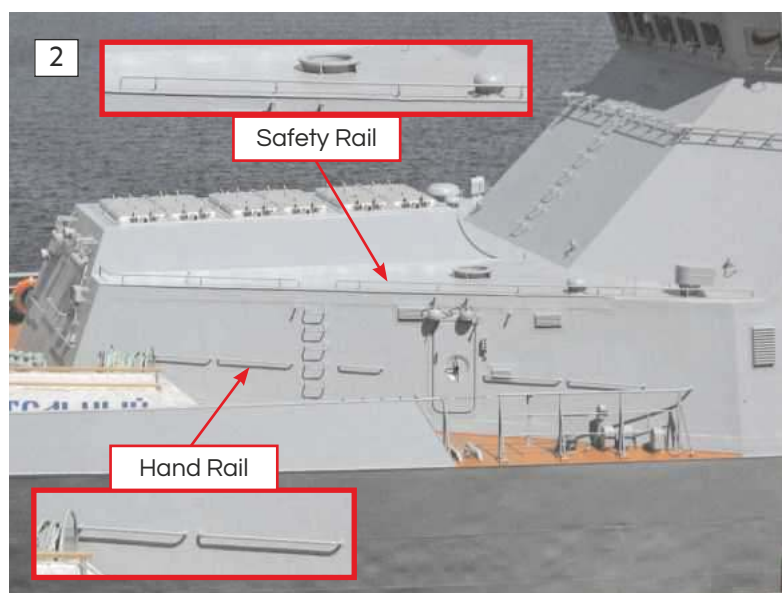
3: A simple but effective method for preparing a length of safety harness rail for soldering.

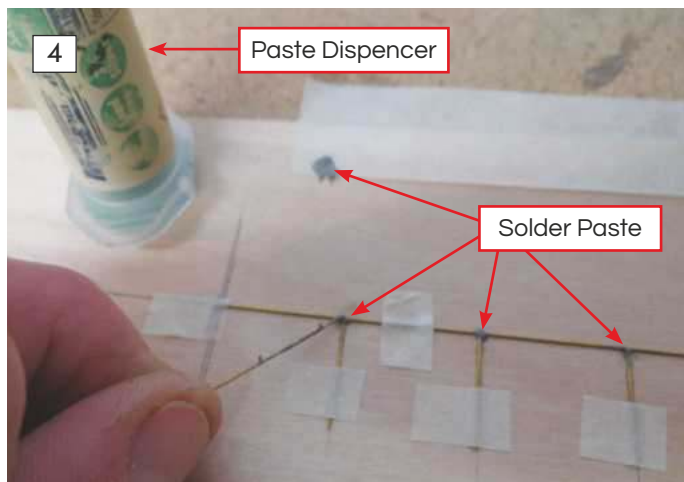


1: A simple but effective method that gives consistency of spacing.

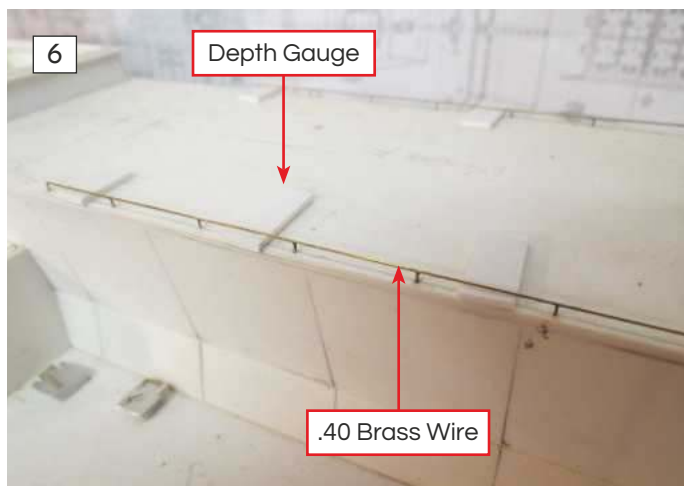
Safety Harness Rail

This rail is fitted along exposed deck edges and surfaces on to which a safety harness can be attached. A good example is in this image of the handrail and harness safety rail aboard Stoiky (**Photo 2**). The method used for making the safety rail is both well tried and simple. Here a length of timber is marked as to the spacings of the horizontal and vertical bars. Lengths of .40 brass wire are cut to a size that can be trimmed to a workable length on completion of the soldering phase (**Photo 3**).





4: Using very small amounts of solder paste each joint is prepared for soldering. 5: With the length of safety rail soldered a small strip of styrene is used as both depth gauge and protecting the soldered joint when cutting each vertical length to size. 6: Spacers or depth gauge used to ensure consistency along to length of rail. 7: A standard single panel single lever action WT door as fitted to HMS Duncan.



As demonstrated in a previous issue, when soldering fine wire solder paste is ideal for the job as shown here in **Photo 4**.

With the soldering complete, the rail is removed from the board and the vertical bars cut to length. For this purpose, a depth gauge is used (essentially a strip of styrene of the required depth with a hole at one end) the advantage is twofold 1.) You can maintain a uniform depth and 2.) when using the cutter there is less strain on the joint (**Photo 5**).

Fixing the rails into place

Using a pin vice, the holes in the deck edge or the edge of a structure are carefully measured and drilled out to suit. The length of rail is placed into its location and using small strips of styrene as a depth gauge the clearance above the deck will be uniform as seen here on the edges of the hanger roof (**Photo 6**).

Weathertight doors

Like much of the fixtures and fittings aboard any warship, they evolve with advances in materials and technology. Of all the many visits I have made aboard serving warships over the past 40 years it is only in the past ten of those years that has seen such rapid changes. For example, weapons, sensors and propulsion, but also more mundane fixtures such as weathertight doors or those fitted to external deck house surfaces. As an example of the latest WT doors installed on HMS Duncan a Type 45 destroyer, are of a single panel, single lever action rather than the multi-panel type, multi-locking dog favoured in previous generations of RN warships (**Photo 7**). In the former Soviet Navy, the types of WT doors in use varied depending on their location and purpose yet remained standard for many years. A

good example of this can be seen in **Photo 8**, a single panel type raised well clear of the deck housing and having a substantial wheel in the centre. Now, let's fast forward to 2006 and the launch of Steregushchiy, the first of the class of new Russian missile corvettes. Here the WT doors, although raised clear of the surface, has a single lever for operating the door and is a less prominent feature of its Soviet counterparts (**Photo 9**).

On Soobrazitelnyy, number two in the class, the WT doors have been re-modelled. All of these are now flush with the deck housing and have a T-type lever arm mounted slightly off centre. A number of these doors are designed to pull open and move to the side, the reason is to allow for the slope of the door on the deck housing. Other types are mounted on traditional side hinges but all are operated by the T-type lever and can be seen clearly in this official



8: Typical example of a type of WT door favoured by the Soviet Navy in the early 1980s as fitted to the Admiral Levchenko. 9: In 2001 the Russian navy began introducing the single panel single lever action door for the Steregushchiy.



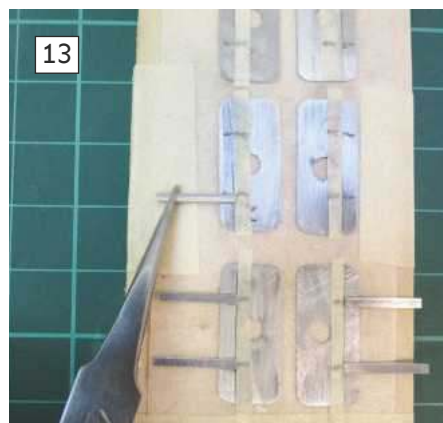


10



12

12: A mould was made, and a casting produced but I was not convinced by the result. 13: Fixing each set of hinges using strips of Litho.



13

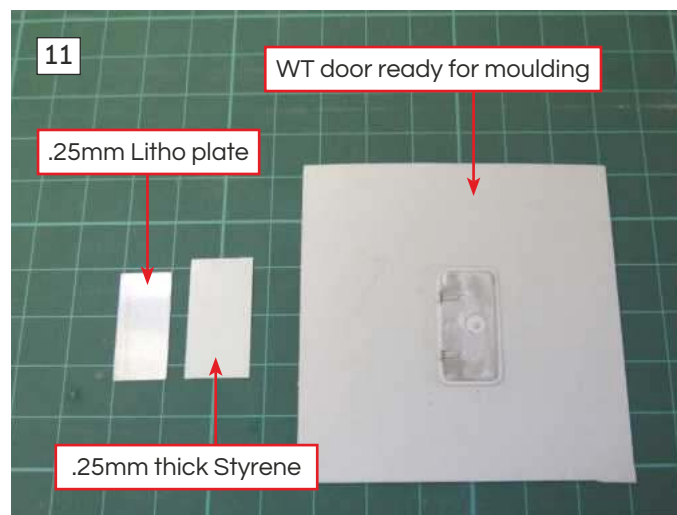
image aboard the Stoiky, third in the class (Photo 10).

Moulding

My initial attempt was to prepare a single WT door as a master for moulding with the thought that this would maintain uniformity. However, it became clear that there were three types of door that required moulds. Undaunted, I pressed ahead creating a single door using, 25mm Litho and .25mm styrene sheet with the Litho forming the door panel the styrene the surround or frame (Photo 11). The blended door was placed on a sheet of styrene ready to be tanked off so as to generate a rubber mould. With the rubber mould made a resin cast was taken, the results where only partly successful; yes, the cast looked passable, but remained either too thick to give the impression of a flush fit or too fragile when sanded back; a 3D-generated WT door may solve the problem of the thickness, but I fear would still remain very fragile.

Going back to a jig

Although my use of this method was not a complete failure, I needed to change tack if I was to gain the required results.



11

WT door ready for moulding

.25mm Litho plate

.25mm thick Styrene

10: With the launch and fitting out of the Soobrazitelnyy the WT door had evolved to become flush with the surrounding surface, a feature that may relate to reducing the radar cross section. 11: The original plan was to produce a master, a rubber mould and cast each door.



14

14: Using this simple jig all the hinges are prepared for the next stage. 15: Each prepared door panel is removed from the jig. 16: Removing excess Litho strip.



15



16

For this to happen, all the doors needed to be made in a combination of Litho and styrene. Making each panel from Litho was very straightforward with the location for the T lever carefully made and the opening expanded to suit, fixing each of the hinges depending on the type of door and its location. Here all the Litho panels were laid out on masking tape, sticky side up, and strips of masking tape used along the length of the door to provide a depth mark for the hinges. Strips of Litho were then cut to the appropriate width and using a small amount of cyanoacrylate, each strip was placed up against the masking tape as in Photo 13. It's worth noting that four of the WT doors have no external hinges (Photo 14).

With all the Litho hinge in place each door can be removed from the jig and using a curved

blade on the modelling knife the excess on the strip can be removed as in Photos 15-17. Once this has been completed all the Litho panels are prepared ready to be joined with the styrene door frame backing (Photo 18).

The next stage is to fix the Litho panel to its backing. Again, the trick is to ensure that each door panel sits evenly onto the styrene backing. For ease of handling, the styrene is laid out onto strips of masking tape, adhesive side up. Next, a strip of masking tape is added to each Litho panel and carefully located to the styrene backing. The purpose of which is to ensure that once the adhesive is applied to the underside of the Litho, the latter can be confidently dropped into place on the styrene backing without any need to move the panel into position (Photo 19).

With the WT doors prepared, the hinge pins, centre boss, T-type lever and upper pull handles

17: A neatly prepared door panel and hinges. 18: Not all the door panels required hinges whilst one had three.



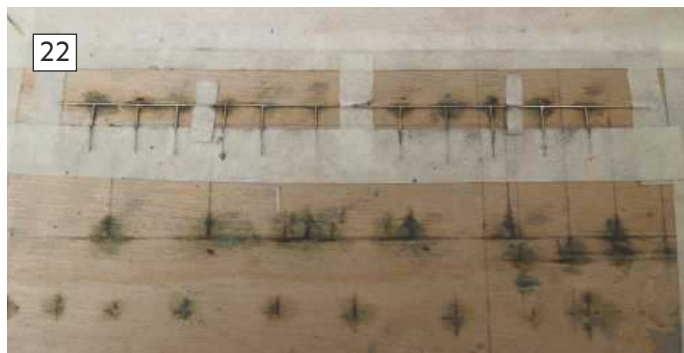
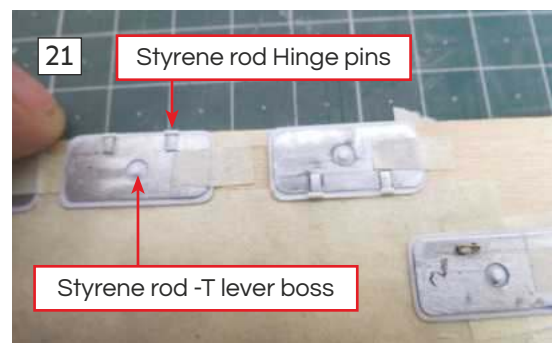
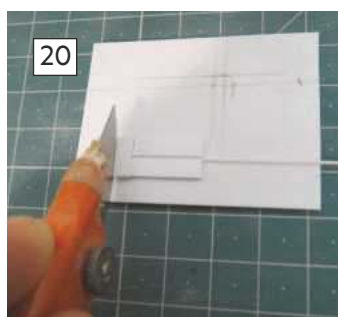
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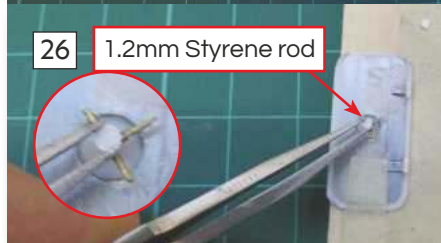
18



19: A simple but effective method to maintain symmetry when combining the Litho door panels with the styrene backing frame.
20: A jig for supplying all the hinge pins.



22: Using .35 brass wire to form the T-lever handles. 23: Using a profile jig to cut each lever handle to size. 24: Keeping each of the prepared T-lever handles in one place by using the sticky surface of the masking tape. 25: Fixing the T-lever handle onto the centre boss.



27: The thickness of the combined panel and backing frame is enough to provide an impression of a surface flush door when fitted into place.



28: WT doors prepared ready for painting but not just yet.

26 Capping the lever handle.

can be located (the latter are only added to four doors). First the hinge pins 0.88mm of styrene rod (Evergreen 221) and centre boss are cut using a simple jig (Photo 20) and fitted as in Photo 21.

Forming the T-type door lever

All the weatherproof doors on Soobrazitelnyy have a T-type lever for securing the door. These can be either made from brass wire or nickel silver; the latter could remain unpainted but fitted after airbrushing. I chose to stick with .35 brass wire and after airbrushing brush painted a stainless-steel finish. That's for later, for the present, adopting the same method of preparation as applied to the safety rails, all the T-type levers were soldered in one application (Photo 22).

A simple profile was made to ensure that each lever was symmetrical and using a curved blade each set of lever handles were cut to size

(.35 cuts very easily using such a method, but be prepared for a limited blade life) (Photo 23). To avoid the possibility of accidental loss, which is more than possible with small items, each T-lever was temporarily added to the adhesive side of the masking tape, and then carefully fixed onto the centre boss as in Photos 24-25. The next and final stage required a cover cap fitted to the top of the T-lever. Yes, like much of the finer detail a jig was made and using the same styrene rod as that for the centre boss .25 thick slices were cut and added. Given the thickness this sounds difficult to achieve but is surprisingly straightforward (Photo 26).

References and acknowledgements

Ref - Severnaya Verf, St Petersburg, Russian and Almaz central marine Design Bureau Project 80382 Tiger.

Thanks to Mark Findler for the use of his images of the Soobrazitelnyy; Kurt Grainer Warships Underway USA and to Peter Brown former naval architect Vosper Thorneycroft for his help and assistance.

A GRP hull is available from Fleetscale, www.fleetscale.com. Detailed plans are also available from Jecobin www.jecobinplans.com; Albion Alloys www.albionhobbies.com and Sylmasta mould making and casting materials, www.sylmasta.com.



The main hall with Moorhen MBC on the left, then the LBES and Welwyn Garden City Society of Model Engineers, with Stevenage MBC on the left at the rear.

St. Albans & District Model Engineering Society Show

Townsend Church of England Secondary School
on 28/29 September, 2019 by **Kim Belcher**

building zone for the youngsters, the single track steam train rides, a rolling road steam train and traction engine area and a radio controlled 'aerodrome' on the rear playing field. Then the ladies of the society had provided a superb canteen of food and drinks to keep all 'fed and watered' and some of the men 'manned' a large bring and buy stand. Added to that was the local Branch of the RNLI's shop in the entrance hall. Here are a few details regarding the model boats on display.

Rob Briancourt (from the host Society – St. Albans & District MES) had, what for me was the best model boat in the show, a beautifully detailed and finished 1/12 scale Vosper 46' RAF Fire-float 94 Mk2 (Crash tender). There were only two original craft made in Portsmouth around 1952/53 and they were decommissioned in 1958. The model was based on the Vintage Model Works version, which is of wood construction. Rob had then re-enforced this with fibreglass cloth and resin, adding some greatly machined and detailed fixtures and fittings. It is powered by a single brushless motor and a 19.2v battery. He started the build in May 2016 and completed it in July 2017. Just wonderful, I would love to see it performing on a large pond or lake.

Tony Dalton from the Luton and District MBC is no new comer to converting small plastic static kits over to radio-controlled models. Here he had his three 'Titanics' on the water and together for the first time. The updated Minicraft Models version at 1/350 (meant to be the finest available), a converted version of the same model to HMT Olympic and the Entex Industries version converted to HMHS Britannic. The latter had eight 3D printed life-boat launching davits acquired from eBay. Extremely neat and an inspiration to what can be achieved with models so small.

LEFT: Jeff Carter, from the Lifeboat Enthusiasts' Society in front of his Trent-class lifeboat 14-02 and his Atlantic '21 RIB model, talking to Richard Chesney and others regarding membership. BELOW: Lee Dickinson's dining room table decoration piece, the 1/12 Newhaven lifeboat 17-21 'RNLI David and Elizabeth Acland'.



I've said it before and I'll say it again; this is truly one of the very best modelling shows organised by a single club. At 1615hrs on the Friday afternoon the school has just been vacated by the pupils and staff. By 1830hrs there is an outdoor pool filling up, the gymnasium has had a covering put over the floor to protect it, a track is assembled for the steam train rides, many dozens of tables have been laid out in the various halls and side rooms. By opening time (1000hrs) on the Saturday there are eight model boat clubs exhibiting in two large halls, alongside, radio controlled trucks, lorries and diggers, many large Meccano exhibits, a model aircraft





ABOVE LEFT: The 1/16 Rother-class lifeboat, owned by Phil Locke, that is modelled on the 33ft vessel that was stationed at Margate in Kent. ABOVE RIGHT: A 'bow on' shot of Jeff Carter's restored 1/12 Trent-class lifeboat that was stationed at Ramsgate, 14-02 'RNLB Esme Anderson'.



ABOVE LEFT: On the Stevenage MBC stand an unusual, but well-crafted and realistic, diorama of the 'fitting out of HMS Bounty 1787'. ABOVE RIGHT: This wonderful model of a Trinity House Lighthouse vessel is by Keith Henley of the Moorhen Model Club. BELOW LEFT: A mid-afternoon social gathering for members of the Luton & District MBC, with other clubs in the gymnasium. BELOW RIGHT: The 'stern end' of the Luton & District MBC's stand in the gymnasium.



Peter Le Sueur on the Welwyn Garden City Society of Model Engineers stand had a similar display with small converted plastic models to R/C. In supplied photograph can be seen four of his models, from the front to rear, USS Eastwind W-279 an ice-breaker based on the 1/285 Revell kit. Then the 1/400 Maquette model of HIRMS Kniaz Potemkin Tavricheskiy, a pre-Dreadnought Russian battleship; another similar battleship 1/350 HIRMS Borodino (1904) from the Zvezda and lastly, from the Trumpeter 1/350 kit, Grazhdanin (ex-HIRMS Tsesarevich), another battleship.

Paul Chilcott, also on the Welwyn Garden City SME stand, had tried to buy a kit of the TT-Line Swedish ferry 'MS Robin Hood'. It would appear that the retailer did not want to export the model, so Paul found the plans and decided to scratch build it! This and his other models got a lot of attention throughout the weekend.

Brian Chiles, a member of the Luton & District MBC, was displaying and sailing a



INSET: A close-up of the cabin area detail on Rob Briancourt's Crash Tender. BELOW: Here, at the far end of the gymnasium, was the host Society's model boat section's display, with Rob Briancourt's superb Vosper 46ft RAF Crash Tender.





The first time together on the water, Tony Dalton's 1/350, R/C 'Titanic' trio; RMS Titanic leading in the middle and HMT Olympic, with HMHS Britannic in the foreground.



model of Motor Fishing Vessel (MFV) 1567. This had been scratch built by Ron, a friend of his, who had bequeathed it to him in his will. Here it was seen flying the defaced Blue Ensign of the Royal Maritime Auxiliary.

Lee Dickinson, on the Lifeboat Enthusiasts' Society display, not only had his 1/12 Brede-class lifeboat but also his recent acquisition of a 1/12 Severn-class lifeboat. This he purchased from the Child Beale Collection and the model represents the Newhaven (Sussex) lifeboat 17-21 'RNLB David and Elizabeth Acland'. He has completely cleaned and refurbished some areas, also rewiring and adding the impressive lighting array for navigation, walkways and interior illumination. However, at 58in long and requiring two people to move it, 'Mrs. Lee' has requested its permanent removal from the dining room table, so it will soon be finding another 'slipway' in Kent!

Steve Briancourt, from the West London Meccano Society (www.wlms.org.uk) had the most impressive model imaginable on display in one of the side rooms. It was a 72kg (159lbs/11st 5lbs) 1/100 USS Missouri, an Iowa-class battleship. It is 9ft long and just over 1ft wide, with the main hull comprising three sections held together with three 'pins' using the 'determinate structure' method for assembly. This gives an incredibly rigid end product, with no redundant load parts. The superstructure is a unit in its own right and when positioned aligns immediately

ABOVE: On the Luton and District MBC stand, the MFV 1567 owned by Brian Chiles and inherited from his fellow member and friend, Ron. BELOW: Peter Goddard's Meccano working model of a Royal Navy float crane, No.IV (Clive).



with all the required drive systems. These are propelled by 17 motors which drive four propeller shafts, two rudders, three main turrets (which have rotation, elevation and gun recoil) two drop anchors and four gun director radars. All of the parts are restored (junked) Meccano parts. The elapsed build time was 6½ years, which included nine months of planning.

Peter Goddard was also in the same room and a fellow member of the West London Meccano Society. He was displaying a model of a Royal Navy crane lighter No.IV (Clive), which served a large part of its life in Malta and helped service HMS Hood. The model's crane module was built from Meccano's plans No.28 in the Super Model series.

So, from this and the photos you will see that it was a very well-attended show by modellers from many disciplines. Their models and displays gave opportunities to engage with the paying public (some 1,350 across the two days) and importantly hundreds of children, this alone made it well worthwhile. Added to this was the fact that I saw a number of clubs advertising themselves and providing 'flyers' with their details on; this is a certain way of bringing new and young members into our clubs. Then the RNLi gained from the show, their shop sold around £650 of items, plus the raffle income and our boxes on our LBES stand had almost £35. Thanks must go to the Committee and ladies from the Society, who welcomed and looked after us all across the two days and also the school caretaker, Tony, and his staff who helped with all aspects of the running, especially the pond and the exhibitors' parking. See, it can still be done!

Steve Briancourt standing behind his 9ft-long Meccano model of USS Missouri.





Blackpool Model Show

TOP: Manx MBC with an impressive display and a wealth of detailed models. BELOW: The alternative side to the Manx MBC display showing the Ton-class minesweeper HMS Nurton, the original completed by Harland and Wolff Belfast in August 1957.



19/20 October, 2019
Norbreck Castle Hotel
by **Dave Wooley**

The event

With the close of October, it's that time again; yes, it's the Blackpool Model Show, now in its third year with the present format. For those of you with a long memory, the Blackpool Model Boat show started its journey in the famous Blackpool tower nearly 30 years ago. Thankfully the show survives and prospers with the broadening of the event to include the expanding interest in trucks and armoured vehicles. The model boat segment of the event retains its premier location within the Norcalympia hall, whilst the smaller ballroom located to the side of the main ballroom, houses dedicated tank and truck arena's and the busy bring a buy more on that later.

Regular readers will no doubt be familiar with the basic format for boats, clubs and traders. However, this year there was no less than 14 individual displays, 24 club/society displays and 18 vendors. It was also nice to see clubs from much farther afield attending this iconic event such as King Lear MBC, Moorhen MBC and Black Park MBC. There is no doubt the introduction of R/C trucks and tanks some three years ago has impacted positively on the show increasing participation and numbers attending.

Clubs

As mentioned above, there were 24 clubs and societies attending, and it takes time and effort to prepare for the show. Unfortunately,



ABOVE LEFT: The lifeboats Enthusiast stand with their huge model of the Mersey class 38ft RNLB Lincolshire Poacher. ABOVE RIGHT: The superb J-Class Hulls.



Essentially, I am covering all things boat shaped, but I really couldn't resist showing this huge truck model, a tricky job to steer I would think.

there is not enough space here to cover each and every display, but I would like to mention how Kirklees MBC demonstrated in straight forward easy to follow terms a motor installation. This included ESC, wiring, a new type of connector and switcher, answering the often-repeated question of how to wire up the electrics for a two-motor installation.

A mention also for the larger than model life eye catching display of the Lifeboats Enthusiasts, as they say you really couldn't miss them. The best club stand award for 2019 and for the second year running went to Manx MBC for a well-presented and inspirational display of models.

Whilst viewing along the lines of superb club displays, I stopped for a chat at the Taskar Marine Modellers from Northern Island. Occasionally you come across some interesting stories attached to model builds and here was a good example in Fred Crompton's 1/48 HMS Widgeon. Fred explained with photos how his mother and father were married during wartime aboard the Widgeon. A good enough reason to build the model I would say.

Individual exhibitors

There is always something different in the individual entry and this year was no exception. Certainly, one of the most impressive exhibits

was an all metal (PE) constructed 1/96 Bismarck. Not just in terms of its depth of detail but Michael Williams the builder produced all the drawings suitable for the photo-etch process, gaining not just a first for Naval vessels but best in show and the coveted Tower Trophy. Such an undertaking is a long-term project, but it does beg the question paint or not to paint?

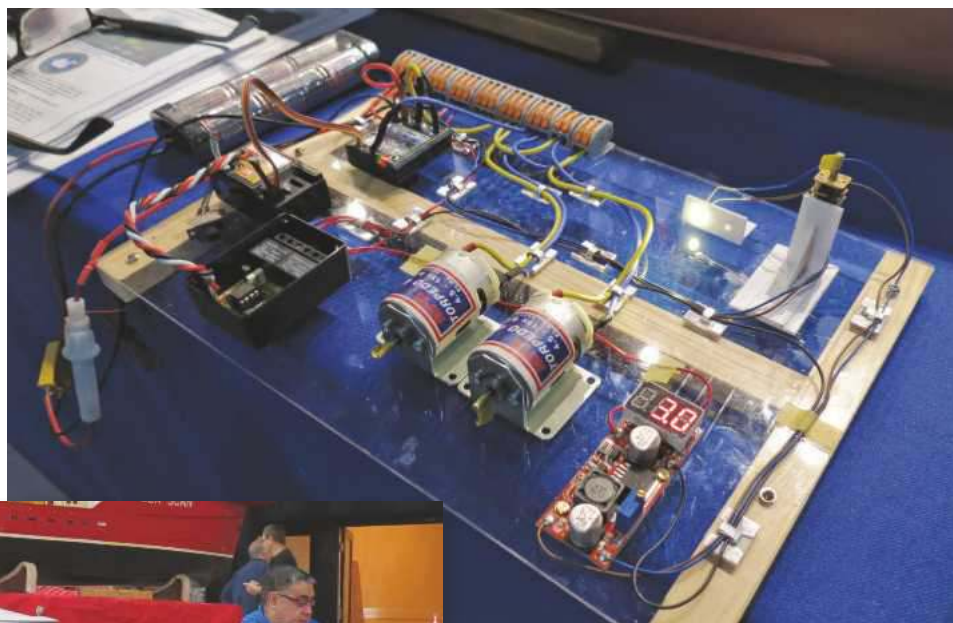
Another all new presentation from a well-known model builder Ron Paddison was USCGC Bertholf in 1/48 scale. This new generation of high endurance cutters are the

latest to enter service with the USCGC. Ron has spent three years building Bertholf aided in no small way by several excellent images by Kurt Grainer and published in Model Boats Magazine, Range Finder column.

Trade

One of the great advantages of shows like Blackpool is the access to a variety of vendors many familiar faces who have attended Blackpool over the years and some like Deans Marine from day one. Yet it is always interesting to see a new venture for example Beck's Model Marine specializing in R/C submarines and associated fittings. They really have hit the road running with four different types of modern SSNB and SSN submarines soon to expand their range to include WW2 boats.

Also, of great interest is the expanding range of cross channel Ro-Ro vessel from Linkspan. I do like the presentation of their latest projects. Here you can get a taste of how the model is being developed long before it goes on general release. Yachts, particularly J-Class are being marketed by Alan Horns of Nottingham; these are superb examples of the art of yacht building fast and elegant all in one package.



ABOVE: Seen on the Kirklees stand was this good instructional tool to help the uninitiated on how to wire up twin motors, electronic speed controller and switcher. LEFT: This twin water jet powered Condor Catamaran ferry seen as part of the Black Park MBC display. Also shown was the feature in Model Boats magazine covering its construction.





An eye catching and striking 1/72 offshore research support vessel Oceanic Explorer built by David Parry of North West Scale MBC.



ABOVE: A superb 1/25 scale all-scratch-built twin rig shelter deck trawler Shemarah 11 by Gareth Jones.



ABOVE LEFT: Michael Williams displaying his 1/96 scale all-metal Bismarck. ABOVE RIGHT: B-19 Prototype Spirit of Free Enterprise taking shape from Linkspan.



ABOVE LEFT: An interesting model of the 1870 Mississippi stern wheeler Mathew V Spress. ABOVE RIGHT: A 1/48 HMS Widgeon with a personal interest story attached seen on the Taskar Marine Modellers stand.



Models

It is always a difficult task to high light models from individual clubs. I saw so many superb examples that my mind went into proverbial overdrive. So, for once I'll let the pictures do the talking but I did like the rescue dog in a boat on the Kirklees stand very different and original. However, as this is a model show I must make mention of the truck and tank arena's

collection of outstanding models, especially John Bennett's Goliath recovery truck.

Conclusion

In previous years I have reviewed not just the models, but the venue and it's not always had top marks. But over the past three years the venue has been much improved, with good

lighting, good access and reasonable parking. Above all, the event has a very well-oiled organizational base and my thanks for all the help given during my visit. I shall be looking forward to next year, can I bring a boat as well. I can't close this review of Blackpool model show without mentioning the supreme effort of the 'bring and buy' team in raising £1257.17 for the RNLI and £38 raised from the slot cars.

BELOW LEFT: New to Blackpool are Becks Model Marine specializing in working submarines and associated hardware. BELOW RIGHT: Looking back in time on the King Lear MBC display. We have come a long way since those far off days of model boating.



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LEFT: Every 1960's Playboy's dream, a classic Riviera motorboat complete with girlfriend. The model was displayed with photos of its radio-controlled adventures on the water.

The Montignac Model Show 2019

By David Garden

Montignac is a beautiful town located on the Vezere river in Dordogne. Containing many unique shops, bars and restaurants, it is a popular tourist destination. To my delight every two years it hosts a superb model show held in the large Salle de Fete. Exhibitors come from all over France and the models on display are very

varied coming from all disciplines of the model hobby. The only UK modellers there (that I know of) were myself and Alan Williams. This was the third time I have attended the show and as usual I took a display table as a base to seek out the best of the nautical exhibits.

On arrival, I was struck, as always, by the very friendly welcome I received from

Christian and the organising team. Laying out my table I made sure several past issues of Model Boats were on display. This immediately caught the attention of modellers present who although they did not understand all the text were interested to see the pictures of the models featured. They lamented the fact that a similar magazine is not published in France!

I was aware of a large table being set up at the front of the hall and shortly after the hall opened to the public at 1000, we exhibitors were summoned for a small glass of local honey wine and some locally baked biscuits. Quite a start to the show! A typical French touch was that the show closed for lunch between 1200 and 1400. The lunch recess gave me a great opportunity to take photographs of the models on display. The French modellers told me this was a model show 'French Style'.

Turning to the models on display, there was the usual military vehicles, figures, planes and ships. There were also many civilian subjects as well as historic dolls clothing, sci-fi, cars and R/C boats. Model boat stands were varied and ranged from military static models, civilian radio-controlled pleasure boats and historical working vessels in well-built display cases. The people who made the latter were very proud of the boats that plied their trade on the Dordogne and Vezere rivers and that on the Gironde leading to Bordeaux. The advantage of attending a foreign show is that you can learn the history and traditions of the country's waterways and seagoing vessels.

The competition was a low-key affair where the entries remained on the display tables and the judges went around to assess the models. Prizes were awarded on Sunday afternoon. When I arrived at the show, I cast an eye over the prize table and the trophy that stood out was a former aircraft propeller blade with the central boss. This was a trophy given to the winner of the aircraft class and deservingly went to a Spanish modeller who

BELOW: One of my all-time favourite static models the ex-Matchbox 1/72 Flower-class Corvette. In this case, superbly finished as HMS Nigella in 1943, a veteran of many Atlantic convoys.



'The Lone Wolf', a 1/72 WW2 German U-Boat; in this case U505 a Type IXC.



ABOVE LEFT: A very well-detailed model of a French fishing vessel that works out of the Atlantic ports. I really liked the detail and the figures on this model. ABOVE RIGHT: A water capable radio-controlled 1/20 French fishing vessel. I really liked the extensive, realistic rigging.

had understandable difficulty carrying it to his display table. Luckily, he did not have to take it home, as a plaque would be added with his name to the trophy and he was given a miniature version to add to his trophy cabinet. As well as giving out competition prizes, all exhibitors were given a very nice little vignette of a local landmark fountain inscribed with date and place of the show. This was a real treat for me and a nice memento which I will keep on my modelling bench.

During the weekend I almost lost count of the invitations I received for future model shows. One I always take up is in October at Bordeaux. I have been told by the organisers to expect a lot of models and a lot of red wine drinking. Ah, two things close to this modeller's heart! Although I hope the model boating pond does not burst as before and flood the neighbouring sports field!

Well I have been to many model shows described as 'the friendly show', but Montignac really lives up to the description

A 1/35 Italian Torpedo Boat. This example was based on the Black Sea with M.A.S. 563 of the Regia Marina and fought against the Soviet Union in 1942.



and more. The only downside is that it is held every second year. I already look forward to the next to be held in the middle of September 2021. If you are in the vicinity then please pop in and say hello, you will not be disappointed. The local amenities make an attractive venue for the family if they do not want to stay in the show hall. I particularly recommend the

canoe experience on the Vezere River from Montignac through St. Leon to Les Eyzies. If you have some radio-controlled boats, they could accompany you!

Many thanks to Christian Chauzaint and the organising team for a great job and the friendliest of welcomes to all the exhibitors and the general public.



ABOVE: A great model of a French river barge complete with its owner's 2CV car. These barges sailed on the larger rivers and canals such as the Seine. RIGHT: A 1/20 model of a Langoustier de Camaret made in wood. These were French fishing vessels that fished for shrimps. BELOW: A cased model of a traditional commercial craft that plied its trade on the Dordogne and Vezere rivers, here modelled carrying timber.





Airfix are teasing or testing the market before producing this 1/350 HMS Prince of Wales; but which is it?

Scale Model World

Telford, 9/10 November, 2019 by **Dave Wooley**

Officially the venue opens slightly earlier than the event which is listed as 10am. There are acres of parking space, some within the area of the venue, most only a short distance away. Prior to opening, there is a long line of eager punters trailing back from the main entrance. The halls are subdivided to accommodate overseas clubs, UK clubs and Venders. The UK displays also include SIGs (Special Interest Groups), specializing in models or themes of interest, such as coastal forces, battleships, D-Day and more. As you may well have guessed the overall theme tends to be military orientated, but there are many non-military subjects.

The models

There are thousands of models on display which makes my job, problematic if not difficult. So, I have had to be very selective as there just isn't room here to show anything like what is available to see. For that you must be there.



The Imperial Chinese Navy cruiser Ching Yuen at 1/350.

The venue

I have reported on Scale Model World (SMW) for some years and it never fails to impress. The venue for clubs and vendors is housed in three large halls whilst the first floor is given over to the vast number of competition entries. There is a whole plethora of classes, many 100s of models which of course includes everything marine and there is always the unexpected, making this type of model show so much more interesting.

The IPMS UK is the official organisation in conjunction with the International Conference Centre, Telford. This is a very slick operation with plenty of yellow shirts (IPMS officials) just about everywhere over the two days. From a personal perspective all those representing the media/press are given their own time slot in order to take unimpeded pictures of the competition entries.



Sea Plane carrier HMS Albatross another top-class gold medal winner by Italian model maker Maurizio Barbalucca.

The marine competition for 2019 was certainly smaller in numbers and scales but none the less, the standard is as expected, very high. For example, the Imperial Chinese cruiser 1/350 Ching Yuen by Tony Beesting was a masterpiece, being awarded a gold medal and the converted Albion Alloys award for ships. The best marine exhibit award went to Erick Chang with his superb 1/350 Chinese battleship Ting Yuan. Not all the marine entries were military in nature. For example, a well-deserved gold was given to a diorama of two Finish icebreakers, Urho and Sampo by Don McKeand. Remaining in the competition area there were several exhibits that caught my eye which were not included in the general list of ship model entries. One was a fascinating 1/144 diorama of the famed Jules Verne fantasy submarine Nautilus with the giant squid attached. The other, was the Kriegsmarine naval test centre at the secretive Peenemünde on the Baltic coast. The diorama depicts a test rig for a pulse jet powered catamaran. Many of these exhibits are either enhanced kit/resin or built mostly from scratch.

Vendors

Once again, the number and variety of vendors is more than you could take in in a single day. It all depends on personal requirements and taste. There is a positively huge numbers of kit and tool suppliers, for example Squires for tools to name but one with a mammoth range to choose from. Naturally being Europe's premier IPMS show, all the big players were on hand such as Italeri, Revell, Pocketbond and Airfix to name just four. Pocketbond presented their new products from the likes of Trumpeter and Airfix teasing the punter with a 1/350 HMS Prince of Wales aircraft carrier. This is the second time Airfix have shown a 'might have been', but now they will have to follow through and market this very saleable showstopper as a kit.



ABOVE: The Ting Yuan Imperial Chinese Navy battleship of 1883 with torpedo boats mounted aft at 1/350.



ABOVE: Another Gold for Don McKeand with his Finish icebreaking duo Urho and Sampo. INSET: On the quay side another good example of what can be done with this 1/72 USN PT boat.

Club stands

This year there seems to be a swing towards any aircraft with rotors. There were several dioramas showing helicopters on ships, in hangers and on airfields. Unlike other years, there was very little in the way of marine exhibits of commercial shipping but there was a well-built and presented scratch-built 1/350 Queen Mary.

Regular readers will no doubt recall Józef Sydlonski's magnificent 1/72 USS Arizona. Here Józef has built a 1/35 turret and catapult from the Arizona and incorporated several features such as a team of welders working on the barbettes. The pilot of the floatplane running his engine (the propeller is rotating) and several crew members working the deck around the barbettes.



ABOVE LEFT: An unusual diorama depicting preparations for sea trials at the secretive WW2 German test facility at Peenemünde. ABOVE RIGHT: A superbly presented 6th Rate Napoleonic British Frigate.



ABOVE LEFT: The 1/200 kit of the WW2 carrier USS Yorktown, a prime candidate for R/C. ABOVE RIGHT: Vendors all the way from Japan with Hypersonic Model Art.



ABOVE: Józef Sydlonski exemplary 1/35 build of the after turret including float plane on the USS Arizona.

Conclusion

For those that have not had a chance yet to visit SMW then you have missed a modelling treat. For those like myself reared on R/C and large-scale models, the show offers a chance to see our hobby from a different yet familiar perspective. The tools, materials and information are all very familiar, but the level of detail entered on much of what you see at Telford is of a different order but non the less truly absorbing. I always leave SMW enthused as I always pick up this or that technique which I can transfer to my own model



ABOVE: Revell displaying their new 1/72 U-154 Type IX C U-boat.

RIGHT: Right for R/C conversion this all new 1/72 Revell PT588 (No.05165).



A diorama based on Jules Verne submarine Nautilus.



ABOVE LEFT: The Daventry Club stand was very nicely laid out. ABOVE RIGHT: The Lifeboat Enthusiasts' Society stand.

International Model Boat Show 2019

Colin Bishop reports

This year's show was reduced to two days, Saturday and Sunday instead of the usual three. At the time of writing I don't know whether this affected overall attendance (the bad weather must have had an effect) but the number of traders was down again a little following a rise in 2018. Indeed, trader levels are almost down by half compared with just a few years back, but there are several reasons for this as some well-known names have retired, others are hosting their own events and it continues to be difficult to cover costs. Nevertheless, those traders who did attend were attracting a lot of attention and sales and many of the distinctive SLEC flat pack boat kits could be seen being carried around the hall like banners, so some people were clearly very happy!

Certainly, the hall was pretty full of visitors, when I arrived soon after opening time on Saturday the number of model boats on display appeared to be well up to usual standards with some very interesting new ones to be seen. There were over 30 clubs and non-commercial stands, and all had gone to a lot of time and trouble to display the models to best advantage, so it was possible to get up close



The Worcester Club display which featured Pedro the model boat building pirate took the best stand award.



John Gittings of Cardiff Marine Modellers giving a practical demonstration of building a Sergal Vasa kit.





ABOVE: The Northampton & District MBC put on a smart display with a big video screen showing models in action.
BELOW: The Happy Holiday Modellers featured two big lifeboats, a Titanic and a superb Mountfleet Models St. Nectan trawler.



Some outstanding and innovative examples of 'upcycling' could be seen on the Daventry MBC stand. The things you can do with a fairley liquid bottle or a sardine tin are endless!



Hot from the drawing board, designer Dave Milbourn delivered this 1/8 scale fairey huntress prototype kit to the SLEC stand on Saturday.

to study and admire the detail. The award for best stand (A trophy sponsored by Model Boats Magazine and presented by the editor) went to Worcester MBC who imaginatively featured 'Pedro the Pirate' and runners up were Wicksteed Park MBC and the Lifeboat Enthusiasts Society, but many of the other stands were breathing down their necks.



ABOVE LEFT: Nostalgia on one side of the 2nd placed Wicksteed Park Club stand, the other was more warlike, with many naval vessels. ABOVE RIGHT: Tony Green Steam Models had a wonderful display of vintage engines as well as selling everything a steam fan might need plus more besides.





ABOVE: Ferries have become more popular of late thanks partly to the excellent kits from Linkspan Models.

As usual there were a lot of lifeboats and warships present which reflect popular areas of the hobby, but among the oranges and greys there was enough variety of other types of model to keep anyone interested.

The pool area is always a magnet with Steve Dean and his team orchestrating a stream of themed demos with lifeboats, warships, ferries and other varieties of boats plus special sessions for youngsters. It is very noticeable these days that the ready availability of LED lights has encouraged many modellers to

incorporate full illumination into their models and not just navigation lights.

A big plus at Warwick which you don't always see elsewhere is that there is plenty of seating, particularly around the pool but elsewhere as well, which is very welcome to those visitors whose knees are not quite what they used to be. The restaurant seemed to be doing well too.

Dates for next year were posted up as being 7/8 November 2020, so make a note in your diary now.



ABOVE: The Denny Steam Gunboat is an ever popular subject and this example, presented by the Surface Warship Association shows exactly why.



ABOVE LEFT: This superbly built Orca fishing boat seen on the King Lear MBC stand might almost be the real thing. ABOVE RIGHT: Thoroughly deserved best stand of the show went to the Worcester Model Boat Club. Sinéad Adams



ABOVE LEFT: The editor presents second place to the Wicksteed MBC stand. Sinéad Adams ABOVE RIGHT: And third prize went to the Lifeboat Enthusiasts Society stand. Sinéad Adams



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 products. 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 with the relevant information or send samples direct to the editorial address in the front of the magazine.



although all can be rectified with a large range of aftermarket parts that have built up over the years. As always though, the kit in its raw form is not an expensive purchase and treating it to some 21st Century-produced 'bling' will not do it any harm.

Inside the box you will find a two-part hull, eleven sprues, one clear part sprue, an A4 full colour instruction booklet with 24 pages covering a 51 stage build and a small decal sheet. As presented on the box, decals are provided for PT-579 or PT-588 both of which served with the PTRon 39 (Motor Torpedo Squadron 39) as part of the Pacific Fleet operating out

of Samar during July 1945. If you choose to replicate one of these two boats, you will be given the opportunity to finish it in one of the more interesting camouflage schemes adopted by the US Navy during the Second World War.

A straightforward build which I would expect to blunt a few blades and make use of a blob or two of filler, but the final result should be pretty rewarding, considering what you paid for it!

Revell model kits are available from all good toy and model retailers. For details visit www.revell.de/en.

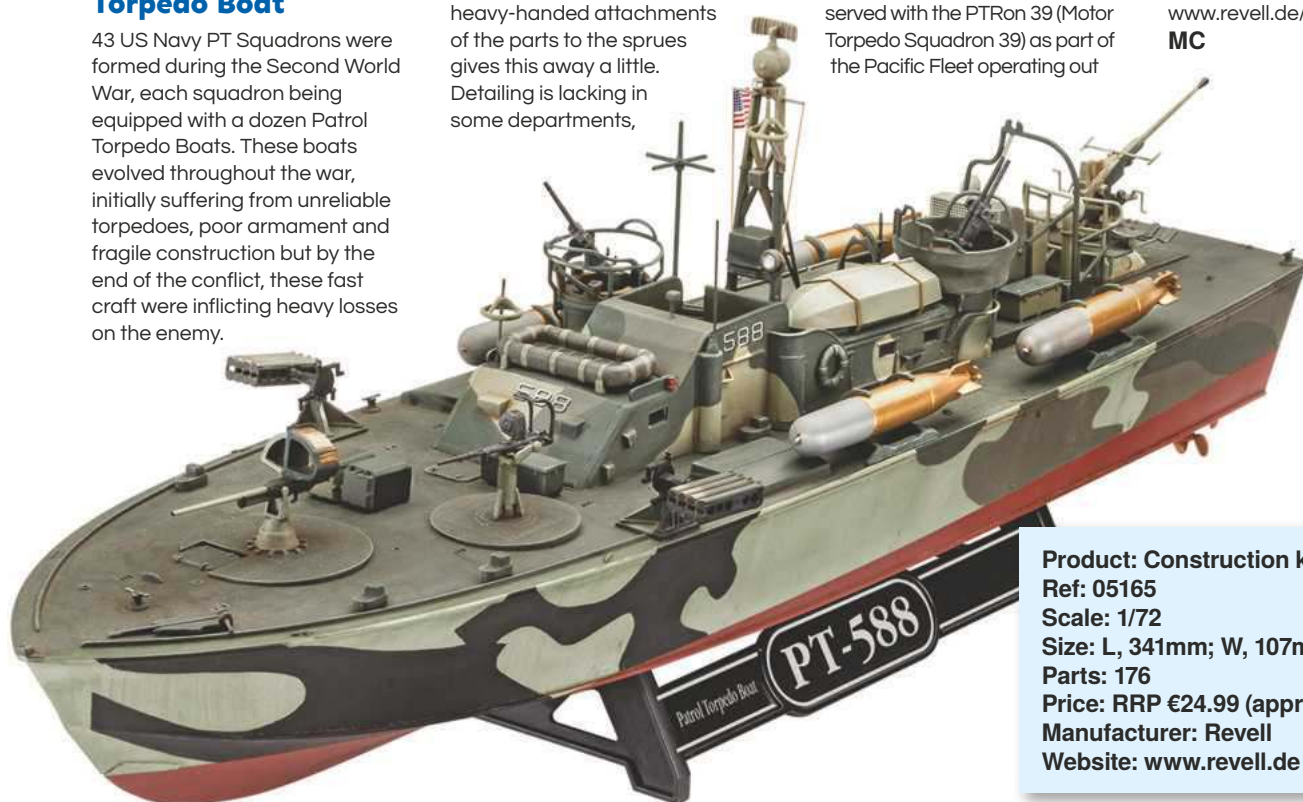
MC



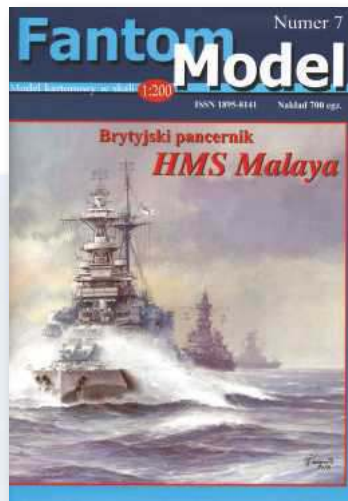
Revell Patrol Torpedo Boat

43 US Navy PT Squadrons were formed during the Second World War, each squadron being equipped with a dozen Patrol Torpedo Boats. These boats evolved throughout the war, initially suffering from unreliable torpedoes, poor armament and fragile construction but by the end of the conflict, these fast craft were inflicting heavy losses on the enemy.

This rebox from Revell can trace its roots back to the early 1970s and some (not all) of the heavy-handed attachments of the parts to the sprues gives this away a little. Detailing is lacking in some departments,



Product: Construction kit
Ref: 05165
Scale: 1/72
Size: L, 341mm; W, 107mm; H, 120mm
Parts: 176
Price: RRP €24.99 (approx. £21.40)
Manufacturer: Revell
Website: www.revell.de



Fantom Models HMS Malaya

Commissioned on 1 February, 1916, HMS Malaya was a Queen Elizabeth-class battleship which was destined to see action in the forthcoming Battle of Jutland. Between the wars, unlike her sisters, HMS Malaya was not reconstructed but did see service in the Second World War, beginning in the Mediterranean from 1940. She was seriously damaged by a torpedo from U-106 in March 1941 whilst on escort duties, a role she would continue to successfully carry out until she was placed on the reserve in 1943. HMS Malaya was withdrawn fully from service in late 1944 and was scrapped at Faslane in 1948.

At present there are no 1/200 scale model kits of the Queen Elizabeth-class out there but thankfully, we do have card options as presented by this comprehensive Fantom Models card model kit. For a fraction of the potential cost of a 1/200 Trumpeter kit for example, you can go down the card road instead. So, what do you get for under £30? Well you get a hefty B4-sized (353mm x 250mm) filled with 32 sheets of parts, supported by 18 pages of drawings; the only initial downside is that the instructions are all in Polish but to be honest with you, the supporting drawings explain every thing you need to know

to carry out this build. On first inspection everything looks a little daunting but the best approach is to take the booklet apart, removing all of the coloured components which will leave just the instructions and all the annotated line drawings behind; it will/should all make a lot more sense from now on! One thing I would recommend (from experience) is to buy a set of laser cut frames for the hull. These are available from Fantom Models for PL 82 (approx £16) and are well worth it. While we are on the subject of extras, Fantom also supply PE parts, extra laser-cut details, 102mm, 152mm, 381mm barrels

and 40mm pom-pom barrels and an engraved wooden deck and some laser cut rails. If you purchased these extras and including the cost of the main kit and hull frames you will still only have racked up around £110 pound; just think how much that Trumpeter version will cost you?

This is the seventh in the Fantom range, HMS Repulse,

Suzuya HMS Good Hope are already available (in 1/200 and 1/300) while HMS Suffolk is in the making. Good subjects and great kits – highly recommended! Thanks very much to Artur at Fantom Models for this sample; please visit his website at www.fantom-model.pl for more of his excellent kits. **MC**

Product: Card construction kit
Ref: (ISSN 1895-8141 (No.7))
Scale: 1/200
Size: L, 985mm
Price: PL 140 (approx. £28) (Fantom)
Manufacturer: Fantom Models
Website: www.fantom-model.pl

Amati Master Cut

Having the ability to carry out crisp and accurate mitre cuts can be easily achieved with this high quality cutting tool from Amati. Made of sturdy plastic and metal, this tidy tool comprises four main components and only takes a few minutes to assemble. It also comes with five special blades and additional blades (10 per pack) can be purchased from Hobbies for just £4.99 (7386/02). Any angle through 90° can be carried out on either wooden or plastic strip and both a

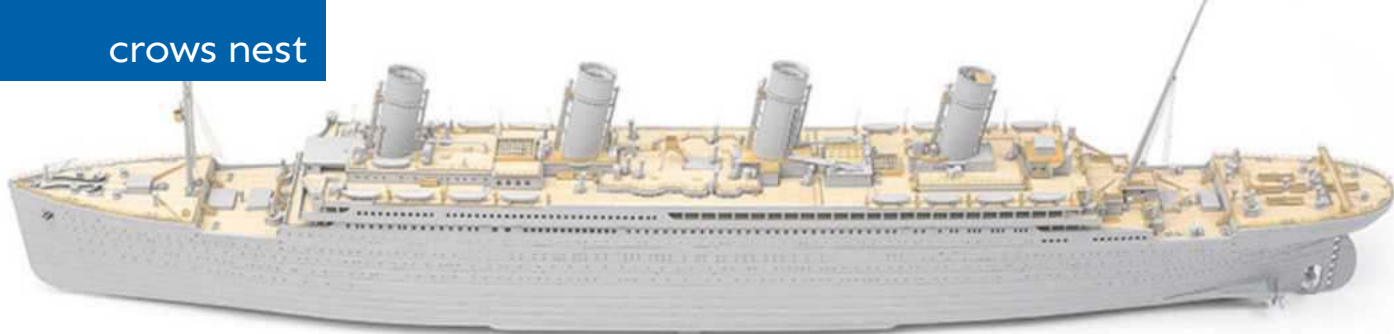


centimetre scale and degree scales are marked on the base of the cutter. This really is ideal

if you need a batch of components which are all cut exactly the same.

Presented in a typically slick Amati box, this is an excellent tool for the model boat builder. Thanks again to Hobbies for supplying Model Boats with this sample; view this and many more modelling items at www.alwayshobbies.com. **Owen Cooper**

Product: Tool
Ref: Art. 7386
Parts: 9 (Inc. 5 Blades)
Size (Base): 156mm x 109mm
Price: £22.99 (Hobbies)
Manufacturer: Amati
Website: <https://store.amatimodel.com>



Academy R.M.S. Titanic Premium Edition

As part of Academy's 50th anniversary celebrations, the company has brought out a number of Premium Edition kits. The Premium Edition part of this rendition of the Titanic in 1/400 scale is that it includes a lot of PE and a comprehensive LED lighting kit just like its smaller version, produced by the same company in 1/700 scale. On top of that, you also get a laser-cut wooden deck, brass masts and metal anchor chain; none of this was available when the kit was first brought out back in 1998. The packaging is pretty slick as well; the main box is contained in a white sleeve with gold lettering and when removed, an image of the model on the water at night, with all LEDs twinkling gives you an idea of how this build will go. This is an MCP (Multi Color Parts) kit as well, so even though a painting reference sheet is provided, you don't really need to paint it especially if you are

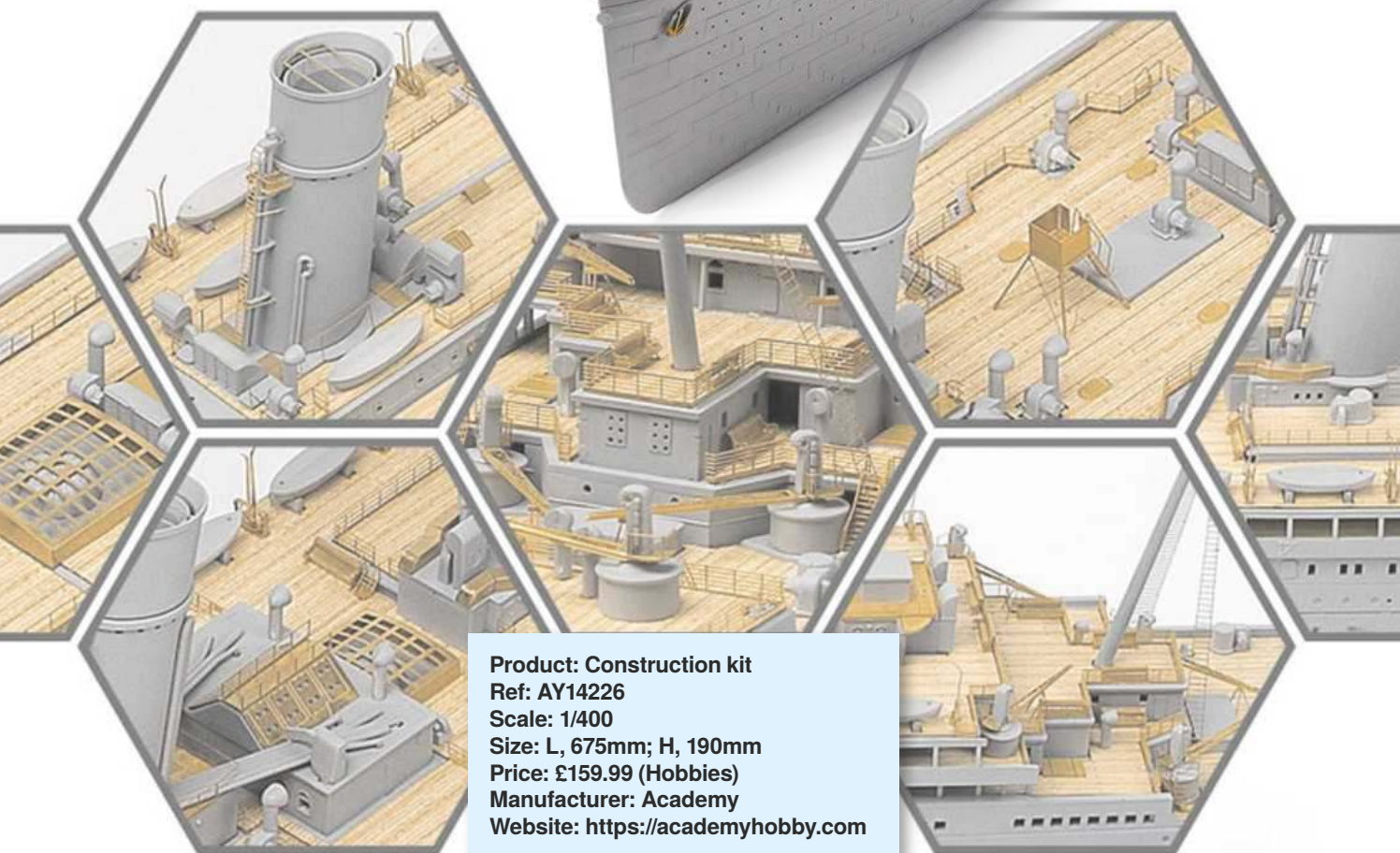
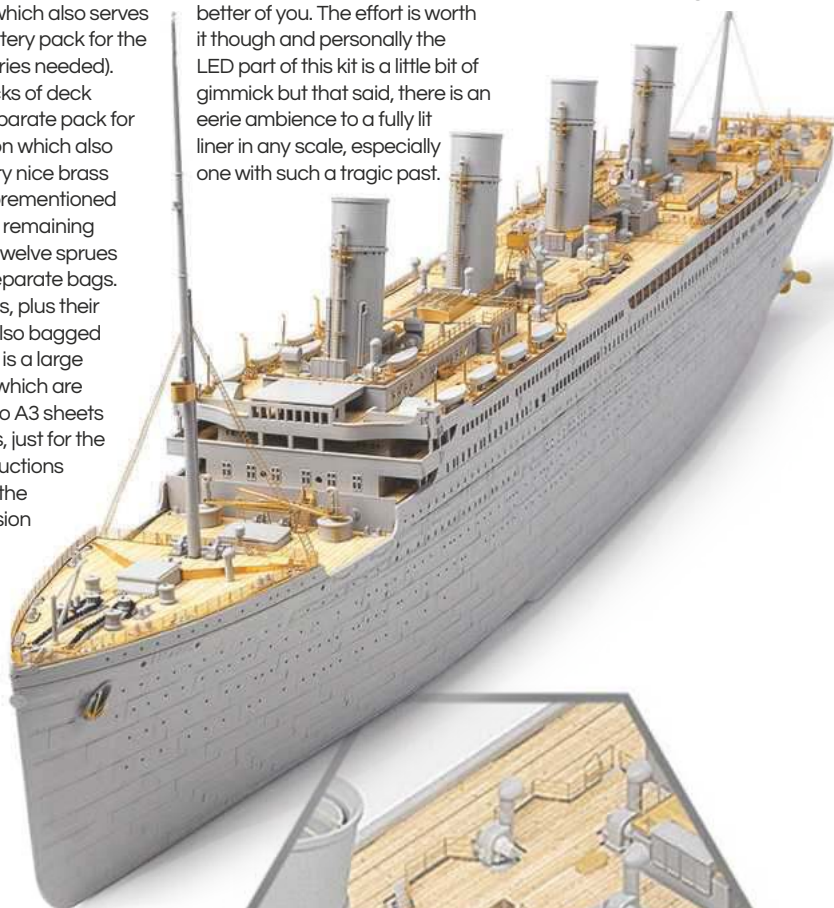
planning on displaying the model in a dark cabinet with its lights on.

Inside the box there is a lot going on; the main hull is provided as one piece; this can be sat on a substantial base which also serves to conceal the battery pack for the LEDs (4x AA batteries needed). There are two packs of deck sections plus a separate pack for the wooden version which also contains some very nice brass masts and the aforementioned anchor chain. The remaining parts are held on twelve sprues all sealed in five separate bags. Long strips of LEDs, plus their connections are also bagged separately and so is a large sheet of PE parts which are supported with two A3 sheets of instructions; yes, just for the PE! The main instructions for the kit look like the original 1990s version but updated with the relevant work needed to install the LEDs, which are not difficult.

Not a difficult build by any stretch of the imagination until you get to the PE part that is, when your patience will be challenged when railing after railing gets the better of you. The effort is worth it though and personally the LED part of this kit is a little bit of gimmick but that said, there is an eerie ambience to a fully lit liner in any scale, especially one with such a tragic past.

Thanks very much to Hobbies for supplying Model Boats with this excellent kit; view this and many more modelling items at www.always hobbies.com.

Graham Vaughan



Product: Construction kit
Ref: AY14226
Scale: 1/400
Size: L, 675mm; H, 190mm
Price: £159.99 (Hobbies)
Manufacturer: Academy
Website: <https://academyhobby.com>

Seaforth – World Naval Review – 2020 edited by Conrad Waters

For over a decade this annual has provide an authoritative summary of all that has happened in the naval world in the previous twelve months, combining regional surveys with one-off major articles on noteworthy new ships and other important developments. Besides the latest warship projects, it looks at wider issues of significance to navies, such as aviation and weaponry, and calls on expertise from around the globe to give a balanced



picture of what's going on and to interpret its importance.

This year, the in-depth Fleet Reviews focus on the reviving fortunes of the navies of Germany, Finland and the UK. Significant Ships covers the US Virginia Class 'post -Cold War' SSNs, the Aegir type fleet support ship design which produced both the British 'Tides' Class fleet tankers and the Norwegian Navy's logistic support ship Maud, as well as

the indigenous Indian Kamorta-Class corvettes. There are also technology chapters by well-known experts like David Hobbs with a review of recent developments in naval aviation, while Richard Scott takes a look at PROSUB, Brazil's massive investment in renewing its underwater capability and Norman Friedman evaluates the technologies driving modern submarine design.

For anyone interested in contemporary naval affairs, whether you're a defence professional, enthusiast or warship modeller this illustrated annual is required reading.

Many thanks to Charlie Simpson at Seaforth Publishing for the review copy of the book which is available at www.seaforthpublishing.com.

John Deamer

ISBN: 978-1-5267-6062-3

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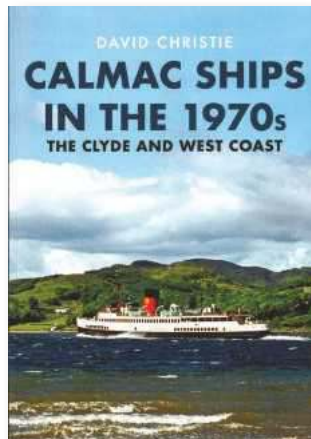
Publisher: Seaforth Publishing Ltd.

Website: www.seaforthpublishing.com

Calmac Ships in the 1970s – The Clyde and West Coast by David Christie

In 1973 David Christie moved with his parents from Romford, Essex to Callander in Scotland, but it wasn't until 1974 that he discovered the joys of sailing on Calmac ships.

An initial sail on MacBraynes turbine steamer, King George V, in her last season, on an evening cruise from Oban, was a great introduction and from then on he was hooked! Over the next three years he focused on another turbine ship, the Clyde's Queen Mary II, which quickly became his favourite ship. In this new, illustrated book, David details



the career histories of over 20 Calmac ships and using over one 140 of his own colour photographs, with captions, takes us along the

Clyde and the West Coast, where he covers most of the Clyde piers with emphasis on Rothesay. Ferries also feature with photographs of both old and new vessels on the Rothesay and Dunoon runs and the smaller boats at Largs. The section on the West Coast features Oban as the main terminal, moving on to Mallaig, before looking at the pre-bridge Skye ferries. A single visit to Ullapool finishes

off this journey. The book concludes with pictures of retired ferries in East India Dock, Greenock in 1975. This really is a nostalgic trip down memory lane for anyone with an interest in Calmac ships back in the far-off glory days of the 1970s

Many thanks to Philip Dean at Amberley Books for the review copy which is available at www.amberley-books.com

John Deamer

ISBN: 978-1-3981-0064-0

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Publisher: Amberley Books

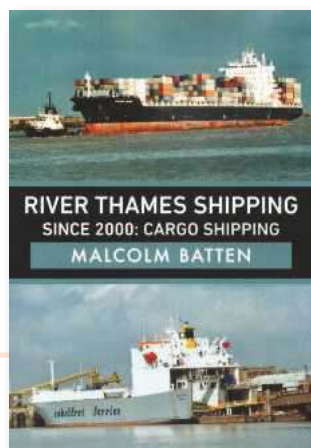
Website: www.amberley-books.com

River Thames Shipping Since 2000: Cargo Shipping by Malcolm Batten

Take a look at the River Thames in East London now and you would think it's commercially dead. Where once the banks of the river were lined with wharves, these have been replaced or converted to luxury apartments. The mighty London Docks, including the 'Royals', once the largest expanse of enclosed dockland in the world, had all closed by 1983 and have since been developed as Dockland; with a financial centre, London City Airport, the University

of East London, houses, shopping and other amenities.

But the commercial life of the river didn't die – it just moved down river. Tilbury Docks were adapted from 1968 to handle the new pattern of container ships



and roll-on roll-off ferries. New terminals were built with easy access to the M25 motorway and the Dartford Tunnel (and later the Queen Elizabeth II Bridge).

In November 2013 the new London Gateway Container Terminal at Thurrock opened, with the capability of handling the largest container ships afloat. Other traffic like oil and sea-dredged aggregates continue to be unloaded at riverside wharves. Upriver, tugs take containerised domestic rubbish from inner London boroughs to landfill sites in Essex or for incineration.

Using over 180 previously unpublished colour photographs,

local author, Malcolm Batten, in the first of his two part series of books on River Thames shipping, takes a look at the varying commercial shipping that has worked on the Thames since 2000.

Many thanks to Philip Dean at Amberley Books for the review copy of the book which is available at www.amberley-books.com.

John Deamer

ISBN: 978-1-4456-9732-1

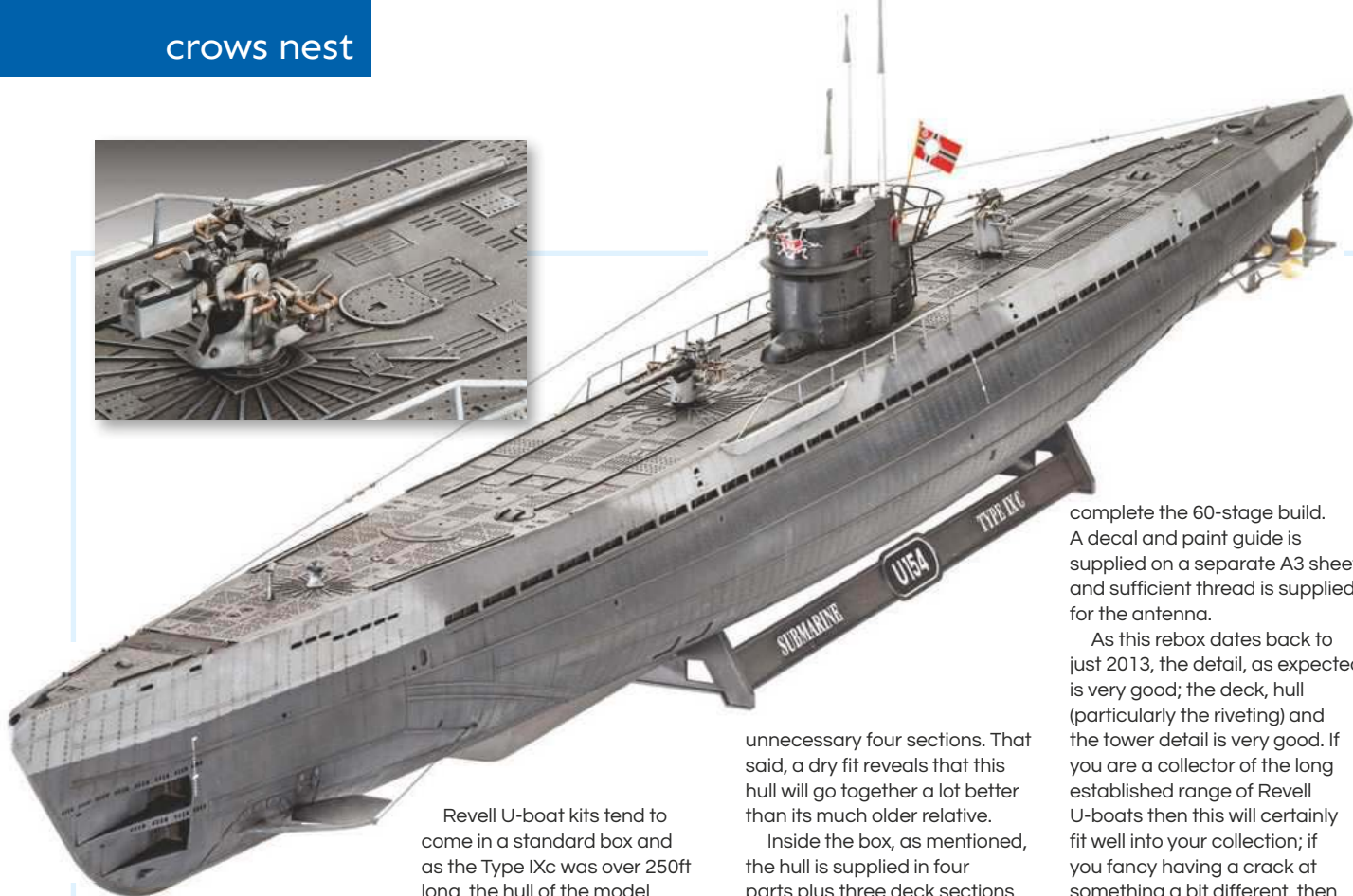
Pages: 96

Price: £14.99 (RRP)

Format: Softback- 235x166mm

Publisher: Amberley Books

Website: www.amberley-books.com



Revell Type IXc German Submarine

Built between 1937 and 1944, 290 Type IX U-boats were planned for the Kriegsmarine but in the end 194 were built, 54 of them the Type IXc, the subject of this latest in a long line of German submarines in 1/72 by Revell. The Type IXc featured increased fuel capacity which raised the surface displacement to 1,120 tons but gave the U-boat a potential range of up to 15,480 miles if operated on the surface. You have the option in this kit to build a pair of early turret tower (or narrow tower) examples, namely U-66 or U-154. Both shared the same fate, U-66 was lost on her six patrol when she was sunk by aircraft from the USS Core on 16 July, 1943 in the Sargasso Sea while U-154 when down on her eight patrol on 3 July, 1944, sunk by US Navy destroyer's USS Inch and Frost off Madeira.

Revell U-boat kits tend to come in a standard box and as the Type IXc was over 250ft long, the hull of the model has the stern removed. Not a major drama in putting it back together, and it may even benefit the R/C conversion people, but it does remind me of the old Flower-class hull in its

unnecessary four sections. That said, a dry fit reveals that this hull will go together a lot better than its much older relative.

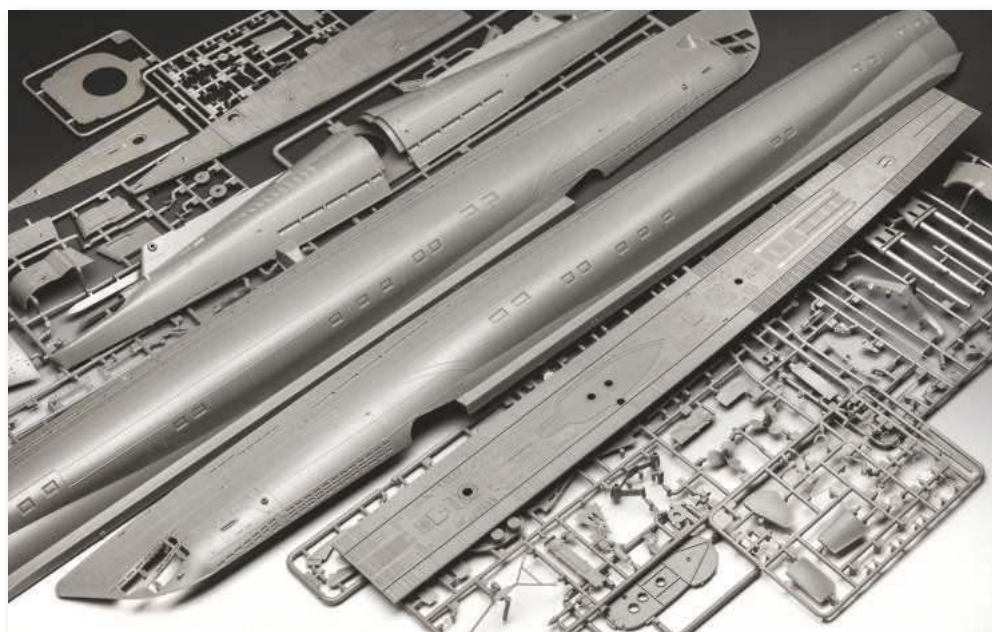
Inside the box, as mentioned, the hull is supplied in four parts plus three deck sections while the remainder of the components are supplied on seven sprues. The standard A4 instructions are supplied, this time with 28 pages, and lots of full colour information to

complete the 60-stage build. A decal and paint guide is supplied on a separate A3 sheet and sufficient thread is supplied for the antenna.

As this rebox dates back to just 2013, the detail, as expected is very good; the deck, hull (particularly the riveting) and the tower detail is very good. If you are a collector of the long established range of Revell U-boats then this will certainly fit well into your collection; if you fancy having a crack at something a bit different, then why not give this one a go.

Revell model kits are available from all good toy and model retailers. For details visit www.revell.de/en.

MC

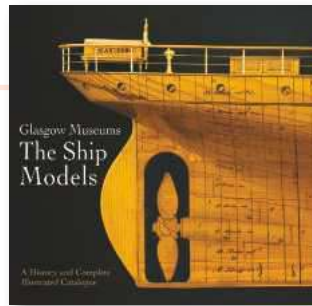


Product: Construction kit
Ref: 05166
Scale: 1/72
Size: L, 1063mm; W, 95mm; H, 225mm
Parts: 170
Price: RRP €99.99 (approx. £85.00)
Manufacturer: Revell
Website: www.revell.de

Glasgow Museums: The Ship Models – A History and Complete Illustrated Catalogue by Emily Malcolm

The Ship models are one of Glasgow Museums most established and best loved collections. Over 600 models ranging from half-hulls and simple shaped designs to display models of astonishing complexity make up the collection, and almost every type of vessel, from elegant liners to unadorned dredgers are represented.

Clyde-built ships were one of Scotland's most significant contributions to the industrial



age and almost all the models represent ships built on the River Clyde from the late 18th Century to the early 21st Century. The collection as a whole is an internationally important resource for the study of ship-building as well being a source of inspiration and delight for generations of museum visitors and model makers.

This beautifully presented book is divided into two halves; the first

half tells the story of both amateur and professional model making and how models became an integral part of the shipbuilding design process. There are further chapters on ship model exhibitions and how Glasgow Museum built their collection of model ships. The second half of the book is the Catalogue of Ship Models which details the Museum's full collection of 676 models and model groups. Each entry is accompanied by a

superb colour photograph.

With over 800 illustrations this outstanding book fully interprets the entire collection for the first time, the result of over a decade of new research, photography and conservation work.

Many thanks to Charlie Simpson at Seaforth Publishing for the review copy of the book which is available at www.seaforthpublishing.com.

John Deamer

ISBN: 978-1-5267-5752-4

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Price: £35.00 (RRP)

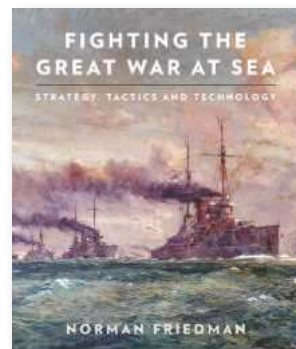
Format: Hardback - 280x295mm* (weights 2.7kg!)

Publisher: Seaforth Publishing Ltd.

Website: www.seaforthpublishing.com

Fighting the Great War at Sea – Strategy, Tactics and Technology by Norman Friedman

This profound and brilliant account of the war at sea during the First World War concentrates on the way in which each side tried to use or deny the sea to the other, and in doing so it describes the rapid wartime changes not only in ship and weapon technology but also in the way naval warfare was envisaged and fought. The years of combat produced many surprises: some like the impact of the mine and torpedo, are familiar, but this book also brings to light



many previously unexplored subjects such as creative new tactical practices and improved command and control.

The gap between expectation and reality for combatants had

enormous consequences not only for the course of the war but also for the way navies developed afterwards.

The author, one of the world's best-known naval analysts and historians, Norman Friedman, uses over three hundred black and white photographs, diagrams and maps, melds strategic, technical and tactical aspects to tell the story of the First World War at sea from a fresh perspective, but also demonstrates how its perceived lessons dominated the way navies prepared for the Second.

This new softback edition of the book, which was first

published in 2014 and went on to win the 2015 John Lyman Book Award in the Naval and Maritime Science and Technology category.

Many thanks to Charlie Simpson at Seaforth Publishing for the review copy of the book which is available at www.seaforthpublishing.com.

John Deamer

ISBN: 978-1-5267-6549-9

Pages: 416

Price: £25.00 (RRP)

Format: Softback - 290x248mm

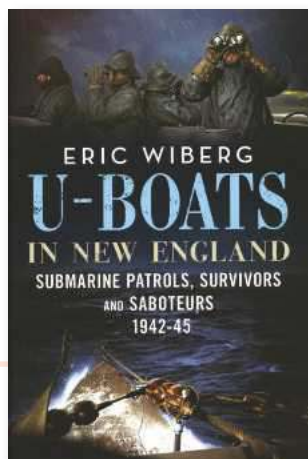
Publisher: Seaforth Publishing Ltd.

Website: www.seaforthpublishing.com

U-Boats in New England by Eric Wiberg

Subtitled, 'Submarine Patrols, Survivors and Saboteurs, 1942-45' this new book by marine lawyer, Captain Eric Wiberg is a lot, lot more than the usual facts and figures U-boat book. Almost immediately after the USA entered the Second World War, German U-boats began patrolling along America's and Canada's Eastern coasts. This book takes a look at operations in New England waters, covering from Montauk, New York through to Nova Scotia at Cape Sable. 73 U-boats carried out attacks between mid-December 1941 and 1945. 15% of these U-boats were sunk during Allied counterattacks,

five surrendered and a further three sank off New England, close to Block Island, Massachusetts Bay and off Nantucket. 34 Allied ships were sunk, including the Eagle with the loss of 428 men, a loss so sensitive at the time, official channels did not admit the loss until the 1980s.



The book comprises 20 straight-forward titled chapters, for example; 'Five U-Boats Attack the Norland, the Polyphemus, the Berganger and the Cayrú' and 'Three Boats and the Diminutive Fishing Schooner Lark' which leaves you in no doubt as to exactly what each chapter is all about. On top of that, from Page 326 onwards there are sections for a Conclusion and Postscript and for the number crunchers, extensive appendices (I-V) covering patrols and fates, victims, ports where survivors landed, burial locations and the fates of ten U-boats lost during and after the war. There is also a packed Endnotes section (37 pages) listed every source, chapter by chapter; a truly exceptional level of research.

With regard to photographs, the majority are unpublished and are littered throughout the book on standard paper while a central 'A' section on good quality gloss paper is filled with further, excellent photographs. Clear maps and well laid out tables add to this high quality book which presents a new aspect of U-Boat operations during the Second World War.

Many thanks to Jay at Fonthill Media for this review copy which is available at www.fonthill.media.

David H smith

ISBN: 978-1781557204

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Format: Hardback - 234x156mm

Publisher: Fonthill Media.

Website: www.fonthill.media

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● HMS Victory

Aspects of researching a 1/64 scale kit for the retail market

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Don't forget! The February issue of Model Boats will be published on 17th January 2020 price £5.40 – don't miss it! Order your copy now! Or better still why not make it your first copy in a year's subscription to magazine?

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UNBUILT BILLINGS kits NR564 Cutty Sark £125; NR572 Etoile £85; NR802 La Curieuse £75. All kits c/w fittings. Deans Marine SS Redshanks, £45. Type 23 photos – full set, £20. Buyer collects or pays carriage. Call Geoff on 01242 675266 (Gloucestershire)

MARTIN HOWES & BAYLIS

Edwardian steam launch Topaz, complete with Anton steam engine & boiler set, as new with R/C, offers invited & further info call Len on 01245 290879 (Essex)

KYOSHO SEAWIND R/C Yacht with sails, mast & boom; P. J. Sails, VGC, £210. Sails etc., boom, main & jib with all fittings, as new & main 15 1/4 in, jib 13 1/8 in, hardly used – Post Free, £20. Call 07484 104451 (Lancs)

STEAM SMOKE simulator, water is the fuel, not oil. 24v DC & 6v DC, 100mm, 75mm, 226mm to top of stack. Runs for 25mins on one fill, new, £25 + £3 postage. For further details, contact D Coe on 01206 523232 (Essex)

YAMATO BATTLESHIP 1/200 static model built, poss conversion to R/C, £250, buyer collects. Call Bill on 0191 514713 (Tyne & Wear)

FUTABA ATTACK T2ER AM 40mhz, 2-channel digital proportional R/C system. Transmitter & R122JE receiver complete with set of crystals & instruction book, first class condition, £20 plus postage. Call Mike on 01603 759256 (Norfolk)

MODEL SLIPWAY 4-hatch coaster complete with motor, no R/C, £225, buyer collects. Call Derek on 01905 423290 (Worcs)

BOX OF 20 assorted model boat motors, some new to include Microfile (Radar) and new MFA geared 2.5 to 1. Age and no water forces sale, buyer to collect. £20. Call John after 1800hrs on 01225 315453 (Somerset)

MSM 'CLYDE' twin-cylinder vertical oscillating steam engine, good condition, £200 inc. postage. Call Alan on 01371 875718 (Essex)

BISMARCK 1/100, x2 plank on frame construction, x3 electric motors. Represented England in European Championships. Suitable for R/C, ESCs included. Call Terry on 01707 329402 (Herts)

TWO KMB28 jet drives to suit Shannon life boat, brand new, £80. Call Brian on 01777 704577 (Notts)

BILLINGS COLIN ARCHER 414 RS No.1 fibreglass hull, approx 1270mm long, about 50% complete. Major amount of deck work complete, genuine reason for sale, £300. Also a few other completed vessels, phone Terry on 01217092279 for further details (Solihull)

SOUTHAMPTON TUG RTR with smoke generator stand, twin prop, 22in long, 7in wide with controls, £950. Call Michael on 07810 596914 (Lincs)

CALDERCRAFT Nelsons Navy static model of HMS Agamemnon, all complete, boxed ready to build. Cost £790, accept £475. For more details, call 01455 632414 or 07879047181 (Leics)

BILLINGS 'African Queen' pond ready c/w 30mhz radio fitted. Only needs Bogart and Hepburn! E-mail profjohnwright@hotmail.com for pictures, £95. Call 07852 737978 (East Sussex)

36in SUN TUG XXI fibreglass hull, scratch-built, wooden, super two channel radio, Speedo 720 Tornado electric motor in carrying boxes, needs to be seen, £400.00, call 01359 232964 or 0771628762 (Suffolk)

BISMARCK Hachette kit, 1/200, part complete. Bismarck scratch built, 1/100, part complete, materials include brass timber, paints, special table for models. Offers invited, buyer collects, contact David for complete details on 07563499535 (Devon)

KYOSHU SEAWIND Booms/mast, sails etc. New P J Sails last year, VGC, excellent performance, £225, buyer collects. Lead bulb with alloy fin, 5lbs 2oz by P J Sails, £25. Call 07484104451 (Lancs)

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PAIRS OF CRYSTALS 27 Band & 40 Band & probably a pair of radios & receivers, 27 or 40 Band. A pensioner, beginner, changing from aircraft – Call 017683 61677

MAST SAIL and boom for a Rojair Mickey Finn yacht or details of same with all measurements. Call Peter on 01904 488597 (Yorkshire)

PLANS DRAWINGS of Queensferry Ferries, will pay cost, call Mick on 02380 420487 (Hants)

STUART TURNER Triple Model Marine Engine. Call 01704 880944

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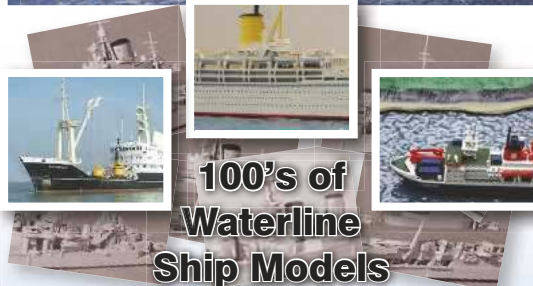
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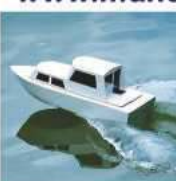
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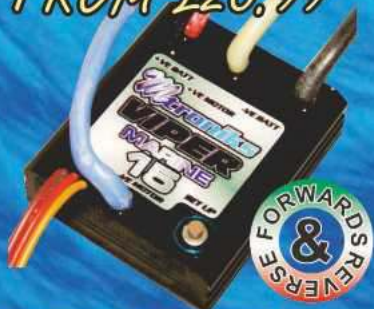
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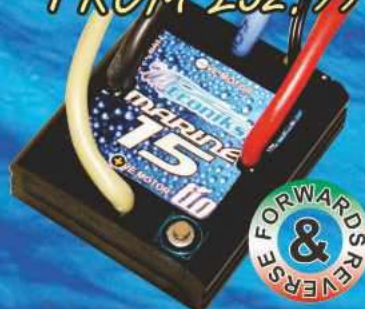


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