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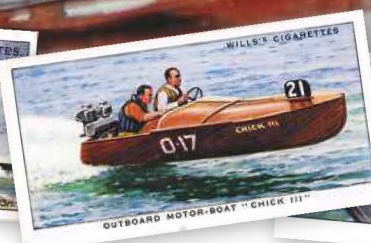
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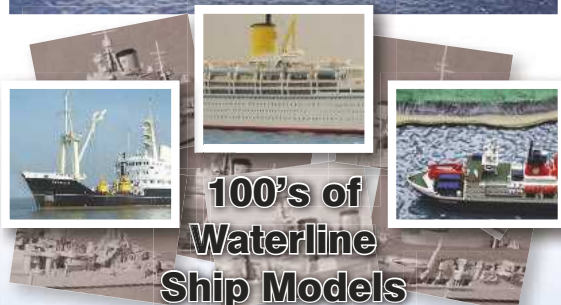


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James Pottinger presents a new plan for these classic steel-hulled trawlers



KIT REVIEW!



40 SEQUIN

Bob Eastwood builds the Midwest Models kit

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Ron Rees completes this inexpensive and easy to build model tug

PART 2



Bow piece



This issue includes a Full-Size Complimentary Free Plan designed by James Pottinger, worth £12.50, for the classic 1950's Sputnik type of trawler, featured on Pages 34 to 37 of this issue. We also have on Pages 10 to 16 a fantastic model by the versatile model maker Ashley Needham for a 1932 Pontoon-Hydroplane Speedboat which performs really well. Ashley is well-known to those readers who frequent the Model Boats Website Forum, particularly for his regular updates and positive comments on the Thread 'Today's Boating'.

Bob Eastwood, one of our Canadian readers, has built the Midwest Models Sequin tug, and an excellent job he has made of it, this being featured on Pages 40 to 45. For the centre pages Gallery we welcome back Fraser Gray, who presents the slightly unusual and lovingly preserved LV21, which is a decommissioned Light Vessel that had a lengthy, and sometimes dangerous, service off the coast of Kent until being retired in 2008.

Starting in this issue is a new mini-series on the trials and tribulations of building 1:700 scale Naval Dioramas written by Chris Drage, and regular readers will remember his superb HMS Poppy in the 2016 Model Boats Winter Special. On the subject of 'remembering', John Parker in his regular Flotsam and Jetsam column takes us back to cigarette cards, these still being collected by many enthusiasts. We also have all the other usual regular columns, and I hope there is something here for all our readers.

Paul Freshney - Editor

Compass 360

Model Boats notice board for your news

Editorial Contact - Paul Freshney

You can reach the Editor, Paul Freshney, on 01277 849927. The editorial postal address is: Model Boats, PO Box 9890, Brentwood, CM14 9EF.

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Price rise for Model Boats magazine

The UK cover price has risen to £5.15 with this issue. This was a Board decision and indeed many magazines across the whole spectrum of newstrade have had increases in the last six months or so. On the plus side, subscribers still receive 13 issues per annum including the 100 pages Winter Special and six Free Plans every twelve months, so we remain excellent value and in terms of annual cost per page for UK subscribers, Model Boats is still less than for other magazines in this hobby segment.

Paul Freshney - Editor

Free Advertisements

Just a reminder that it is one Free Advertisement per reader in each issue and 36 words maximum. Multiple advertisements received together are spread over succeeding issues as space allows or are combined where practical.

Paul Freshney - Editor

Bournville Radio Sailing & Model Boat Club

This club has a number of events planned for 2017. The earlier ones are:

Sunday 14th May: Submarine Dive-in. Open day for all r/c submarine enthusiasts.

Sunday 4th June: Work Boat day. Open to all with models of work boats, tugs, fishing boats, tankers, ferries etc.

Sunday 25th June: Military Boat Day. Open to all with models that have a military connection, from battleships to water carriers. If it's been used by the military, then it's welcome.

Venue is Bournville Lake, The Boat House, Bournville Lane, Bournville, Birmingham, B30 1QS. Refreshments will be available at all events, toilets, disabled access and parking. For more information, please contact Robert Fowler: Tel: 07714 517445 Email: rob4boats@yahoo.co.uk Website: www.bournvilleyachtandpowerboat.org

Balne Moor MBC

On Sunday 9th April, this club is holding a tug towing and scale sailing event. Teams of two tugs will tow vessels through a set course. £1 per tug, or sail your own boat through

a steering course, £1.50 per boat. 1030hrs start, bacon or sausage butties are available until 1230hrs, hot and cold drinks all day and homemade cakes. Satnav location is DN14 0ER. More information from: <http://balne-moor-model-boat-club.myfreesites.net/scale-and-tug-events> or email: mikebutler1949@gmail.com

Telford MBC

This club is organising a Model Boat Show within the Ragley Hall Festival of Flight Show on the **18th, 19th & 20th August 2017** at Ragley Hall, Alcester, Warwickshire, B49 5NJ.

This event is growing in interest and the club would like it to give the hobby a boost by promoting it where they can. The water can be used for all aspects of the hobby and depending on the turnout of models, there will be allocated time slots for each category. They will also be having static displays and would like to invite MB readers to bring their models for display and demonstration.

Further information from Giles Ponting, email: giles.tmbc@gmail.com

Surface Warship Association

This national group of model warship enthusiasts has already listed some events for 2017 where they will have a presence and these include:

1/2 April 2017: Coalville Model Boat Show.

13/14 May 2017: Abingdon Air Show.

10/11 June 2017: CADMA Show (Doncaster).

2 July 2017: Navy Day at Knightcote MBC (Warwickshire).

21/23 July 2017: Netley Marsh Steam Rally and Craft Fair.

August 2017 (Date TBC): Portsmouth Historic Dockyard Model Boat Weekend.

September 2017 (Date TBC): Mill Rythe Holiday Village Military Heroes Weekend.

The Surface Warship Association (like most clubs) is looking for new members.

Further information from:

Website: www.surface-warships.org.uk

Membership Secretary: Hilary Breeze, tel: 01622 710528 (or via the website).

Fishers Green Sailing Club - Model Boating Section

On **Sunday 21st May 2017**, this club is having an Open Day at their facility in the Lee Valley Regional Park, Nr. Waltham Abbey

(just outside the M25), OS Map Reference: 538250, 204250, Post Code: EN9 2EG. Gates open at 0915 hours and the format is free sailing for scale, yachts, submarines and fast electric, but sorry no i.c boats. The pond is not wadeable, but there is a rescue boat and a hard edge for launching models. Some tables for the model boats are also at the pondside. The clubhouse will be open with its full range of facilities and there should be a BBQ at the pondside. All are welcome. Further information from Ivor Warne, tel: 01920 484315, or via the club website: www.fishersgreensc.org.uk

GAMES Series for r/c Marblehead yachts

This is a race series in Southern England giving club sailors great open racing opportunities for these r/c racing yachts. The remaining seven 2017 events are:

26 March GAMES 3:

M&S Marblehead Ranking, Woking

4 June GAMES 4:

M&S District Championship, Guildford

23 July GAMES 5:

M&S District Interclub/Open 3, Guildford

24 September GAMES 6:

M&S District Interclub/Open 4, Datchet

12 November GAMES 7:

Mermaid Trophy, Guildford

19 November GAMES 8:

Stan Cleal Trophy, Three Rivers

10 December GAMES 9:

Brass Monkey, Guildford

Further information from:

www.marbleheadsailing.wordpress.com

Information supplied by **Roger Stollery**

Beale Park Spring Bank Holiday Model Boat Show

Kent Model Boat Display Team are sorry to announce that owing to unforeseen circumstances, they are not able to host the Beale Park Model Boat Show on **29/30 April 2017**. However, the resident club at Beale Park, Mid-Thames MBC, will be holding an Open Day on **Sunday 30th April** themselves. This is open to all model boat clubs and enthusiasts and will be a great day out, with a variety of models on display and on the water.

Information supplied by **Barry Chapman**

Furness Model Boat Club

Formed in 1996, this club looks after the interests of all model boating enthusiasts, sail or powered, in the Barrow and Furness Peninsular area. The exact location and details of the club are on their website and they sail for two or three days a week, the IOM yachts having exclusive use of the Barrow Park lake on Tuesday afternoons.

There are five open regattas planned for 2017, all starting at 1000hrs:

9th April, 21st May, 25th June, 23rd July and 3rd September 2017, the last having a submarine theme, although all models are welcome. Third Party insurance is essential for visitors please. Website: www.furnessmodelboatclub.co.uk
Information supplied by **Adrian Stanton**

2017 MYA International One Metre National Championship

This is being held at Datchet Water Sailing Club and will be hosted by the Radio Sailing Section of this club over the **26th to 28th August 2017** Bank Holiday weekend. Further information from: Darin Ballington, MYA Race Officer, Tel: 07768 761363.

Stevenage MBC

This club, Post Code SG2 0BL, are holding an Open Day on **Sunday 28th May 2017** for all the family to come and see what they are about and on **Sunday 11th June 2017** they are having a Model Lifeboat Day with all monies raised going to the RNLI and there will be a souvenir

stall from Biggleswade RNLI Branch on site. There will be some 'have a go' boats for the young, and not so young at both events and all clubs and their members are welcome. More information from **Jeffrey Holmes**, email: happy.holmes@ntlworld.com
Or email : stevenagembc@gmail.com

Kirklees Model Boat Club

Their annual Steam Day will be held on **Sunday 23rd April 2017** at Wilton Park, Bradford Road, Birstall, Batley WF17 8JH, from 0930hrs to 1600hrs. There will be free car parking and refreshments available. All steam plants will require up to date paperwork. Please contact Stan Reffin for more information, tel: 01132 675790, or via the club website: www.kirkleesmodelboatclub.weebly.com

Phil Warren's Matchstick Fleet

This will be at the Blandford Forum Corn Exchange, Dorset, from **Friday 19th to Monday 22nd May 2017** inclusive. This free exhibition will be open between 1200hrs and 1600hrs pm on the Friday, 1000hrs to 1600hrs on the Saturday and Sunday, 1000hrs to 1300hrs on the Monday.

Blandford Forum Town Council's 14 to 18 Working Group is hosting the exhibition and in addition the Blandford Model Railway Club will have their Somme diorama to view. Refreshments will be available from the WWI Group's Khaki Canteen.

Information supplied by **Bridget Spiers**
Grimsby and Cleethorpes Model Boat Club

Grimsby and Cleethorpes MBC

This club will be holding an Open Day on **Sunday 28th May 2017** at Sidney Park Cleethorpes, from 10.00hrs to 16.00hrs. There will be electric, steam and sail, although due to local authority rules, i.e. engines and fast electrics are not allowed. There is free parking next to the lake and disabled facilities are also available at the clubhouse. For further information, please contact Mike Charlton, tel 01472 318664 or via the club website: www.gcmbc.co.uk

Swindon Model Boat & Engineering Club

This club has a new website address: www.smbec.co.uk.
Information supplied by **Colin Maxfield**

2017 International Model Boat Show

This will be from **Friday 10th to Sunday 12th November** inclusive at the Warwickshire Exhibition Centre as usual. 2017 will also see the development of the show with the introduction of a Tamiya Truckin' display arena over 80 metres square with radio controlled models on a roadway system. Further information will be published in due course, but please check the website for updates: www.modelboatshow.co.uk

Footy Racing



Roger Stollery relates the fun that can be easily had by youngsters with these small r/c yachts

A Footy yacht has to fit into a box 1ft x 1ft x 6ins. In 2016, with Peter Stollery (Roger's son) enthusiasts having two young lads, we thought we would see if it was possible to get model yachts for them on the water cheaply,

and perhaps more importantly, quickly. The solution was quite easy as the captioned photos show, the lesson being to never throw away an old hull and its r/c equipment.



Left: Really old and heavy r/c technology had to be restored in this 1979 boat that currently rates as a Footy Class r/c yacht, but this wasn't actually a recognised racing class until 2005. Note the old Futaba sail winch, modern Orange 24GHz receiver and rudder servo.



Above: Both Oliver and Nathan (Roger Stollery's grandsons) are at it in this picture with dad (Peter) advising.....

Left: What Oliver and Nathan seem to like best is to play 'tag', hitting another boat's transom and it is amazing how much they learn about r/c boat control by doing that. Sadly, but inevitably though, it is no good telling them what to do, as that just doesn't seem to work!

Model Boats
May 2017
issue is on
sale on the
13th April
2016

PLASTIC MAGIC

Two KGV Class battleships!



Next month in **model Boats**

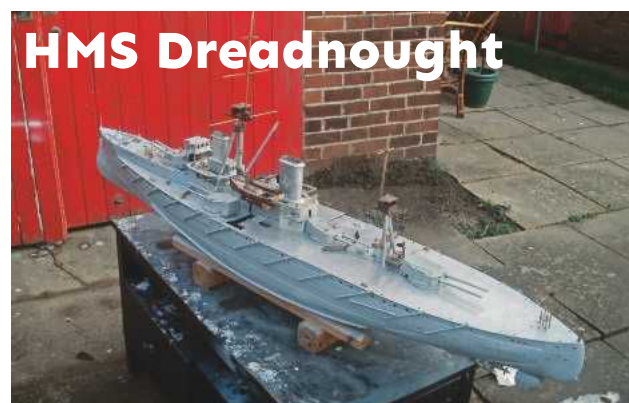
This May 2017 issue will include another amazing article by Tony Dalton, this time for his Plastic Magic radio controlled conversions of two Tamiya 1:350 scale battleships and Dr. Marcus Rooks returns with Part Four of his magnificent ongoing all-metal HMS Dreadnought project.

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

We have a great range of subscription packages that you can choose from, including **our new Print + Digital package** which give subscribers 13 issues a year with 6 free plans, 13 digital editions to download and keep PLUS access to an Online Archive dating all the way back to January 2007.

Don't forget! The May 2017 issue will be published on

HMS Dreadnought



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PS Waverley is the last seagoing passenger-carrying paddle steamer in the world. Built in 1946, she sailed from Craigendoran on the Firth of Clyde to Arrochar on Loch Long until 1973.

Bought by the Paddle Steamer Preservation Society (PSPS), she has been restored to her 1947 appearance and now operates passenger excursions around the British coast.

This limited edition model has been meticulously handcrafted to be faithful to the original PS Waverley.

Dimensions: Ship - 75cm • Cabinet - 80cm

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1932 Pontoon Hydroplane



**Ashley
Needham**
uses an
idea from
Mechanix
Magazine

It really never ceases to amaze me how these projects come along. One evening whilst having a quick surf on the internet, as you do for some information about another project, I found this amazing craft on a website devoted to Mechanix Magazine, **Photo 1.**

Founded in 1928, Mechanix Magazine was an American magazine published to rival Popular Mechanics and other similar journals, and they all regularly ran items about futuristic craft or inventions of one sort or

another. Naturally they put the weirdest and wackiest ideas on the front cover in order to catch the public eye and in this instance the pontoon boat was headlined in 1932. Inventions like this 'did the rounds' in all the mechanical and scientific magazines of the period and indeed the craft appears in more than just Mechanix Magazine.

The inventor, a Thomas A. E. Lake filed a U.S patent (No. US1846602) for us to look at and incredibly there exists a stretched and grainy video news-clip of the boat on another website. To précis the original magazine write-up, the boat was a three point hydroplane design that would be capable of 150mph in complete safety and comfort when a suitable engine was installed. To achieve this, the front pontoons were spread wide and suspended to make the ride smooth. In addition, they tilted to enable the pontoons to present the best angle to the water when turning to aid stability at speed. Further to this, the craft

was steered by a rear pontoon, and the whole thing propelled by a tractor propeller situated in the centre of the boat. In the full-size prototype this was an outboard motor of 35 horsepower, so quite possibly not capable of the anticipated full 150mph.....

Essential features

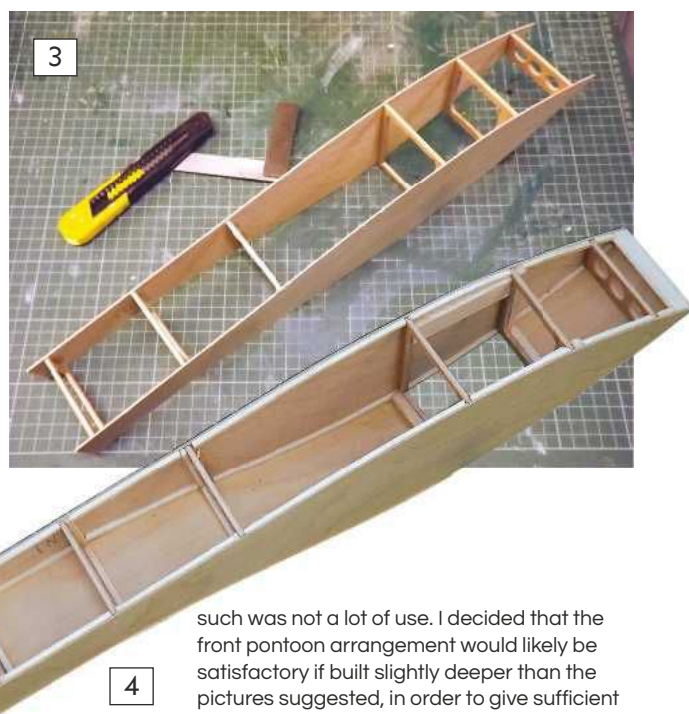
There are three key features to build into a model of this unusual craft.

First: It has to have the tilting pontoons.

Second: It needs the steering pontoon at the rear.

Third: The centre tractor drive unit should be replicated.

Dealing with the first feature, the mechanics of this appear to be straightforward, and the rod to operate the tilting mechanism can be seen in the picture from Mechanix Magazine. Having a rod going through the boat and



Speedboat

being operated by a servo in the main hull seems to be a straightforward proposition, but we will not be emulating the suspension system here.

Second, we need to consider the rear steerable pontoon. It is not a problem to make this, but I cannot see that a simple curved float will provide the necessary grip on the water to effect good steering. There are no clues in the pictures, but the video clip certainly shows the boat turning well enough.

Third, the original drive is by a so-called 'tractor-type' of propeller. I am assuming the writer simply meant that the drive unit at the front is PULLING the boat and not PUSHING it along as a rear mounted propeller would do. In other words, a drive unit at the front of the boat instead of at the rear. One issue I can see in the design is that there is likely to be a significant gap between the hull and water, and an outboard motor if used will have to have a very long vertical shaft to span this to

have its propeller properly under the surface. In practice, this would mean well below the bottom of the floats as the magazine claimed that 'The craft will fly along in only one inch (25mm) of water'. No commercial outboard has a vertical shaft of such decent length, but I have, as you may have surmised, developed a cunning plan.

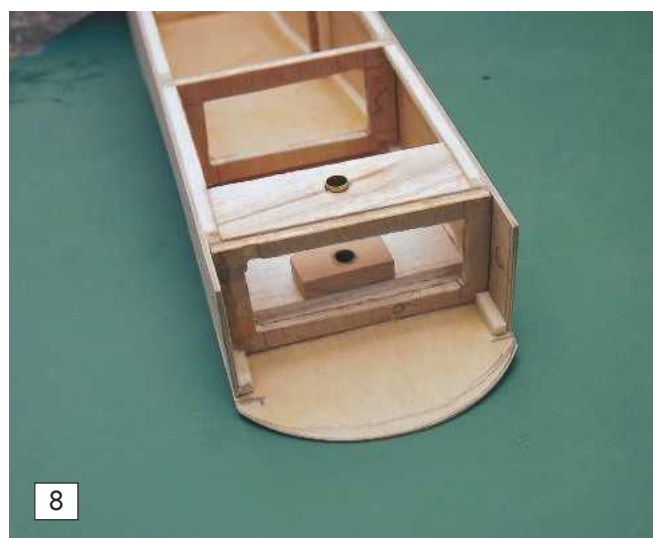
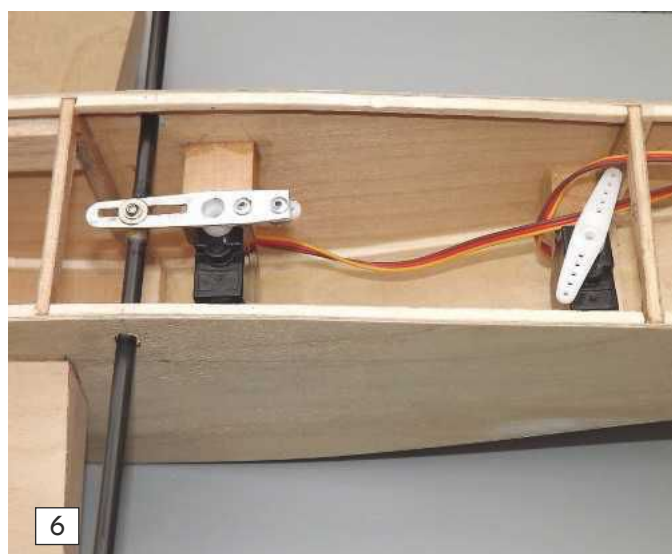
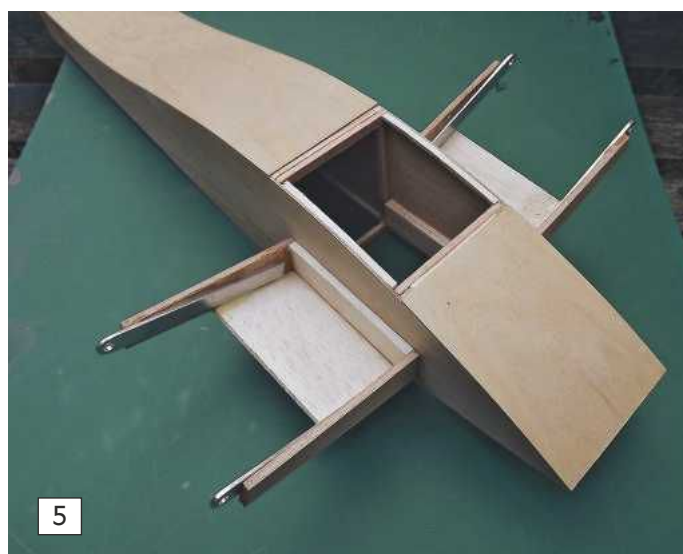
Drawing the dream

There was only the one picture to go by and some distorted video, so a fair bit of estimating went on to arrive at the final dimensions and I have used the usual artistic licence and a full-size corrugated card mock-up to arrive at a good overall shape and the dimensions for a working drawing. Unfortunately, when studied, the patent appertains only to a theoretical craft and not the one actually built, and shows several driveline arrangements and as

such was not a lot of use. I decided that the front pontoon arrangement would likely be satisfactory if built slightly deeper than the pictures suggested, in order to give sufficient buoyancy, but the rear pontoon would need significant alterations with regards to floatation, behaviour at speed and giving sufficient manoeuvrability.

Building the dream

Armed with a basic sketch and the card model, construction started using 1.5mm plywood for the sides and 4mm for the bulkheads, **Photo 2**, which had their centres cut out with no finesse as they are actually eventually hidden from sight. **Photo 3** is of the basic hull unit framework and using a set square is essential. Reinforcing balsawood strips were added along the inner edges and the bottom was partially plated with 0.8mm plywood to stiffen everything up whilst allowing access to the interior when still at this building stage. Reinforcing and stiffening was added behind the forward wing location and at the rear where the pontoon bears against the hull bottom skin, **Photo 4**. The Wings (pontoon supports) consist of two



internal 4mm plywood spars fore and aft, to which 10 x 2mm aluminium strip for the float pivots have been shaped, drilled and epoxy glued, and then covered in 0.8mm plywood, balsawood being used to obtain the curved front and rear faces. **Photo 5** is an upside-down view of work so far on the main hull section.

A 4mm anodised aluminium rod from a well-known out-of-town retail park DIY supplier serves as the pivot pin and nickel plated grub-screwed collars keep all this in place. 4.5mm holes were drilled in the pivots to give a small amount of running clearance, **Photo 6**. Please note that the servo positions were later slightly altered in the light of practical experience.

Simple box structures form the front pontoons using plywood and internal Styrofoam blocks to provide both rigidity and a means of holding the aluminium support struts, **Photo 7**. A 10mm hole was drilled halfway through the Styrofoam and the aluminium pivot strips were set in these holes with epoxy glue. Behind the second pivot, a 5mm brass tube has been set vertically and

this is the upright arm that will be moved to tilt the floats. A lucky find was some small aircraft aileron plastic hinges to connect these posts to the 5mm brass cross-tube, all very neat and they were just glued in place.

I have made an extended slotted aluminium arm for the pontoon servo (please see Photo 6 again) and this bears on a removable pin on the rod to move it side to side. However, for maintenance reasons, the pins for the side hinges have been pushed out to be replaced with copper wire to allow the floats to be separated during construction. Despite the voluminous looking hull there is insufficient clearance to slide a 6 cell 7.2v NiMH flat pack directly into the boat and the tilt servo has to be removed first, which is an easy job, just two screws holding it in place. At the rear of the cockpit, a second servo was installed for the rudder pontoon and both servos are operated via a Y-lead so as to act together. **Photo 8** is of the stern of the main hull unit, and the vertical bearings for the rear steerable pontoon. Once all the gear was in place, the top was plated with 0.8mm plywood, and the hatch covers fashioned, the front engine

cover incorporating a vent at the rear to provide air flow.

Tractor propulsion system

There is, or should be if the boat is planing properly, a gap of 60mm between the main hull unit's underside and the bottom of the side pontoons and as mentioned there was no commercial outboard deep enough to suit, but **Photo 9** is of the components of the solution to this problem. Taking inspiration from a picture of an old vintage outboard motor, the outboard leg was fabricated from 4mm steel strip and rod to hold two 16 tooth brass Meccano bevel gears running in plastic sleeve bearings, **Photo 10**. At the top, a decidedly modern brushless outrunner motor sits on a solid coupling directly connected to the vertical drive shaft. I must confess to having had absolutely no idea as to the ideal specification of motor required, but chose a 35mm diameter brushless outrunner. This is a common size and if a faster/slower or more powerful motor was required, there should be something available that would fit straight on



the mounting, or at least that was the theory. The chosen motor was of 1300kv (revolutions-per-volt) which in conjunction with a standard 7.2v NiMH battery might, or might not, give something in excess of 7000rpm at the propeller.

A relatively modest kv specification was chosen on the basis that the lower kv motors have more torque and thus drive a larger propeller with better efficiency, but mainly I was worried that the Meccano bevel gears might not cope with high rpm despite being water cooled and water lubricated.

Location of the drive in relation to the hull appeared to be self-evident, it being positioned under the hatch in front of the driver, but there was only one place for the battery to go, just behind the motor, and this looked uncomfortably too far to the rear, but time would tell.

Last but not least

For the rear end, a pontoon was made in a similar fashion to the front pair, other than a solid brass 5mm rod was set into it to act as



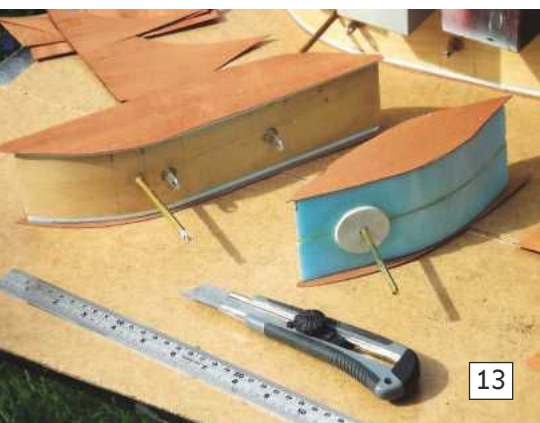
a tiller shaft. This pontoon was set at a jaunty 'best-guess' angle as there is not much to go on as regards how the pontoon should be set.

Inside the main hull, a nylon clamp-on type tiller was fitted and a simple bent wire pushrod links this to the rear servo, crossed from right to left in order to get the pontoon to tilt the correct way in relation to the front pontoons, and lastly the deflector under the main hull, to stop the propwash flooding the rear pontoon, was added before taking the boat out for test. Access to the nylon tiller is via a removable plug, made from Styrofoam which is a good interference fit. Short lengths of brass tube set top and bottom of this rear area support the pontoon shaft either side of the tiller arm.

Trial and error?

This was the crunch time and the big worry was; would the home made drive hold up under pressure? The garden pond floatation trials, **Photo 11**, showed that fully loaded, the centre belly of the boat was just sitting in the water, and the pontoons were submerged to perhaps 80% of their depth. This was a bit lower than anticipated, so the sides of the front pontoons were plated with 4mm thick Styrofoam sheet and this raised it all a tiny amount when at rest, but more importantly, gave 16mm of additional total width to the pontoons to help lift them once underway. As a positive however, the pontoon boat was level when at rest and the still water clearance was academic as once the boat is under way there should be dynamic lift for the water to clear the hull properly.

There remained the vexed question of exactly how deep one should mount the propeller. I decided that in order to negate the effects of cavitation when at speed (but please see later what happened), the propeller needed to be set below the level of the pontoon bottom, so the shaft was mounted so that the top of a 50mm propeller would be 25mm below the bottom of a pontoon float. Finally, a hardwood motor mount was made and the whole drive unit complete glued to the hull bottom plate, **Photo 12**. Water entry prevention for the vertical rotating shaft was provided by a short piece of brass tube and nylon flexi-shaft liner and in practice this has seemed to work very well.



On the water - Take 1

The unfinished, but Eze-Kote Resin waterproofed pontoon boat sat serenely on the boating pond at Bushy Park fitted with a medium sized propeller waiting for the ultimate test. The first thing to do was to hold on to the bow and then try full throttle for several minutes, to find out if the power train was mechanically fit for purpose, something difficult to do in the home domestic test-tank (aka the bath) and after several minutes of this misuse, nothing had broken and as a bonus the water at the rear showed signs of being directed by the pontoon when waggled, so the boat was pointed out on to the open water and only then was the throttle advanced, and the result?

Using the twin bladed 40mm propeller, I twisted and waggled the boat slowly on manoeuvres near to the bank, 'just in case' as we all do, and the slow speed manoeuvrability from surely the world's fattest rudder was good and indeed surpassed expectations, appearing to vindicate the video clip of the real boat on its first test. When the throttle was pushed forward however, two things happened; there was an increase in speed, but then at about 50% throttle and above, the propeller was heard to 'surge', obviously suffering from cavitation.

It would go no faster as the cavitation got worse the more the throttle was advanced, which was disappointing considering the propeller was immersed by at least 40mm of water and I assumed that water turbulence



created by the (initially deeply) submerged pontoons was the cause of this. An X30 propeller was tried, and although there was no cavitation, there was insufficient thrust to get the boat up on to the plane. In desperation, a monster Graupner P50 hydroplane propeller was fitted and this powered through the cavitation and wow.....! The Pontoon Boat went up on to the plane even when still not on full throttle. At least the boat remained level at whatever speed it attained, although the amount of water thrown everywhere left something to be desired. I suppose it's obvious when pointed out, that as the speed rises the pontoons lift out the water and so the rear pontoon steadily loses its depth of engagement in the water and hence its steering effect. On the plane the boat veered violently to starboard due to propeller torque and there was no rudder steering whatsoever. It was motored slowly back to the bank, the tilting pontoons having not helped the steering as they had

now jammed, hard over to one side in the meantime.

Back to the workshop.....

Necessary modifications

A new rear pontoon was made from Styrofoam without a ply skin, but veneered, and this now included an aluminium rudder blade to retain steering at speed. Rudder throw was reduced and the pontoon was lengthened and re-profiled for a shallower entry into the water, compared to the original. Loctite 222 (low strength, for small screws) was applied to the grub screws holding the Meccano gears on to the drive shafts as a couple were now missing despite having been tightened up before the initial test, and the aluminium servo arm that operated the cross-bar was tending to bind at full lock and so several modifications were trialled, culminating in using a thick plastic arm before finally obtaining the desired smooth motion.

17



18



19

When I first saw the picture of the boat I assumed it would be painted, however the video shows the boat was made from what looks like nicely varnished plywood and to simulate this finish I was forced to veneer it all. I had not used veneer before and so after obtaining advice from fellow boaters on the MB Website Forum, a suitable roll of Mahogany veneer was obtained and applied using either contact adhesive or waterproof PVA glue. It was trimmed, sanded and then varnished with several coats of clear gloss marine varnish for a nice shiny finish and very smart it is too. **Photo 13** shows this veneering in progress on the new stern pontoon and one of the front pontoons. You can also just see the extra Styrofoam outer buoyancy aid layers laminated to the original front pontoon sides.

This all sounds easy, but truth is that it was fiddly and time consuming as the veneer split very easily and if using contact adhesive there is only one chance to get the piece positioned correctly. All the pieces were cut generously oversize and then sanded to contour, but there was some tricky cutting around the leading and trailing edges of the wings and even more difficult was the

actual gluing of the curves front and rear where brute force was applied (actually a firm grip and pressure) to get the veneer to curve round the tapers. Finally, there was the endless rubbing down with progressively finer grades of wet & dry sandpaper paper (used wet) and re-varnishing with about 12, or was it 15, coats? I lost count, but eventually stopped when a reasonable finish had been obtained, and even then it is not completely perfect, but you don't want to know about that. **Photo 14** is of the Pontoon Boat in its final configuration and please note the new rudder blade under the aft steering pontoon.

A replica (possibly) of the inventor, the aforementioned Thomas A.E Lake, had been sourced and fitted into the cockpit hatch. This hatch is not indented sufficiently far forward due to the presence of the tilting gear just below the steering wheel, so a representative glossy mahogany wheel has been provided for Thomas and the hatch has been extended with matt black paint. Due to a shortage of suitable 1:12 scale figures, he is a touch small and has a neutral expression, but he should really look very scared, **Photo 15** being of the boat at rest whilst on the water. **Photo 16** is from the other side so you can clearly see the

range of movement of the pontoons. They are set as if for steering hard to Port and the reverse happens when steering to Starboard.

To complete this sequence, **Photo 17** is a side view and you can see the deflector plate on the main hull unit's bottom section just ahead of the rear steering pontoon and everything is set for straight ahead motion.

On the water - take 2

Back on the pond and the boat was now behaving very well, **Photo 18**, starting to get up on to the plane somewhere around 75% throttle and was indecently fast, but there was a lot of water being displaced by the pontoons to put it mildly, **Photo 19**. This was no doubt a function of the boat being relatively heavy for a hydro' design and this was not helped by the pontoons pushing water under the hull when tilted. In addition, at low speeds water was seen to come over the front of the pontoons which was worrying, and could only be caused by the odd front drive arrangement pulling the bows down slightly before hydrodynamic lift raised the pontoons. Manoeuvrability with the new rudder was good and control could be exercised when on

the plane, although I was (and am) still a bit wary of trying the boat in sharp high speed turns. The inventor's tilting pontoon would obviously allow such a manoeuvre, but you never know.

Motor choice of diameter and a modest kv rating seems to have paid off as the 50mm hydroplane prop', after more testing was found to be the only propeller that would work properly. It turns easily and the boat does not scream like a banshee at full speed, but progresses with a fanfare of thrashing Meccano gears and a growling motor, a true gentleman's racer. The pictures show a mix of using the boat with the NiMH battery and an alternative 2S (7.4v) LiPo battery, and you can tell which is which by looking at the draught and wash of the boat. Performance was further transformed by the use of the 2S LiPo 7.4v battery as although fast with the NiMH pack, it now fairly rocketed along. The LiPo battery is of course about 60% of the weight of the six cell Sub-C NiMH battery, so that helps as well. The phrase, 'takes off' was almost appropriate, as the pontoons were then hardly touching the water and the excessive water splash much diminished, although not totally, but now a true hydroplane.

It does still sit very high out of the water though and twitching the steering at speed is a bit nerve racking, but thus far it has remained upright. At low speed the small decrease in weight and thus a different centre-of-gravity, has mostly removed the wetness and water no longer comes over the front pontoons. Lastly, the centre drive unit can be seen to be pushing water up under the hull's rear section, no doubt due to the hydro' style of propeller, and even over the rear pontoon despite the deflector, something noticed when studying the photographs at leisure. This cannot be good for performance, but it is the style of drive unit that the prototype was fitted with.

Conclusion - yesterday's tomorrow today

Did Thomas Lake build a boat that reached his 150mph estimate and were any more built? Hard to tell, as I have not found pictures of other craft and on the basis of my model's performance with the rear steering pontoon, it may be as well he didn't try for 150mph!



Will it fit in your boathouse?

The all-important model dimensions:

Hull:	Length 510mm, width 70mm, maximum depth 90mm.
Front pontoons:	270mm long by 65mm wide and 50mm deep.
Rear pontoon:	170mm long, 70mm wide and 40mm deep.
Overall length:	590mm.
Beam:	330mm.
Weight:	Including NiMH battery, is 1.29kg.

To wrap this up, **Photo 20** is of this 21st Century model in black and white, not unlike the full-size original in that issue of *Mechanix Magazine* back at the beginning of this article.

I am pleased with this model as it combines old fashioned varnished elegance and has a jolly ripping performance. I would have liked a bit more clearance between hull and water for appearance's sake at rest, but there again when planing at speed, the hull appears to ride uncomfortably high out of the water. It is fun to see the pontoons tilting from side to side when on the move and it does appear that the initial worries about the efficacy of the somewhat fat rudder (rear steering pontoon) were mostly justified.

Apart from a bit of minor tinkering, the only big change was to make a new rear pontoon after the initial test session, and even then this was an easy modification, so all in all the initial design was quite sound. However, it has to be said it is a bit heavy for the available pontoon buoyancy and I can't see a way round this without making the Pontoon Boat larger, bearing in mind its pontoons are

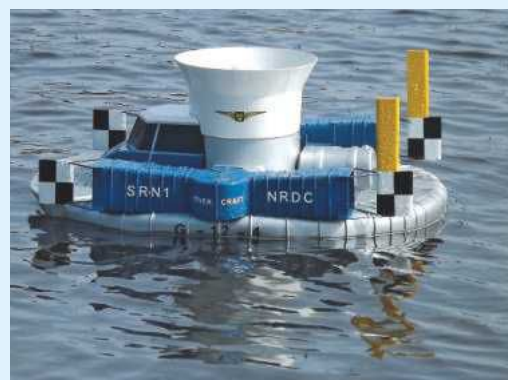
already well oversize, but structural weight lessens in regard to an increase in volume. As for the tilting pontoons, I think I can say that Thomas has been vindicated, as the craft has remained quite stable at any speed, or at least has not flipped over yet. The homemade outdrive unit appears to be quite up to the job and after having used Loctite on the screws has given no trouble, but the 20 Amp esc gets quite hot, together with the motor, as there is little ventilation. Fortunately, the aircraft style forwards only esc cuts the power when the temperature rises, and you can see the effect of this if at full throttle and come back to shore for a 5 minute rest. About 6 or so turns around the pond at full tilt is more than enough in any case for the inventor, and more particularly for the nerves of the other pond users.

At the end of the day then, did we use sufficient artistic licence to produce a genuine 1930's experimental high speed pontoon boat? Of course we did, and then some. I only wish that Thomas Lake could have seen it on Bushy Park Pond.

Enjoy your hobby - Ashley Needham

And for the future?

Here are two more of Ashley's innovative models for readers to enjoy and hopefully to be described in these pages in the future.



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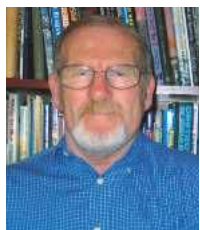


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The Algerian Guided Missile Patrol Combatant EL Kirch arriving at Portsmouth in 2005.

Range Finder



Dave Wooley with his Worldwide Review of Warships and Warship Modelling

Welcome once again to our regular sortie into the world of fighting ships, and this month we look at an Algerian warship, the EL Kirch, and continue with the construction of our 1:35 scale OSA Class Fast Missile Boat model, plus we have the answer to the MB March 2017 issue Mystery Picture.

El Kirch – Algerian fast missile boat

Over the years I have seldom visited small warships, although I did visit a squadron of German Type 148 fast missile boats getting-on for some 15 years ago, and an in-depth feature appeared in this magazine at that time. Since then, opportunities to visit similar craft have been limited, but at the 2005 International Festival of the Sea, I did manage to get permission to visit this Algerian fast missile boat named EL Kirch (which means Shark), one of a class of three and here are the photos from that occasion.

This Djebel Chenoua class of corvette

are of Algerian design and construction, all being built in the 1980's. Its three units are specialised for anti-ship warfare and search and rescue operations, and the other warships are: 351 Djebel Chenoua; 352 El Chihab and the pennant number for EL Kirch

is 353. They are otherwise known as the C58 Design and were built at the Mers el-Kebir Shipyard and displace just under 500 tons with a hull 58.4m long by 8.4m beam. There is a real 'pick an mix' with the electronics and armament, as for example the 76.2mm 59 calibre naval gun is a Russian AK 176 type, but using a Chinese version of the MP-123-02 fire control system which uses radar, television and laser designators. This



Photo 1. Looking towards the bows.

system has a range of 28 miles (45km) without electronic counter measures, but just 18 miles (30km) with them, and it weighs 5.1 tons.

For close-in air defence, El Kirch has the Russian AK 630 Gatling type of automatic gun. The air search radar and early warning pods are Chinese. The missile offensive armament consists of four C 802 anti-ship missiles (known as YJ8 in Chinese nomenclature), with a range of 120km using infrared homing guidance. Propulsion is by three MTU diesels developing 14990bhp to three propshafts, and El Kirch is capable of 35 knots.

El Kirch Photo Tour

Going right forward we have a clear view of many of the fittings. The deck is not coated with an anti-slip paint, and the plate lines are visible beneath the plain covering that has

Photo 2. The forecastle is a busy area with fittings common to many warships of this size and type.

Photo 3. The AK 176 76mm liquid cooled naval gun, and please note that the fully enclosed bridge is almost the full width of the main deck.

Photo 4. A model maker's view of the deck hatches and vents. In the foreground is a cordage reel.



Photo 5. Looking aft along the port side. It's worth noting that these railings are all welded and fixed, different from those forward.

been applied. Right forward on the bow is the Panama Bow(s) used for mooring. It's also worth noting that the handrail stanchions are of a round section, **Photo 1**. Moving down on to the forecastle shows clearly the port and starboard anchors with two hawse pipes and stoppers, but only a single capstan,

Photo 2. The following picture is a detailed view looking towards the front of the AK 176 gun. The original design specification called for the fitting of an OTO Malaria 76mm gun, but this was amended during construction. The AK 176 is reputed to be able to fire 120 rounds per minute and to have successfully engaged anti-ship missiles during trials, **Photo 3**.

The El Kirch design dates from the 1980's and many of the fittings are of that timeline. Moving further along the forecastle, in the area between the breakwater and the mounting ring of the AK 176 are a number of hatches and vents, **Photo 4**. When moving over to the port side and looking aft, we can see three mushroom vents of a type still being fitted to modern Russian warships, **Photo 5**.



Radar

The next picture gives a general port side view forward showing the warship's noticeable sheer line, **Photo 6**, with **Photo 7** showing more of the main superstructure (now from starboard), and ringed in red is the MP-123-02 fire control radar for the AK 176 gun. Immediately above that and ringed in yellow is the Decca 1226 navigation radar and above that ringed in blue, is the air surface search radar and mounted at the top of the mast is an early warning intercept pod.

Photo 8 shows all of this again, but now looking aft from the foredeck. The lattice foremast is constructed from

tubular section steel with access by ladder to its upper platforms, **Photo 9**. Towards the end of the deck housing amidships is an optronic director of Chinese origin, **Photo 10** and in **Photo 11** we have a wider view of 01 deck where we can see this director again and on either side are four liferaft containers. Between the aft mounted AK 630 automatic gun and the rear of the superstructure block, there is a small zodiac inflatable, **Photo 12**.

Moving further aft, we can see the circular drum type mounting for AK 630 automatic gun and on the main deck facing aft, both port and starboard, are twelve tubes for a

decoy system, **Photo 13**. Their source and manufacture is not known, but they could be of Chinese origin. Right aft are the primary weapons of El Kirch, which are the four launch boxes (two each side) for the Chinese C 802 anti-ship missiles, **Photos 14 and 15**. What is interesting about this 120km range missile is its remarkable anti-jamming capability, the system having been used against, and badly damaging, the INS Hanit of the Israeli Navy, a Sa'ar 5-class corvette built at Northrop Grumman Ship Systems in 1994.

Our concluding **Photo 16** of this brief Photo Tour is a view looking towards the transom and the missile launch boxes.



Photo 6. A general view of the port side. Please note that the hull rubbing strake starts midway along the length of the forward deck housing.

Photo 7. A full starboard view of the forward deck housing, highlighting the radar equipment (please see main text for more information).

Photo 8. Looking towards the forward face of the mast with each specific radar clearly visible.

Photo 9. The lightweight tubular lattice mast.

Photo 10. The Chinese manufactured optronic director, type not known.





Photo 11 Looking aft from a position immediately behind the mast towards the optronic director.

Photo 12. El Kirch carries a single 4.7m Zodiac inflatable boat.

Photo 13. The Russian built AK 630 close in weapon system, and below it and forward of the mounting are a cluster of Chinese made decoy launchers, type not known.



Photo 14. Mounted on the stern are the four launch boxes for the Chinese made C 802 anti-ship missile.

Photo 15. A good view of the mounting frame for two of the C 802 launch boxes.

Photo 16. Within the aft mounted launch boxes are 120km range C 802 anti-ship missiles.



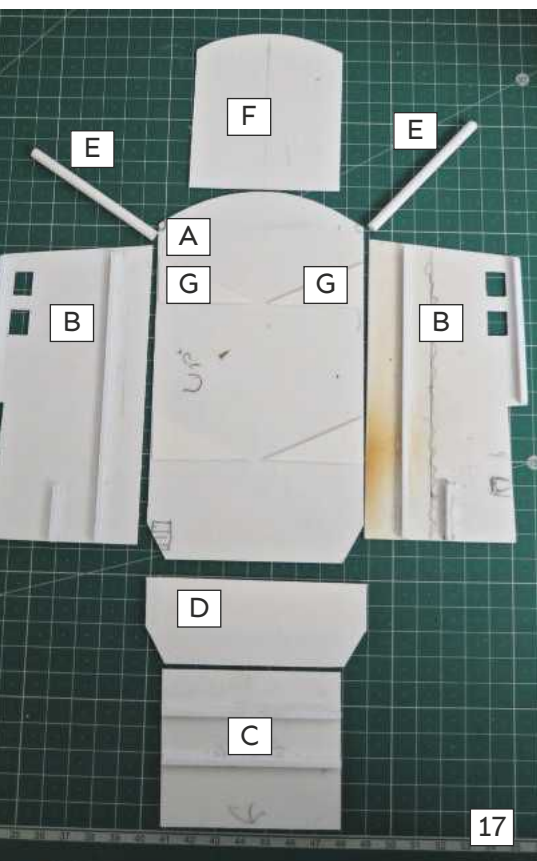
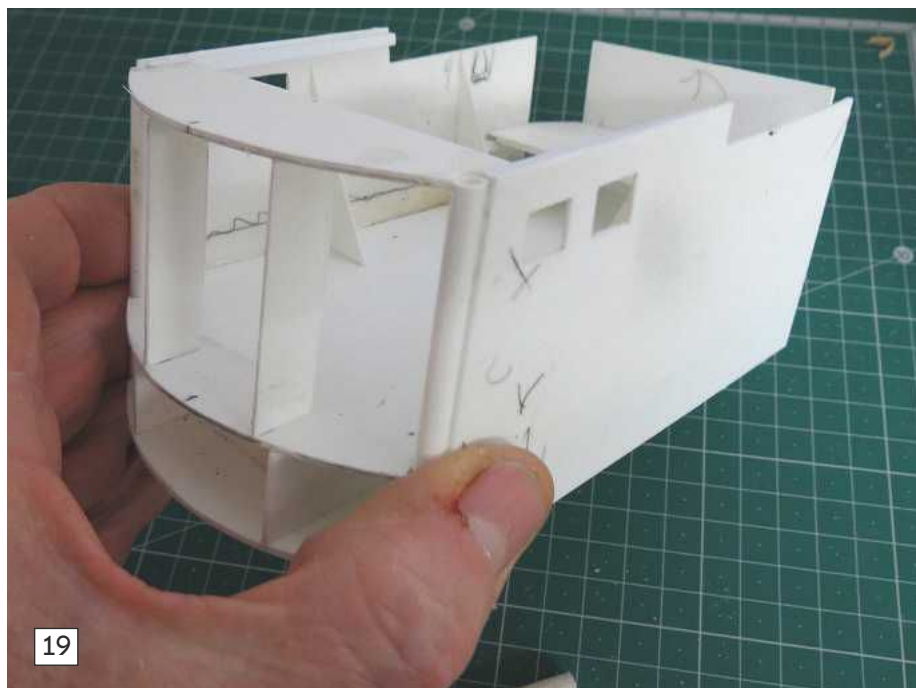


Photo 17. The basic parts that create the wheelhouse.

Photo 18. Assembly is quite simple and involves joining the sides to the upper and lower parts of the wheelhouse.

Photo 19. The partially assembled wheelhouse with its curved front piece supports in place.



OSA 2 Type 205U **PART 2** Fast Missile Boat Model

Basic superstructure and running gear

As mentioned in the March 2017 issue of Model Boats, this is not a prolonged project as these fast missile boats are relatively straightforward from a model making point of view. In Part One we saw the basic positioning of the motors, speed controllers, mixer unit and the rudder servo, and here we will construct the wheelhouse and main box-like superstructure, plus install the propshafts.

Creating the wheelhouse

This is an enclosed unit with no bridge wings and it is a sealable citadel, but there is an open navigation bridge on top and slightly behind it all. Our attention this month focuses on the construction of this part of the model and developing the particular shape that is associated with the export variant Type

205U rather than the standard OSA boats, which had sloping rounded sides. In its basic form, the wheelhouse unit being made here consists of the following basic parts.

Parts A: The identical upper and lower base pieces.

Parts B (2): The port and starboard side pieces.

Part C: The vertical back piece.

Part D: The central shaping piece.

Part E (2): The rounded front corner former pieces (tube).

Part F: The central roof piece.

Parts G (4): Triangular side panel supports.

All have been cut from 1mm styrene sheet as in **Photo 17**. The OSA 1 drawing of the wheelhouse provided some help in determining its length, height and deck sheer, but a

modification was required to gain the necessary difference in profile. Assembly adopted a furniture 'flat pack' style of construction, taking into account the inward angled rear section of the wheelhouse which marries to the deck housing behind it, **Photo 18**.

Styrene box section was added to the top edge, but kept 1mm down, to allow for the roof to slot between the side pieces. This same box section was added to the inner face of each side panel supporting the upper base with 4mm styrene tube added to each vertical corner of the wheelhouse front with strips of styrene forming the supports for the top rounded edge, **Photo 19**. Please note that the vertical round tube pieces on the corners reduce the volume of filler needed to create the desired curves.

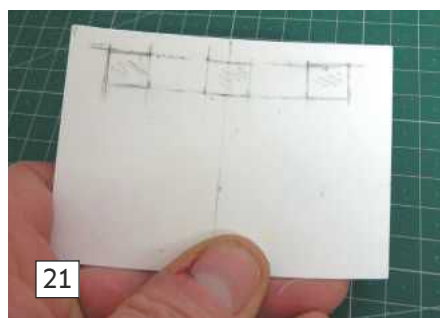
As the roof also has rounded edges, 15mm balsawood sheet was used with styrene



Photo 20. In order to achieve the rounded contours of the sides and roof, it is easier to use some balsawood sheet.

Photo 21. The wheelhouse front windows were marked with the styrene piece temporarily in position, thus allowing for its curvature.

Photo 22. Filler has been added around the top edges of the roof section and the vertical corners of the wheelhouse front, all blended into nice curves.



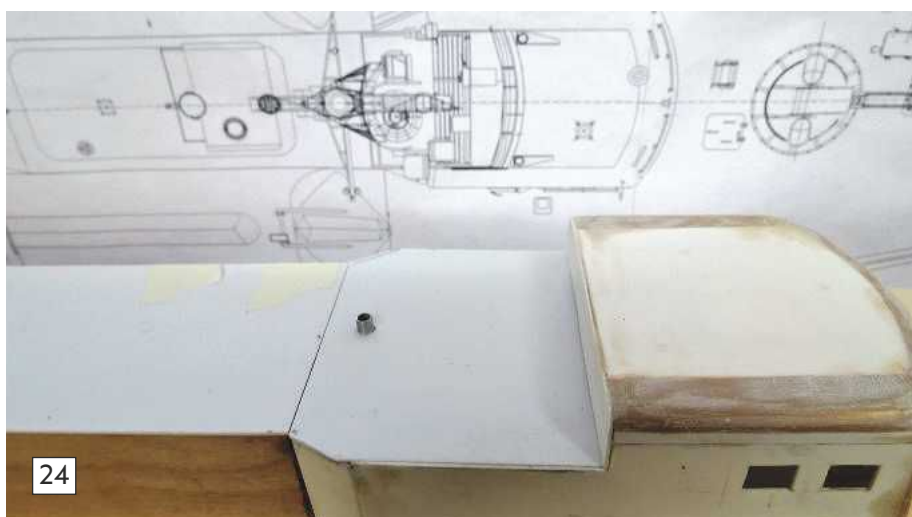
sheet forming the flat top of the wheelhouse and filler is going to be used to make a neat job of it all, as in **Photo 20**.

Front face of superstructure unit

A sheet of 1mm styrene sheet was prepared and cut to shape with the front windows marked, **Photo 21**, before being wrapped around the formers (please see Photo 20 again). **Photo 22** shows how the rounded edges of the wheelhouse roof slot into place and for the time being this section will remain detachable to allow the window glazing to be inserted after the interior is fitted-out.

Upper bridge

Essentially this is an open platform, flush with the deck housing behind, but slightly below the roof of the wheelhouse. The sides to complete the upper bridge shape will be added later and a length of aluminium tube is positioned beneath the location of the mast to allow for wiring the navigation lights. In **Photo 23**, ringed in red, this shows how the upper bridge floor piece narrows at each of its rear corners to blend with the deck housing unit beneath and behind it, **Photo 24**. It should be noted that the wheelhouse is made so it can be lifted clear and is separate from the deck housing behind it.



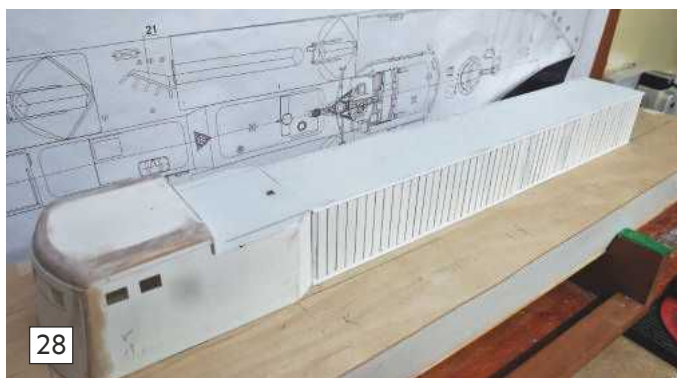
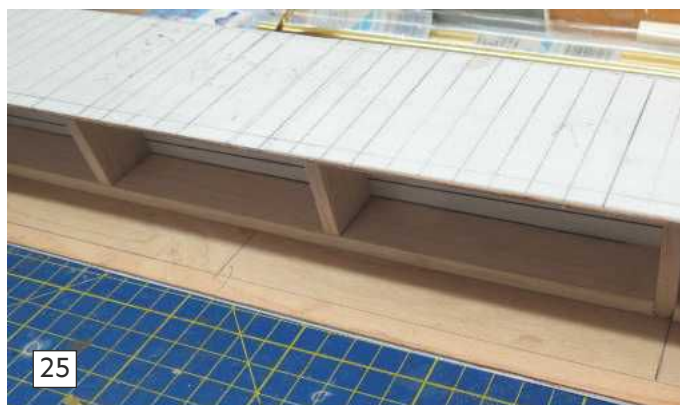


Photo 25. The main aft part of the deck housing was initially created around a box of 1mm marine ply and balsa wood, all skinned with styrene sheet.

Photo 26. The oddly looking corrugated vertical panels have been created using 1mm thick styrene strip.

Photo 27. A 1mm thick spacer was used to ensure the gap between each vertical panel was identical.

Photo 28. The basic superstructure unit.

Photo 29. The sides and front of the upper open navigating bridge section.

Photo 30. The upper bridge side and front panels are in place.

Main deck housing

As mentioned in the March 2017 issue, the superstructure unit supports a number of fittings which include a Drum Tilt radar aft and the Strella SAM system amidships for air defence. Also, there are only two box-type engine air vents, ensuring a relatively uncluttered main deck housing unit. This basic elongated box section has been initially created from 1mm marine ply and balsa wood, with its sides and top all clad (skinned) with 1mm styrene sheet. The sides and its after end are fitted with a series of vertical panels 5mm x 40mm, with the spaces between marked as 1mm wide, **Photo 25**. Prior to fixing the vertical panels a top edge, 2mm square, and a bottom edge of 4 x 2mm, were fixed in place. Each panel was cut to size using a modeller's guillotine, carefully checking that each fitted exactly between the top and bottom strips, **Photo 26**. Using a 1mm spacer piece, each individual panel was set in position, remembering to allow space



for the watertight doors, **Photo 27**, and the results thus far can be seen in **Photo 28**. The entire process is straightforward, if a little time-consuming, but it is different from the same deck housing unit fitted to the OSA 1 type of boat.

Upper bridge sides and wind deflector

The upper bridge sides and wind deflector were cut to size with their basic shapes taken from the drawing and modified as the photos indicated last month, **Photo 29**. This is a simple assembly and in due course a windshield will be added and the inside area detailed, but for the time being getting all these basic structures prepared is the most important thing, **Photo 30**.

Propellers and rudders

When viewing pictures of the propellers, it became very clear that the pitch and size of



Photo 31. George Sitek supplied these superb bespoke propellers and rudders.



Photo 32. Final positions for the 12v drive motors.

Photo 33. A simple jig for aligning the propshafts and propellers.

each meant they were not standard stock items. For these and the rudder assemblies, George Sitek came to the rescue. He is known worldwide for his manufacture of bespoke propellers, running gear and rudders to an excellent standard and I was not disappointed with his efforts. The rudders are very small and only have a depth of half of the radius of each propeller, but as this arrangement is that which is fitted to all the OSA boats, then their inclusion is fully justified, **Photo 31**. The propshafts were fitted into their prepared locations and as can be seen in the next picture, two motors were inverted to achieve their correct angle for the propshafts with the third central motor slightly forward, but mounted conventionally, **Photo 32**. Aligning all three propshafts could not be easier and I followed the usual method of fixing a locating panel beneath the transom which had three centre points drilled ensuring that the three propellers were all at the same height, but noting that the angle of the centre propshaft differed slightly from the outer two as it left the hull in a slightly different position, **Photo 33**.



References and acknowledgements

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Radars and fire control systems – World Naval Weapons Systems.

French cruiser Montcalm ref: Cruisers of WW2, An International Encyclopedia by M J Whitley, Pages 43 to 47.

OSA 2 Type 205U model refs: George Sitek, Albion Alloys, Scoonie Hobbies.

Bill Clarke for sourcing the Mystery Picture of Montcalm.

Answer to the March 2017 Mystery Picture

Clue was: Operation Anvil and Dagoon.

Okay, not an easy one, but operation Anvil was the original code name for Operation Dagoon, the landings in Provence and the recapture of Toulon on the French Mediterranean coast in late-August 1944. This was a direct reference to the participation of the French light cruiser Montcalm in this operation which of course was featured as the March MB Mystery Picture. Montcalm was a 7721 tons light cruiser of the La Galissonniere Class, 589ft in length, all these light cruisers being laid down between 1931 and 1933.

Montcalm was built at the Société Nouvelle des Forges et Chantiers de la Méditerranée (FCM) in La Seyne-sur-Mer near Toulon between November 1933 and November 1937. She was originally fitted with nine 6 inch guns in a 3 x 3 arrangement, eight 3.5 inch guns, twelve 13.2mm machine guns and four 21.7inch torpedo tubes. This was altered during the US refit of 1943 when the hangar, catapult

and original main mast were removed and the AA armament was augmented by the addition of six 40mm quadruple mountings together with sixteen 20mm guns. Referring back to the picture in March MB, this shows Montcalm following her post-WW2 refit in France which included replacing and installing a new pole mast. The post-WW2 years saw Montcalm continue with her colonial duties in French Indo-China, and after a spell in reserve she was used as an accommodation ship for submarine crews, eventually being sold for scrap in 1969.





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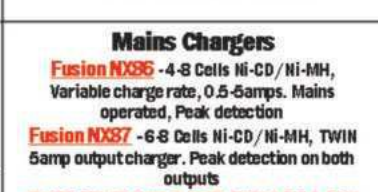
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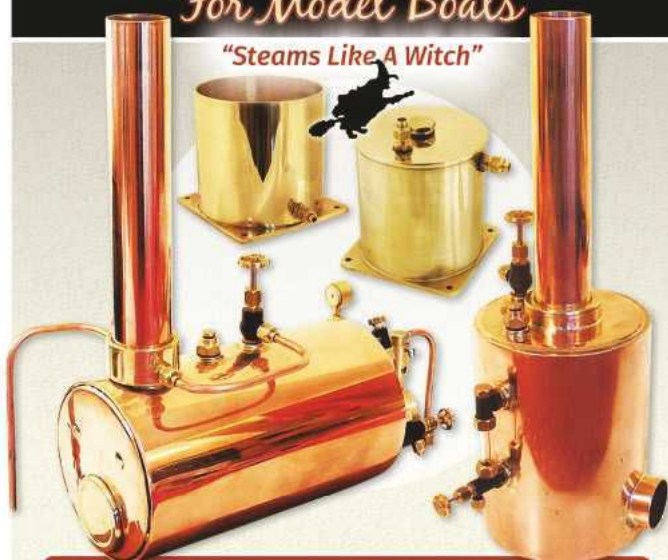
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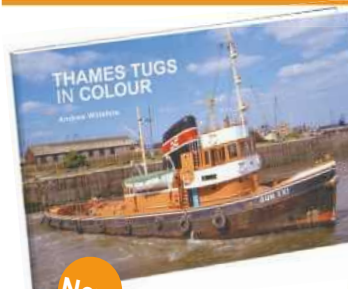
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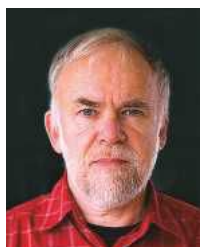
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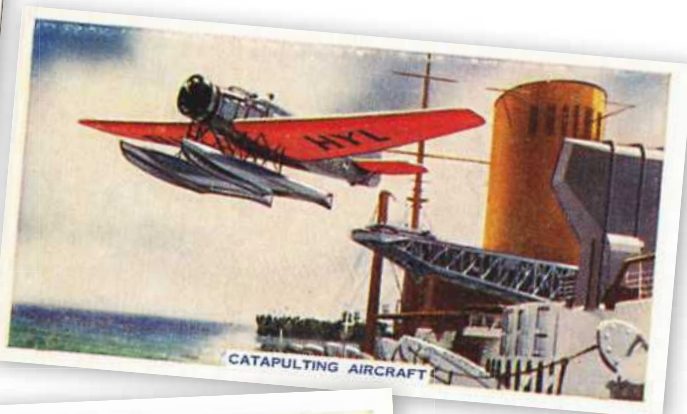
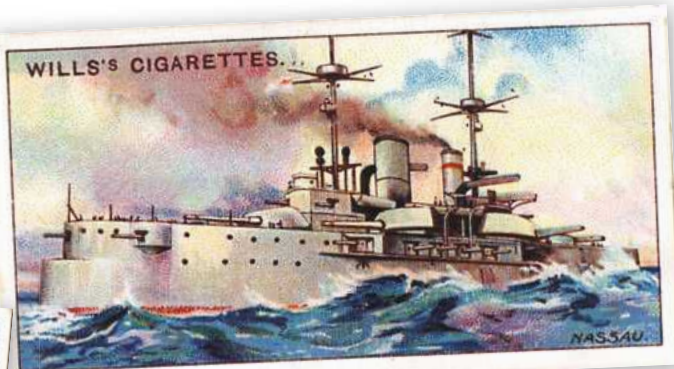
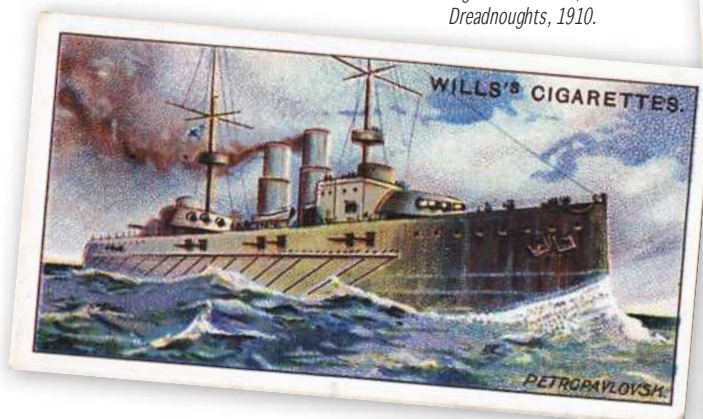


John Parker delves into the archives

49: Cigarette cards

Below: Petropavlovsk, The World's Dreadnoughts, 1910.

Right: The Nassau, The World's Dreadnoughts, 1910.



Above: Catapulting Aircraft, This Mechanised Age, 1936.



Left: S.S. Normandie, This Mechanised Age, 1936.

I have never been a smoker, but I am glad of the gift tobacco companies gave the world, that is other than the expensive and painful way of shortening your life. I refer of course to cigarette cards, the small cardboard stiffeners that were once inserted into packets of cigarettes to protect them from crushing. Cigarette companies made virtue of their necessity by printing pictures on them and descriptions on the back, issuing them as sets on thousands of interesting subjects and starting a collecting craze which was so persistent that the term 'Cartophilily' eventually had to be coined for it. A collector is said to be a 'Cartophilist', or lover of cards.

If it all sounds a bit quaint now, consider the historical context. Broadly speaking, cigarette cards were issued from about 1890 to 1940, some 50 years or so, with their golden age considered to be 1900 to 1930. For much, if not all of that period, the average person did not have money to spare to buy books, and his children got by with only the most basic toys. Being able to collect a set of cigarette cards with fine illustrations and informative descriptions on the back fulfilled an educational need as well as providing amusement and the urge to collect the complete set, and it didn't cost anything. You didn't have to be a smoker as gangs of children were known to stalk a smoker and pounce on any discarded cigarette packet in the hope of finding the card they needed to complete a set.

The subjects covered were vast and included: Australian Cricketers; VC Heroes; Motor Cars; Trains of the World; Measurement of Time; Tools and How to Use Them; History of Naval Dress; Railway Equipment; Household

Hints; Wild Birds; Gilbert and Sullivan; RAF Badges; Air Raid Precautions and Modern Architecture.

There were dozens of tobacco companies, and they all tended to cover the most popular subjects from different angles, and update them from time to time. Sets were usually of 48 or 50 cards and most cards measured around 68 to 70mm by 36 to 40mm in size. There were even Do-It-Yourself (DIY) subjects

such as chemical experiments and building a radio set. Naval subjects were popular and brands were sometimes given nautically themed names, such as Navy Cut, Capstan or Senior Service.

In 1917, manufacture of cigarette cards ceased due to the shortage of paper and manpower caused by World War One, and did not recommence until 1922. Similarly, it ceased in 1940 due to World War Two, but

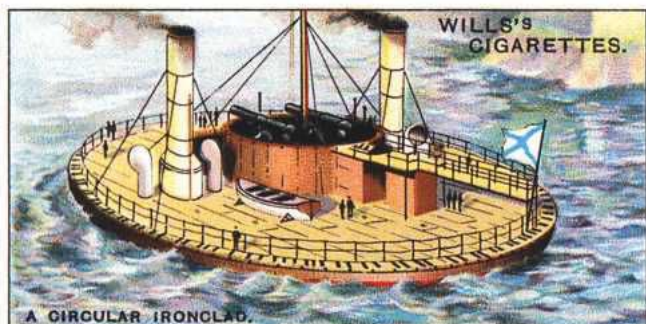
Broadly speaking, cigarette cards were issued from about 1890 to 1940, some 50 years or so, with their golden age considered to be 1900 to 1930



Left: S.S. Normandie – The Bridge, *This Mechanised Age*, 1936.

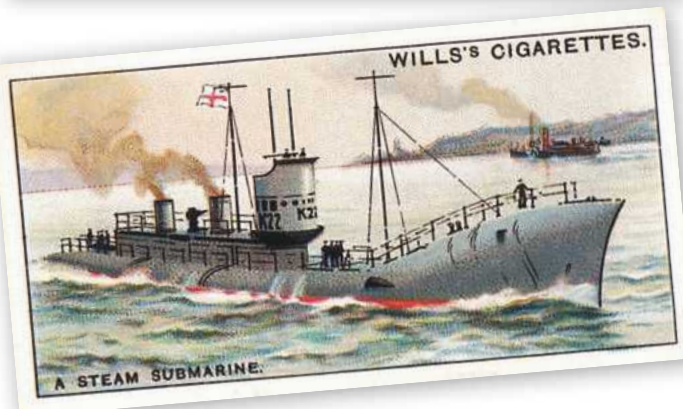


Above: T.S.S. Awatea – First Class Music Room, *This Mechanised Age*, 1936.



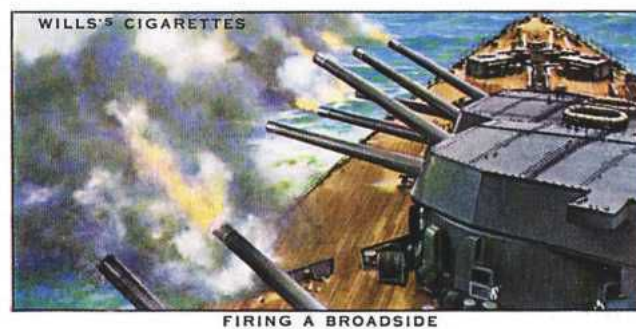
Left: A Circular Ironclad, *Wills's Cigarettes Strange Craft*, 1931.

Below: H.M. Torpedo Boat No. 102, *Speed*, 1938.



Above: A Steam Submarine, *Strange Craft*, 1931.

Right: Firing a Broadside, *Life in the Royal Navy*, 1939.



this time it was never re-instated. With a finite number of cards in circulation, prices have now climbed and the record price paid for a single rare card according to Wikipedia was \$2.8 million in the USA in 2007 – not bad for something that was originally given away free. Most popular sets through have remained very affordable, costing just a few, or tens, of (UK) pounds.

Some examples of nautical sets

The oldest set in my collection is called 'The World's Dreadnoughts', a set of 25 issued by Wills's Cigarettes in 1910. It highlights the revolution brought about with the design of the battleship HMS Dreadnought in 1905 by showing how the navies of the world felt it necessary to respond to this warship, which led to a major arms race. Illustrated is the Nassau, the first German Dreadnought completed just a year before and the Russian Petropavlovsk, still under construction. This earlier set is printed by the chromolithography

Below: Outboard Motor-Boat 'Chick III', *Speed*, 1938.



process and the illustrations are particularly fine. The descriptions on the reverse give details of armament, armour thickness, engine power and speed.

'This Mechanised Age' is a set of 50 cards issued by Godfrey Phillips in 1936. One card

depicts the aircraft catapult fitted to the SS Bremen; the aircraft was catapulted off when six hundred miles from port, to speed the delivery of letters. Another shows the French liner S S Normandie, which had just briefly taken the Blue Riband for the fastest Atlantic crossing. The card records that when Charles Dickens crossed

the Atlantic by early steamship, fifteen days was considered a fast crossing, but the Normandie had brought that down to just over four days. Ogden's 'Ocean Greyhounds', a set of 50 cards from 1938, is dedicated to these great liners, unusually depicting their luxurious interiors as well as their exteriors and thus avoiding duplication with other sets.



Right: Paying the Hands, The Navy, 1937.

Left: Signalling with Hand Flags, Life in the Royal Navy, 1939.



Below: Marine signalling with Searchlight, Life in the Royal Navy, 1939.



Below: Anti-Aircraft Pom-Pom, Life in the Royal Navy, 1939.



Below: Sponging out the Guns, The Navy, 1937.



the nine 16 inch guns of HMS Rodney in action firing a broadside weighing nearly ten tons. It became apparent from wartime action that such a broadside, if fired aft of the beam, could cause a lot of damage to the firing ship herself.

Payday came once a fortnight, and a card from the Gallaher set shows the then naval custom by which a crew member received his pay on top of his cap. Another Gallaher card shows the guns being cleaned or 'sponged out' after firing. We read that one turret of HMS Nelson's guns was manned by marines, the others by seamen, and a friendly rivalry existed between them all. The importance of signalling is shown in two cards from the Wills's set. The torpedo party was responsible for the maintenance of signalling searchlights on a warship and one shows a 20 inch diameter searchlight with a telescope for reading messages. The final card shows an armament artificer and his mate adjusting an anti-aircraft pom-pom gun, 'The most formidable weapon yet devised for dealing with aircraft'.

World War Two, just a few months away now, was to show that these weapons were not nearly as effective as thought, and many ships were to be lost as a result, especially in the Mediterranean.

The Royal Navy

Finally, two sets, Wills's 1939 'Life in the Royal Navy' and Gallaher's 1937 'The Navy' I find of particular interest, depicting as they do, not the warships themselves, but the myriad of tasks and skills needed behind the scenes to keep them operating. The Wills's set is the more technical of the two, but both reveal aspects of naval life not usually covered in written accounts. 'Firing a Broadside' shows

In 1917 manufacture of cigarette cards ceased due to the shortage of paper and manpower caused by World War One, and did not recommence until 1922.

One card shows the bridge of the Normandie and identifies most of the equipment to be found there; another the First Class music room of the Awatea, sailing from Sydney to New Zealand.

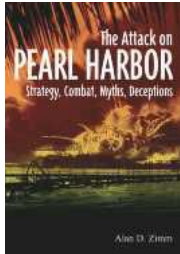
Wills's chose the subject 'Strange Craft' for their 1931 issue of 50 cards and it details a fine selection of floating oddities. Prime candidates for consideration must have been the circular Russian ironclad warships, Admiral Popoff and Novgorod. Intended for shallow water, they were armed with 12 inch guns and had three sets of engines driving six propellers. The British K Class submarines used steam turbines to achieve their fast surface speed, but suffered an appalling series of accidents, some as a result of there being 'too many holes' to seal before diving, and they became known as the 'Killer Class'.

Depicting some smaller craft are two cards from Wills's 50 card set of 'Speed' issued in 1938. MTB 102 by Vosper was the fastest torpedo boat of its time, achieving almost 44 knots on trial powered by its three Isotta-Fraschini 1000 horsepower engines. Happily this historic craft has been refurbished after a long career and is a now part of the National Historic Fleet. The outboard motorboat Chick III represents the other end of the power scale, yet held many records in the 1930's, powered by a two-cylinder Johnson outboard of just 22 horsepower.

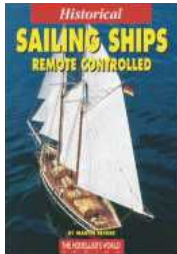
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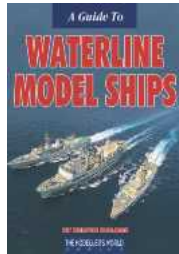
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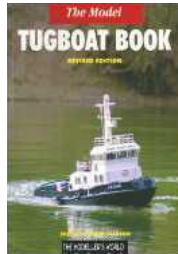
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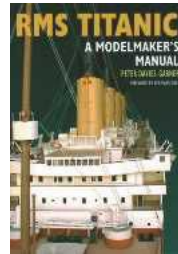
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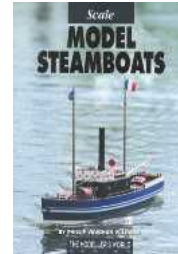
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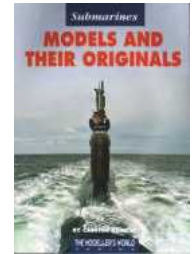
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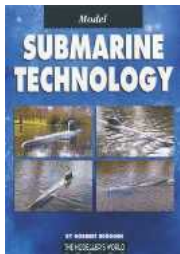
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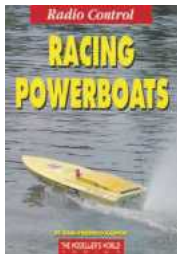
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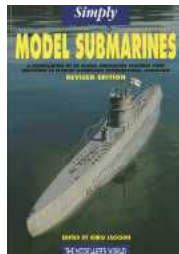
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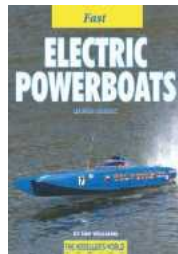
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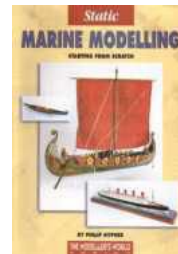
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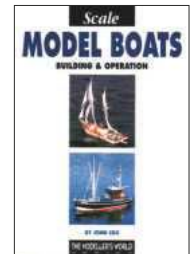
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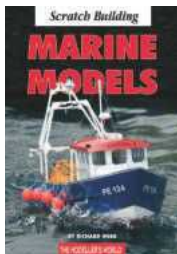
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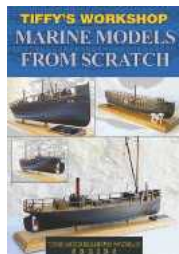
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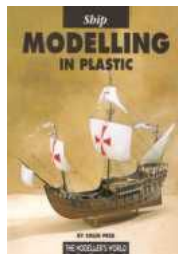
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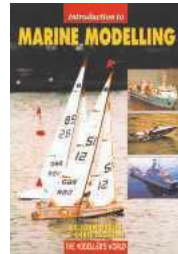
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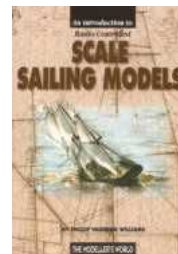
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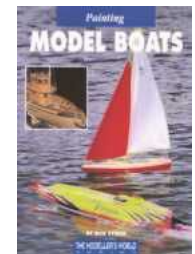
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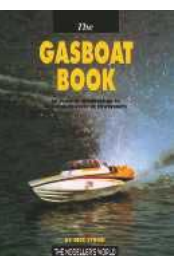
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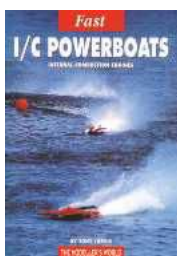
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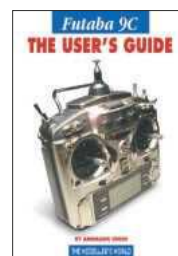
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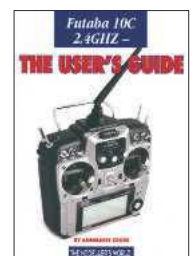
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FREE PLAN



The Sputnik Trawler

James Pottinger's New Plan
for this classic 1950's & 1960's
steel hulled fishing vessel

The trawling boom which grew from around 1881 for the next forty years or so, made Aberdeen the fastest growing city in Scotland and in the early part of the 20th Century about a quarter of the population was involved in the fishing industry in a variety of occupations. Among those numerous activities such as making ice, coal supplies, box manufacture, ship's chandlery, fish processing and others relating to the trade, the most important was that of shipbuilding and no less than 267 trawlers were built in twenty years from 1883 not only for local owners, but also for France, Belgium and South Africa.

Almost without exception, these boats were owned by landmen and then later by companies, often headed by well-to-do gentleman, the industry of the actual fishing being interlocked with various associated subsidiary activities. Inevitably this situation led to an ever-widening social gulf between the owners and the trawlermen, and even between the skippers and their crews, all because of the relentless push to fish and

then land good catches.

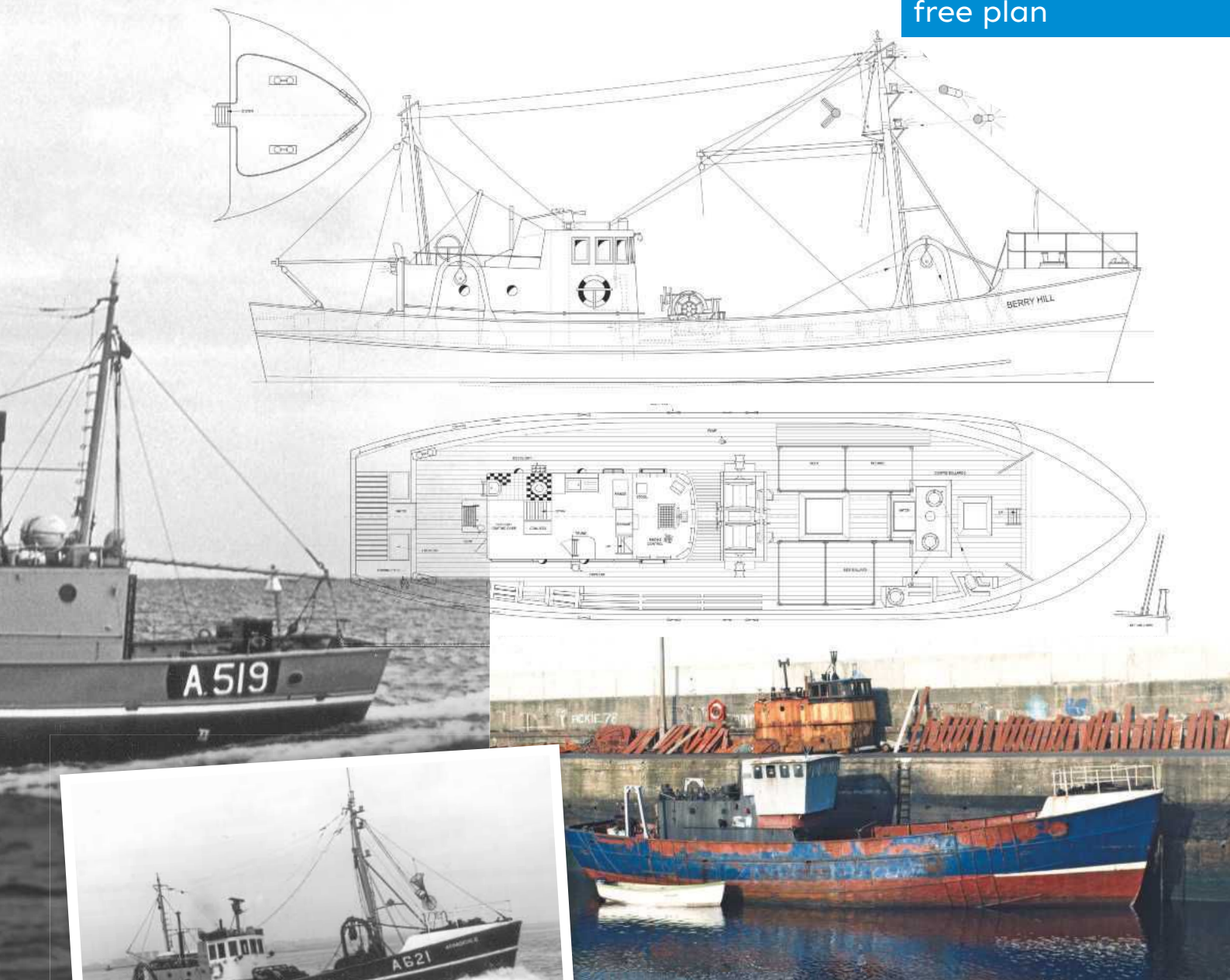
A further cause of this boom was the establishment of the most northerly main railhead in the UK at Aberdeen and its proximity to the fishing grounds in the north of the North Sea between this country and the continent. This proximity was something of a double-edged sword though, as the inability to fully supply the fish merchants and growing national demand as the year's passed was almost certainly directly related to the failure to modernise the fleet to take advantage of the fishing grounds that were further away. This was perhaps inevitable, as the owners at that time could still make a comfortable return for themselves from their various other activities associated with sea fishing. Anyway, by the 1950's and getting on for 12 years after the end of WW2, many of the Aberdeen owned trawlers were elderly, outmoded, inefficient and a throwback to an earlier age.

With a few exceptions, most of the large surviving trawlers from the end of WW2 were steam propelled, often already having been worked hard when in Admiralty service and

Above: A sea trials photo of Copenhagen, built by John Lewis in 1961 at their Montrose yard, and this is an example of the type as originally built by them with a transom stern. The DF loop on top of the wheelhouse and galley funnel further aft are prominent in this profile view. This trawler was lost south of Cape Wrath on 15th December 1971

then allowed to deteriorate, but despite the obvious economic advantages to be had by modern diesel propelled boats, many new-build replacements were still steam powered. The impetus for the renewal of the large steam powered trawlers by smaller, but no less capable, motor driven vessels was as a result of the increasing influence of skippers who frequently now at least owned a share of their boat.

Looking further ahead, it was the eventual dominance of the skipper owned, or in partnership with others and/or the crew, that meant that many of the current 21st Century net and fish handling innovations were introduced, because the trawlers in the early post-WW2 years were still using much the same gear and fish handling methods



Above: Arnisdale was completed in 1962 as Lunan A621 at Montrose. She was renamed Arnisdale A621 in 1966 and then renumbered BF394 in 1981, but later lost.

that had been virtually unchanged for a century or more. The net (pun there!) result was that the newer smaller boats of up to, and around 80 feet length with smaller crews, often grossed more than the larger conventional deep water trawlers. An example of this was when the Campbeltown Shipyard built 80 ft. Argonaut IV, grossed the sum of £527000 in 1978, the second highest grossing White Fish boat in the UK and only beaten by the much larger 185ft distant water trawler C.S. Forester.

Sputnik Type?

There has been a fair amount of conjecture exactly as to the origins of this term which was given to the type of steel hulled fishing



Above: Arnisdale (2) BF394 with its new superstructure unit and please note the trawl winch is now positioned forward at the break of the whaleback.

vessel offered here as a Free Plan. One theory is that one of these boats was launched on the same day that Russia put its Sputnik satellite into orbit, but others have it that it was when one of the Aberdeen Fish Market staff compared the new boats to the older steam trawlers. It would seem the term was

Above: Arnisdale (2) was the new name given to Dineiddwg A599 originally built at the Montrose yard in 1961. Dineiddwg was renamed Orion BF432 in 1974 and then as Arnisdale (2) BF394 in 1998 after the loss of the earlier trawler of the same name. This picture shows her being renovated and fitted with a new wheelhouse and accommodation unit. She was finally decommissioned in 2003.

Below: Bounty BF287 with a new wheelhouse and an open deck. She was built as Deevale A594 at Montrose in 1961 and renamed Bounty BF287 in 1979, but sank after springing a leak in September 1991 off Sumburgh Head, Shetland.





first used around 1958, perhaps also because of the speed of one of the new trawlers.

Anyway, the Sputnik fishing vessels preceded the space race age and the term was applied to a series of steel boats built in the late-1950's and early-1960's at Montrose by John Lewis & Sons (who also had a yard at Aberdeen) and those by the Fairmile Construction Co. Ltd. based further south at Berwick upon Tweed. The name 'Fair Isle Class Trawler' was given to the boats from this second builder who launched their first, of 23, in 1956. The suspension of the White Fish Authority's Grant and Loan Scheme occurred in 1961 and this had been part-funding these boats. The scheme was restarted in 1962, but these new build boats then no longer qualified for financial support, causing problems for these yards. The Fair Isle boats differed in design to the John Lewis boats, the latter having a transom stern and were of around 48 tons gross compared to the Fair Isle type which were nearly 50 tons gross and had a cruiser style of stern. I should point out that there is no obvious connection of this company name to the current UK high street retail chain!

Initially there were reservations by the trawlermen who were used to larger vessels for both near and distant waters, but the smaller boats and their successors soon proved to be a business saver for the company owned fleets and later for the skipper owned boats. The initial impression by the crews of these new and smaller vessels was not that favourable because they felt the boats were cramped for long fishing voyages, nor could they stow the same quantity of fish as their larger sisters. Also, their introduction coincided with a depression in the fishing industry and initially the new boats and their crews had little opportunity to prove their worth, and it was only when they were owned by their skippers that they demonstrated their true earning potential. As a class and type, many underwent substantial conversions, name changes and detail alterations to fit them for a wide variety of fishing roles in their

Above: Coronata II BF356 was built as Donside A522 at Montrose in 1961. This trawler had a number of name and number changes until eventually becoming Coronata II in 1980. She is seen here with a new wheelhouse, but later a three quarter shelter deck was added. She was finally decommissioned in 2004.

Below: Donside A522 being hauled up the Macduff slipway.



service careers, and at least four were still working 40 years later in 2002

One of the early 1960's boats built at Montrose forms the prototype for these model drawings. A Sputnik fishing vessel's dimensions could vary by a few centimetres and they were fitted with a variety of engines, some of these being later replaced by more powerful units to suit the newer methods of fishing. The early boats were underpowered and it is worth remembering that installation of a new engine in a steel fishing boat often involves cutting a hole in the side of the hull, which is no simple task. As time went on, the newer boats being built with more powerful engines became known as the Spinningdale Class, which were also built by John Lewis.



Common dimensions of a Sputnik fishing vessel

LOA	74ft 6ins (22.7m)
LBP	67ft 6ins (20.5m)
Beam	19ft 6ins (5.97m)
Depth Moulded	10ft 6ins (3.2m)

Very often, the builder would construct a four or five boat series of the type and then later, construct another series but with detail improvements in the light of operational experience, upgraded engines being an obvious example. A series of the Sputnik fishing vessel was built at Montrose in 1961 and 1962, and it comprised the following trawlers:



Above: Arnisdale (2) BF394 in her final guise had a three quarter length shelter deck and a tripod foremast, as well as the new wheelhouse.

Left: Bounty BF287 after having a three quarter length shelter deck added. This picture shows the now fully modernised rig with power block and net drum aft, trawl winch forward under the shelter deck and cod end hatch with derrick forward on the starboard side.



Right: Orion (1) BF432, now as a three quarter shelter deck trawler with a net drum and power block aft.

Yard No.	Name	Port Registry No.	Year of construction
M322	Dineiddwg	A599	1961
M323	Berryhill	A600	1961
M326	Ardsheean	A614	1961
M327	Luna	A621	1962

The name Berryhill has been chosen for the trawler on this plan, although the drawings in practical terms represent any of the numerous transom sterned type boats actually built. Naturally small differences would occur during construction and once in service some quite comprehensive alterations were often undertaken.

Berryhill plan

The lines show the hull to be of a fairly conventional shape for this type of vessel and the model maker can choose his preferred method of construction. On a planked hull I would still recommend that after setting-up the frames prior to planking, a thin batten be bent around them at deck level and at the turn of the bilge as a minimum, so as to ensure no out of line bumps or hollows and if so, some alterations can be done at that time to ensure decent hull curves.

The deck of Berryhill is wood, apart from steel on the raised whaleback forward and the short raised length right aft, which has a wooden grating on top. The wheelhouse and deckhouse are of steel, the former having windows set in wooden frames. The depth of the deck fish ponds is normally created from two planks set in steel slotted upright

posts. The trawl winch was belt driven from a jockey wheel on the forward end of the crankshaft of the main engine. The gallows were a characteristic feature of side trawlers of this era, and the sheave at the foot of the forward gallows has to be fitted at an angle to ensure a fair lead of the trawl warp down from the hanging block and on to the port centre bollard and then aft to the trawl winch. Please note the cementing on the deck around the base of the gallows and the centre and side bollards. When trawling, these vessels had to exhibit a green light above a red light in a vertical line, and these have been angled out from the mast to avoid being obscured.

Colour Scheme

I would suggest:

Dark Green: Outside of bulwarks

Red: Hull below to waterline, the trawl winch and gallows hanging blocks

Black: The hull underbody, funnel, gallows and bollards

Light Brown: The wheelhouse's lower half, deckhouse, inside of bulwarks, masts and spars etc., cowls and mushroom vents.

White: Top and sides of whaleback, wheelhouse upper half and forward section.

Conclusion

As wrote earlier, you could use this plan as the basis for any of the 'Sputnik' fishing vessel type of trawler and then give it a name, any name, and number that you desire.

Reference and acknowledgement

There are some books that are useful reading, one of which is:

Sputniks and Spinningdales - A History of Pocket Trawlers, by Sam Henderson & Peter Drummond.

Photos of **Arnisdale** and **Copenhagen** are by **Peter Drummond**, with the remainder by the author.



Light Vessel No. 21

This is a historic steel-hulled lightship now transformed into a floating art space and performance facility. She was built in 1963 as Light Vessel No. 21 (LV21) and is a unique 40 metre long steel-hulled lightship, the last of the renowned Philip & Sons of Dartmouth vessels to be commissioned by Trinity House.

LV21 saw most of her service off the Kent coast on the Varne, East Goodwin and Channel Stations. In 1981 she was involved in the worst collision from which one of these vessels survived. Whilst under tow, Ore Meteor collided with the anchored light vessel, severely damaging its upperworks and lantern tower. No crew members were injured as they took refuge at the stern, but the light vessel nearly capsized following the double impact.

A major rescue operation was launched and the badly damaged light vessel was then towed to Southampton for repairs. She was retired from service in 2008, having been converted to automatic operation in 1988 and was unpowered, although having a small bridge and funnel.





Service history

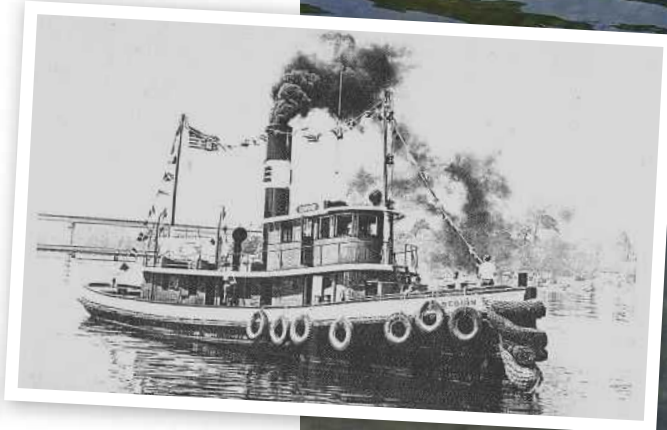
June 1962:	Ordered by Trinity House, London
September 1963	Launched
December 1963:	Handed over to Trinity House
1976:	Stationed at East Goodwin
1980:	Varne Station
1981:	Major collision in June whilst on Varne Station
1988:	Converted to automatic (unmanned) light vessel
1995:	On Channel Station
1997 to 2001:	On East Goodwin Station
2003:	On Seven Stones Station
2008:	Decommissioned
2009:	Acquired by Gary Weston and Päivi Seppälä

Principal particulars

Length overall:	133 feet (40.54m)
Length:	114 feet (34.75m)
Beam:	26.5 feet (8.08m)
Draft:	12.5 feet (3.81m)
Hull material:	Riveted steel
Crew:	7 (Master and 6 ratings)



Above: Sequin pictured in the Kennebec River c.1920 lying off Bath Iron Works, a shipbuilding company that still exists in 2017. Note the lifeboat is on the starboard side whereas the kit has it on the port side.



Above: A nostalgic picture of Sequin under steam - date unknown.

Sequin



Bob Eastwood's historic wooden hulled tugboat from a Midwest Products Kit

Thirty-two years ago during a vacation trip, my wife and I visited the Maine Maritime Museum at Bath in Maine along the Kennebec River. The museum was at that time still under construction and very new, but a visitor's ticket booth stood at the entrance to the facility and it did not take a lot of imagination to realise that this was a wooden structure from a tug of some sort. An assistant explained that it came from the Sequin and the rest of the tug was under restoration in a nearby boat shed. However, unfortunately some years later, the museum abandoned the restoration project because Sequin had deteriorated too much to make continuing the project worthwhile. Nevertheless, this created the thought of a future model boat project in my mind.

Before sharing my journey building this model, I will begin with an excerpt from the Midwest Products Kit instruction booklet which gives a brief history of the Sequin.

'Sequin is the nation's oldest wooden steam-powered tugboat and is a registered United States Historic Land Mark. It was named after Sequin Island at the mouth of the Kennebec River in Maine. Launched in 1884 in the City of Bath, Maine, she measured 100 feet in length and 20 feet in beam, with a steam engine and sails. More details are found on the Internet at the Maine Maritime Museum website, and that's the original full-size tug in a nutshell.

The scale for this model is 1:32, or 3/8 inch equals one foot. This 38 inch long model kit made by Midwest Products is unfortunately no longer manufactured, but Blue Jacket Ship Crafters in the USA produce a 26 inch version for around 250\$. Having said that, at the time

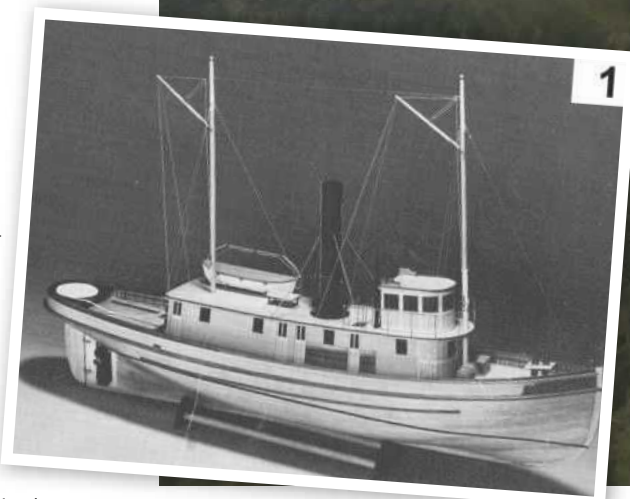
of writing in late -2016, a search online has found some boxed complete and un-started Midwest Products examples, in one case for as little as £50. Neither of the kits mentioned here are (or were) recommended for the inexperienced modeller, but the booklet included in the Midwest Products Kit contained much practical advice, especially on how to go about planking a hull.

My interest is workboats, which is also partly what drew me to this kit, but many of my model boats built over the years have been constructed from self-drawn plans. These models have invariably been of wood and for adhesives, slow and fast epoxy or cyanoacrylate (superglue) have been, and still are, the preferred option. It is worth noting that the vapour from superglue can be harmful to lungs and eyes and nitrile protective gloves are also handy when using any adhesive.

This is not a 'how to' build Sequin, but more of a series of notes covering some of the key processes involved, the model actually being built over an extended period of some years.

Hull construction

Before we begin we should stop to consider a few important points. This model is of a planked wooden hulled tug and therefore the joints between the planks can be visible. The builder of such a model will need to decide whether to show the planks beneath the final finish or sand them perfectly smooth and perhaps seal with fibreglass or epoxy resin for



Above: A picture from the Midwest instruction book, clearly showing the lifeboat on the opposite side to pictures of the full-size tug.

the sake of definite waterproofing.

The hull planking as supplied in the kit was Basswood, 0.07 inch thick x 5/16 inch wide, each supplied plank being 36 inches long. Basswood is an easy wood to work as it is not as soft as balsawood, but is somewhat stronger. The construction method is single longitudinal plank-on-frame, similar to the original full-size construction.

Now I have to admit that probably the best way to build a plank on frame model is to assemble the keel and the frame sections inverted on a firm and perfectly flat building board base and then add the planks. So what did I do?

Well, having erected the frames to the keel and glued everything together in this way, plus added thin strips of wood on both sides of the keel, I decided to temporarily screw a piece of aluminium U-section to the keel to keep it all straight and build the hull the right way up, but held in a swivel worktop mounted



vice as in **Photo 1**. This was perhaps not the cleverest thing to do, but it worked for me. As you can see from this first photo, planking has started at the deck edge, principally to stabilise the framework, the keel being kept straight and warp free by the aluminium bar. The screw holes left in the bottom face of the keel after removing the aluminum bar are not then visible, but were later filled with, not unsurprisingly, a commercial off-the-shelf filler.

It was convenient, before the planking was completed, to install the propshaft tube. Some

adjustment was necessary to get it 'just right' in terms of angle, but a small amount of epoxy adhesive mixed with micro-balloons created a thick, strong paste that could be used to fill and secure it to the supporting wood parts surrounding the tube as in **Photo 2**.

A gullet was formed on the front edge of the stem. A strip of wood was trimmed to 1/8 inch (3mm) wide and glued to the left and right sides of the bow piece so that a ridge was formed 1/8 (3mm) inch behind the very front edge, allowing the longitudinal planks to be cut and trimmed into it so as to look

uniform. Great care was taken before gluing each plank to the hull frames by dry-fitting each one and they (the frames) were bevelled on their outer edges to maximise the gluing area and ensure the hull form followed its natural curves. Gluing one, or perhaps two planks, on one side and then alternating to the other will avoid possibly warping a hull. The first planks at the (deck edge) followed the actual frame tops at deck level, and not the extensions as used on the initial building board.

Shaping the planks properly always takes



time and practice and **Photo 3** shows clearly how the 4th, 5th and 6th planks from the top have been shaped at the stern and the 7th being got ready. It is best to compare the distance between the deck edge and keel amidships with a similar measurement at the bow or stern and divide these equally depending on how many planks you intend to use. **Photo 4** (not too good - sorry) is of the starboard side, also at the 7th plank from the top. Marking each plank lengthwise with a pencil will then give an idea of the tapering required and a bench mounted disk sander is useful for tapering planks from amidships to forward and aft. Planking joints should always be staggered and short lengths are not recommended for the bow and stern areas. The stern in particular has some very sharp curves, so those planks needed to be soaked in hot water and/or steamed until flexible, then pinned or clamped in place, allowed to dry (so retaining the curve), and then glued in place the next day.

Once the planking was complete, the hull

was much more stable and the aluminium keel support piece was removed and any gaps between the planks carefully filled. The inside of the hull was coated with a slow curing epoxy resin to seal everything. Assuming the hull is the right way up, then pools of the thin epoxy resin will inevitably form along each side of the keel, unless there is a big hole in the bottom! This surplus resin can either be removed by use of copious amounts of kitchen towel, or if you have a good idea of the amount of ballast that will eventually be needed, lead shot can be added in equal amounts either side of the keel to become embedded in the liquid. In my judgment, Sequin at this scale would need ballast sooner or later, so use was made of the pools of surplus epoxy resin, but not too much lead shot was added as it is always easier to add weight later rather than remove it. The hull has a sub-deck which was fitted now and **Photo 5** is of progress thus far. Please note the extended tops of the frames which will act as the bulwark supports.

Driveline and rudder control

At this point, thinking about the r/c and motor installation was a good idea as 'getting it right' is much easier when the model does not have fittings and detail parts added. The propeller is a 3 inch diameter, right-handed four-bladed type from Prop Shop (in the UK), which sells a huge range of these as well as propshafts, the stainless steel version also coming from this supplier. I fitted an oiling tube as you can see in the earlier photographs. The oiling (grease) tube was sleeved progressively from 1/8 inch (3mm) to 1/4 inch (6mm) to accept a plastic syringe nozzle for ease of grease insertion and the propshaft tube is supported at its inner end by a scrap piece of wood.

Some will prefer steam propulsion as this is a model of a full-size steam powered tug, and there is no reason why they should not have this, if that is what they want. However, on this Midwest Products Kit project, a large 6 volt Mabuchi motor has been installed, **Photo 6**. The beam of this model is slightly less than seven inches, giving more than



adequate internal volume, and the motor, battery and electronics were all pre-positioned before installing the planked deck. The space in front of the motor is for the batteries,

Photo 7. The biggest problem that rapidly became apparent was lack of clearance underneath the rear deck above the rudder tube. A flexible cable linkage was initially installed as per the kit instructions, but this gave poor precision when selecting angles of turn, so a rather more elaborate system was devised and that can be seen in **Photo 8** of the completed model.

This involves a double pulley system using two small pulleys on the tiller and two larger pulleys on the rudder servo with heavy braided fishing line between them. In practice, this has worked well and a small spring between the lines keeps any slack out of them. **Photo 9.** The key point though is that this system enables a massive 80 degrees of rudder throw either side of neutral, **Photo 10.**

Electronics

A 6v battery has been used for the drive motor

and a 12v for the smoke generator, with a 4.8 volt NiMH for the 2.4 GHz receiver. Radio control is by a Futaba nine channel system, originally on 75MHz (which we use in America) but converted to 2.4GHz with a plug-in 2.4GHz module and matching receiver. Sequin currently only requires four r/c channels for the throttle, rudder, smoke unit (via a variable potentiometer on the Tx) and an on/off whistle switch.

Motor speed control is via an Mtroniks Marine Viper 40 Amp unit (better safe than sorry) with the rudder and micro-switch servos being Futaba. The smoke unit controller is an Mtroniks Marine Viper 10 esc operated by a rotary potentiometer channel on the transmitter which controls the voltage to the smoke generator and hence the amount of smoke. The electronics, extension wires and such-like, are all on a sub-assembly board mounted on rails below main deck level and forward of the motor above the batteries, **Photo 11.** This module is easily removed for servicing and battery maintenance. The sound system and its associated electronics are within the completed deckhouse, **Photo 12,** mounted upside down beneath its

roof. There is an amplifier, speaker, sound unit and a servo operated switch for the electronic whistle, all married to the speaker.

Rest of hull and superstructure

The bulwark planking, capping rails and rubbing strakes were now added before moving on to the construction of the deckhouse and its upper wheelhouse, **Photo 13.** As with all model projects, quite often different tasks are being undertaken at the same time as perhaps this last picture reveals. The deckhouse unit is a snug fit over the main access coaming which is an upstand of 1/8 inch (3mm) thick plywood glued in place with epoxy adhesive. This glue has tended to fall out of fashion nowadays, but is excellent for gap filling and even the 5 minute types give you some 'adjustment' time, which is always handy if something does not quite fit properly. Please note that the marked planking pieces were not yet installed on the sub-deck. The sides of the deckhouse as supplied in the kit are die-cut and there was some adjustment and dry-fitting of both the coaming strips and deckhouse parts



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before their final and permanent assembly. As a tip when building a deckhouse around a coaming, domestic waxed kitchen paper between them will prevent their permanent adhesion together.

Twenty minute epoxy adhesive was used for the deckhouse assembly when being glued together around the deck coaming. Later, some reinforcement strips were added inside the corners, making sure they did not interfere with the coaming. The exterior of the deckhouse has veneer overlays, which were not fitted until the basic deckhouse carcass was complete and a nice fit over the coamings.

The deckhouse roof is in two pieces and was installed whilst the deckhouse sides were in-situ around the coaming. Weights helped keep it in place and following the top edge sheer of the deckhouse. The wheelhouse on top is a sub-assembly and was built in a similar way to the deckhouse and has 2mm LED navigation lights, the wiring being concealed inside small diameter brass tube trunking. There are other lights around the model.

Recalling that many old wooden boats had their deck surfaces tops covered with painted canvas, a piece of old cloth worked perfectly to create this scale textured appearance. Diluted wood glue was applied to the upper deck and wheelhouse roof, and the cloth smoothed on to them on with a broad brush. One light application of primer later and then

two light coats of grey completed the effect rather well, **Photo 14**.

The kit supplied Mahogany veneer overlays for the deckhouse and wheelhouse were glued in place with superglue, care being taken to get the positioning right as there is no second chance with this glue and **Photo 15** is of the completed wheelhouse.

Deck planking and finishing off

Well, the deck isn't planked as such is the simple answer, the kit including pre-printed panels which were carefully trimmed to size and glued in place with epoxy adhesive, **Photo 16**, taking care not to get this adhesive on the 'planked' surface as once glue is into the grain of a wood, no amount of varnish will disguise it. This last picture is looking forward and the joints can be clearly seen at the aft corners of the deckhouse unit.

The supplied lifeboat moulding required some trimming and light sanding and a ridge pole was added from bow to stern. To replicate the canvas cover, the same material as on the deckhouse roof was used and finished in much the same way. Two shaped pieces of mahogany form the boat's cradle. **Photo 17** clearly shows the ridge in the lifeboat cover and the LED navigation lights illuminated.

The brasswork around the wheelhouse and the davits for the lifeboat are soldered,

which makes these stronger, but flux residue must be totally removed prior to painting. Here, they have been left though as bare brass, **Photo 18**, my choice and probably not pro-typical, but I like them like that. Many changes were made to Seguin during her 85 year working lifespan, using steam, sail and later an improved main steam engine. This model is based on the early-1900's version without rigging for the sails and also it makes it easier to handle the model at the pondside. The smoke generator is a larger version of those used in model railway locomotives and is hidden within the base of the tubular funnel, **Photo 19**, but you wouldn't know it. Smoke units for model railway locomotives are very small and designed to fit into small spaces, so you don't necessarily need the larger units sometimes seen in model boats.

Seguin had numerous paint schemes over the years and fittings were added and deleted as service needs dictated. For the hull bottom, a Caboose Red was chosen, this being a Floquil branded colour. The hull is actually painted with a blend of 20% acrylic paint and epoxy coating resin, covering the hull in one operation. The mixture was applied with a foam brush to avoid brush strokes, and very quickly at that. Whilst curing, the hull was rotated every five minutes to negate possible 'runs' as the resin started to set. A second thin coat mixed the same as the first ensured that the colour covered really well. 48 hours later, the upper hull sides from the



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waterline up to the lower side of the gunwales were masked either side of the demarcation lines and coated in the same manner as the hull bottom, but in white. The rubbing strakes just above the waterline are hand painted in

a medium green colour and the bulwarks are stained a light mahogany colour and likewise where appropriate on the deck and wheel houses. **Photo 20** is a stern starboard quarter view and **Photo 21** is of the entire model.

Conclusion

Construction time was extremely lengthy and at times, a bit challenging. Having built r/c models since I was ten years old, I am now a retired 'senior citizen', and am by no means an expert, but just dedicated to enjoying model boats and sharing the experience. I hope that this article may be of some help to someone who wishes to build this or a similar wooden hulled model boat. Yes, more detail perhaps needs to be added, but it is a nice size and practical on the water, **Photo 22**.

Having subscribed to Model Boats magazine for several years now, it is clear to me how dedicated you folks in the UK are to the model boat hobby. Sadly, the number of such clubs in the USA is a handful compared to what you have over there on the other side of 'The Pond', and finally as always, I am eternally grateful to my wife Frannie and daughter Shari for their forbearance and understanding of my hobby.

Enjoy your hobby - Robert Eastwood



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References

Mtroniks: www.mtroniks.net

Prop Shop: www.prop-shop.co.uk

Blue Jacket Ship Crafters:
www.bluejacketinc.com

Maine Maritime Museum:
www.mainemaritimemuseum.org

Midwest Products: Kits are no longer manufactured, but examples can be found online at auction and other sites.



Rhondda PART 2



Ron Rees presents a new plan for a practical and simple scale tug that will not break the bank

In the recent March issue of Model Boats, we finished with some detail work on Rhondda's upperworks and at this point a ballast and floating trial was a good idea. It is always good practice to test float a new model boat before its completion, as problems with stability can be resolved before the final decisions are made as to the waterline position, disposition of batteries and how the craft actually sits in the water. If it is top-heavy, then it is easier to resolve now, rather than after expending effort that would be wasted if something later had to be scrapped.

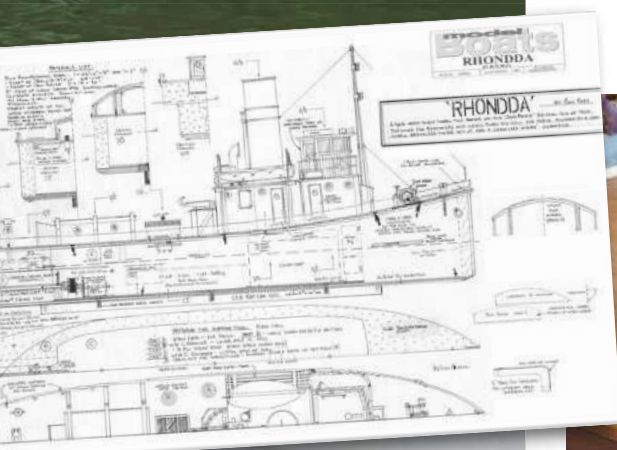
First sea trial

With the intended 12v 10A SLA battery on board, all the other hardware placed in the hull and the superstructure units held on with Blu-Tack, the tug was test floated for the first time and yes, a mini-disaster, **Photo 27**. Perhaps not too obvious from this picture, but the tug had a small list to port or starboard as its metacentric point was too high. The mistake (100% mine) was not checking the

SLA battery's internal weight distribution, as its lead plates were concentrated near the bottom of the battery, so when laid on its side (as it had to be) the centre of gravity of the battery as a whole was higher in the hull than expected. A flat LiPo or NiMH battery largely solved the problem and so much for using the unused SLA battery that had been

in stock for some time. This problem is not unique, as narrow(ish) flat bottomed craft can suffer more than conventional round bilged craft. Anyway, a 100% total solution to this problem was put to one side for a few days and thoughts turned to painting the deck as it was clear that there was still some scope for extra ballast.



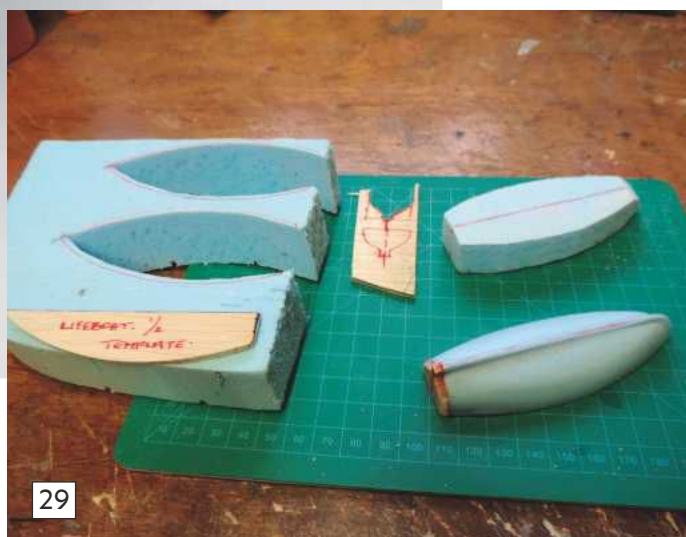


Plan for Rhondda

The highly detailed full size plan No. MM 2124 is available from MyHobbyStore Ltd and is priced at £12.50 + p/p as of February 2017. MyHobbyStore plans may be purchased online at www.myhobbystore.com or by telephone, Monday to Friday normal office hours: +44 (0)1684 588599



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Deck colour

A consensus at the pondside was that red was the best colour so masking the deck began, which was quite a laborious process, going in and out of all those bulwark stanchions and keeping a crisp edge to the already painted black bulwarks and **Photo 28** shows the result of a whole evening's masking, but it had to be done before the rest of the upperworks could be permanently fitted.

Boats and their platforms

On the plan are templates for the two lifeboats, one a half plan and the other for their transoms. These 4 inch (100mm) lifeboats are made from scrap blue foam as can be seen in **Photo 29**, using fine sandpaper to properly shape them, the keel of each being carefully trimmed with a small square file, the plywood transom piece being

the former for this.

Four coats of acrylic varnish with a light sanding down between applications completed the basic lifeboat 'blocks'. Rowlocks, tiller and a pair of oars (the shafts from cocktail sticks) were made and added to the basic 'block' and then all covered with linen from a First Aid Box's triangle bandage. Two further coats of varnish hardened this linen and stretched it taught just like a canvas cover.

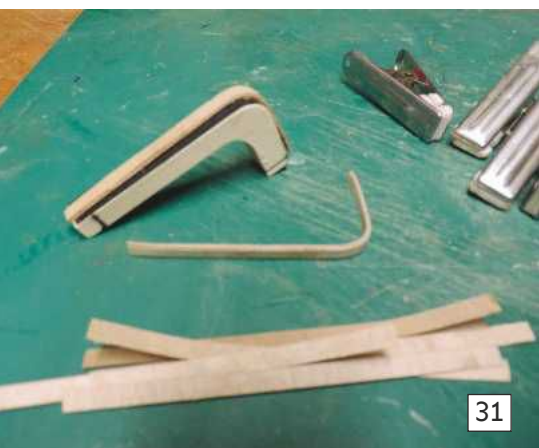
Some strips of linen were laid flat on a piece of glass and varnished, cut to the classic scalloped side shape of a cover and then glued around the top of each boat. Small screw eyes were superglued at the stern and bow of each of them to attach the blocks and tackle ropes and finally they were brush painted, white for the hulls and Tamiya Medium Earth for the canvas covers,

Photo 30.

The boat platforms as you can see in this

last photo are supported by two curved steel (on the full-size tug) supports attached to the bulwarks at their bases and the edge of the main cabin roof at their tops. A scrap of 12mm plywood was cut to match the curve needed and kept narrow to take pegs or small clamps. The outer edge was covered with PVC tape to stop the glue sticking to it, **Photo 31**. Three layers of 6mm wide by 1/64 inch plywood were laminated using white PVA wood glue and clamped to the former until dry. Four of these supports were made from the pattern and individually trimmed to match the slope of the deck. Strips of 5mm by 3mm hardwood strip (coffee stirrers from the Pound Shop again) were stained teak and assembled with little spacers and glued to their tops for the platforms and two sets of boat stands were fixed to these slats to support the boats (please see Photo 30 again).

The davits, **Photo 32**, are 2.5 inches (62mm) high and quite fiddly to make.



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Fortunately, and we should never throw anything away, there was a very old mould for a white metal davit lurking at the back of drawer, but those for this tug were cast in reinforced resin to save weight, a thin piece of stiff brass wire being laid within the mould for each davit to be cast around. Having said and done all of this, if you look at retail websites you will find similar davits in plastic or brass and they will do the job equally well. Alternatively, they can be made by using a bamboo BBQ skewer, tapered by sanding as it rotates in an electric drill or lathe chuck, and then bending the curve, after soaking it in boiling water for an hour or so, around a small round object such as a socket from a tool set. The straight grain structure of bamboo makes them flexible, but quite strong. A washer at the base for the pivot and small bead and jewellery jump ring superglued at the top will complete the job, regardless of how the davit is actually made. The davits sit in blocks supported by a styrene tube down to the deck.

The pulley blocks on this prototype model were made from Limewood strip, 5mm long x 4mm x 3mm and you will need eight of them. You don't need to bother too much with the

sheave grooves as these are hidden once overlaid with cord. A small screw eye was fitted and glued at one end and two 0.5mm holes drilled through the 4mm side of each block. Two pins were used to support the blocks for sewing and their space apart is 32mm. Thread twice through the holes leaving a long tail for tying-off and there you have the blocks completed, **Photo 33**.

Mast

This is 9.5 inches (240mm) long and is 8mm diameter at its bottom and 4mm at the top. Straight grained dowel rod or a thick knitting needle are ideal, but it needs to be tapered uniformly along its length and this can be done in much the same way as tapering bamboo for the davits. The mast was usually slotted into a tabernacle box or a framework above, or sometimes below, deck. On this model it is fixed to the lift-off one piece main deck, **Photo 34**.

The mast is fitted with several rigging and lantern rings and these were cut from different diameter K & S tubing, slid over it, and fixed. Holes for the cord eyelets were drilled 0.5mm through the brass into the wood

and these were then held in place with a dab of thin superglue, **Photo 35**.

The lanterns are purchased - they are relatively inexpensive - and attached to the ring mountings. They could I guess be rigged to work and raise and lower if desired. Regulations on the number and height of steaming lights changed as commercial shipping developed, but in 1909 the tug was fitted with only two, and these would have been oil or paraffin burners, hauled up from the deck on ropes when lit.

Rigging will require some sort of small hooks and a suitable inexpensive source is to use 'figure of eight' hooks, suitably 'butchered', obtainable from a haberdasher, **Photo 36**.

Winch

The frame was made from styrene card and its gears are from an unwanted toy mechanism. The drums as seen here are turned (very carefully) on the lathe from plastic rod, but plastic sewing machine bobbins from a haberdasher would also be okay. The handwheels are from a scrapped cheap watch in the 'Bits Box', **Photo 37**.



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The real winch would most likely have been steam driven with pistons and cylinders etc., but these have been omitted for simplicity. Alternatively, small resin winches are readily available from advertisers in this magazine.

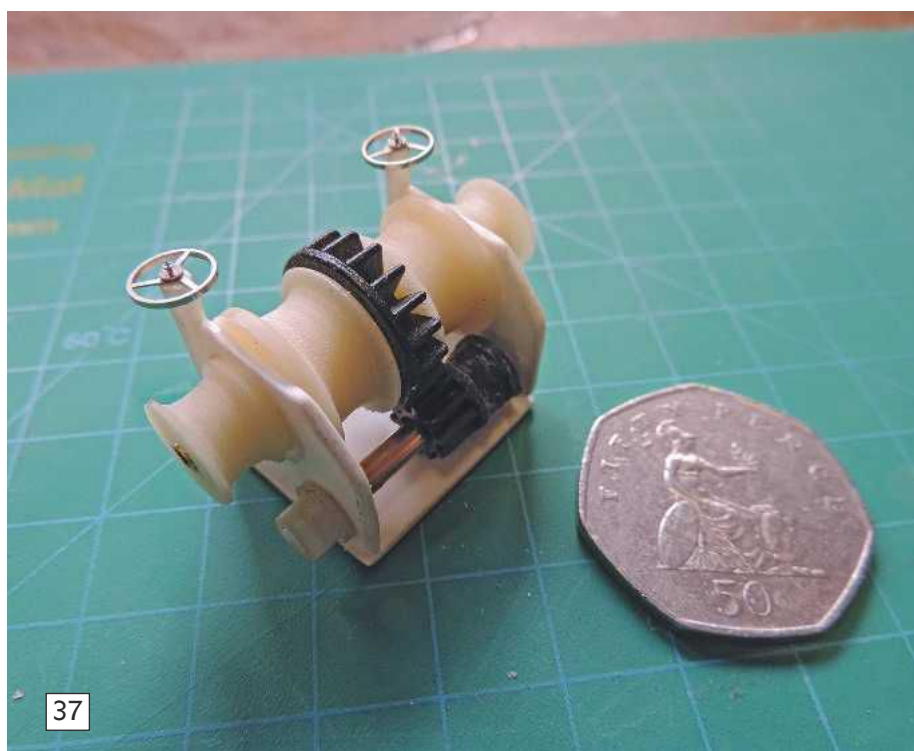
Keel weight

As mentioned earlier, this flat bottomed and quite narrow tug model needed, after the initial trial, some ballast as the LiPo battery weighs rather less than the bulky SLA type. This, as it turned out, was much easier to do than it might sound. Lead in thin sheet pieces can be spread around the flat bottom inside the hull, or an external keel added and the latter option was used here.

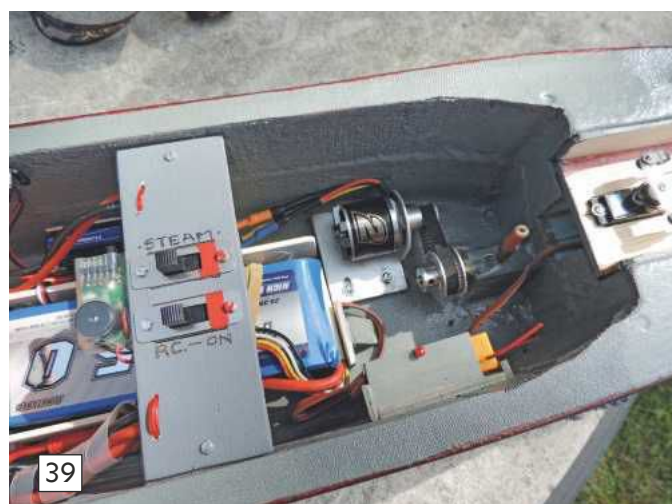
If, and I do say 'if', you are competent with heating Lead, then it can be melted and cast in a former box. Alternatively, if cut into small strips, the Lead can be inserted into a suitably shaped box and encased in slow setting epoxy glue, so making a usable lead weight box. Ripmax used to offer lead shot and I believe it can still be obtained, but not from them, with an alternative of cast iron shot.

You could just fix a brass or steel bar to the external centreline of the hull's bottom or as here, Lead flashing from the local DIY store was used in a custom made shaped styrene box. The size and weight is shown on the plan and it should be around 2.5 pounds (1.14 kg.) maximum. This weight of Lead is not that bulky, but putting it into a useable and discreet form required a little thought.

Suffice to say, the Lead keel box had built into it retaining bolts that passed through the hull and were secured inside and the result?



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Perfect stability and instant return to vertical when leant over. I suppose this is no different from the concept of a model yacht with its extended keel, but in this case, to be honest you don't know it is there when the model is sitting on its stand, **Photo 38**. The point of this all though, is that the so-called metacentric height of any model boat, really needs to be no higher than the waterline and the initial attempt to use a large SLA battery in such a lightweight narrow(ish) flat bottomed hull was a potential recipe for disaster. I can truly say though, that this approach of a small external keel has created one of the most stable models for all weather conditions on the Fishers Green Sailing Club's model boating lake and no one actually notices it as the tug sits on a flat stand with a central groove in it for the keel. Out of sight and out of mind, as it were.

Running gear

This tug, also as an experiment, has a reducing belt drive from the brushless motor

and why? Well, with a 1:2 ratio the motor can run faster, but with increased torque at the propeller. The propshaft had been fitted with a grease point, essential in this instance as it is quite short, level and totally submerged, and so will let in water if not sealed with a grease of some type. Blue Lithium grease is waterproof and not too clingy and is formulated especially for models, being available from Horizon product stockists (they import Spektrum radios) and it comes with a handy injecting device.

An aluminium motor mounting plate was made to fit in the space with elongated screw holes to adjust the belt tension and a pattern is included on the plan. The 2830 brushless motor (28mm dia. and 30mm long) is fitted to the starboard side of the model to counteract the torque of the driveline, **Photo 39**. This motor has a KV rating of 750, so with an 11.1v LiPo battery and the 2:1 belt drive ratio, this means a maximum 4162 rpm at the propeller. Using a three-bladed, 40mm coarse pitch propeller on test in the water, current drawn has been about 2 amps, so with the 5000mAh

11.1v LiPo battery, continuous running for at least 150 minutes will be achieved without using the smoke unit. Please note that with LiPo batteries it is essential to include a low voltage audible alarm to give you, the operator, warning should the cells of the battery be dropping below their safe voltage.

The pulleys and belt came from Motionco, website: www.motionco.co.uk

Motionco on their website have a calculation service for sizes, ratios and belt lengths. A mini metal-gearred ball raced servo was fitted in the tray under the stern deck and connected to the homemade rudder assembly via parallel wire pushrods, **Photo 40**.

The rudder post is 3mm brass rod bent at 90 degrees, filed to a taper and then wrapped with a fold of aluminium cut from a drinks can, all epoxied together to create the tapered shape. The remaining void between the rudder's sides was drip-filled with epoxy glue, having had the bottom of it taped-over to stop



the glue running out. Two small O-rings on the rudder's upright shaft seal the rudder tube, top and bottom.

At the front of the hull is the water based smoke unit, **Photo 41**, from Colin Graham. Its 12 to 24 volt regulator is mounted on an aluminium plate and fixed vertically to the front bulkhead on two 0.25 inch square battens which allow extra space for cooling its FET's.

Sea trial - Take 2!

Having resolved the potentially serious stability problem, the tug really looks the part and handles fantastically well. Steering is very good going ahead, but as is usual with this type of model, a bit sluggish going astern. At full power, the tug looks very scale-like with a good curved water flow along the hull and a nice breaking wave at the bows, **Photos 42 and 43**. The imitation smoke effect was, to be honest, initially a bit sparse and the general consensus was that the inner funnel tube from the steam unit was not long enough. A longer piece was fitted on the same day at the pondside (funny how I had anticipated there might be a problem) and off it went again. Bingo, lots of imitation smoke, just as it should be. The problem is (was) that if the inner funnel tube is too short, the smoke which is really just water vapour, condenses inside the outer funnel casing. The longer tubing allows the vapour to pour out of the top of the funnel, and its top is

just 0.25 inch (6mm) below the outer funnel casing's rim.

Conclusion

A very serviceable, easy to build and much admired model that looks right and is fun to sail. So, how much did it cost in the end and was it an easy build? Not counting the glue, paint, radio, motor, running gear, battery and steam generator, the foam, stockings and floor varnish are cheap plus the use of various bits of haberdashery all undoubtedly kept the cost down. The only parts that really had to

be bought were a sheet of 1/32 inch plywood, a sheet of 3 x 1/8 inch (75 x 3mm) balsawood, 15 handrail stanchions, two light fittings and a pack of PC board spacers. The Blue Foam were offcuts from previous models. Having an external or internal keel for ballast is your choice, but you cannot see the external keel anyway when Rhondda is on the water, nor is it visible when the model is statically displayed on the stand.

The basic tug model cost about £25 which was a bargain - a least for me. So go on, try a foam based model next time.

Have fun - Ron Rees



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Boiler Room

PART Seventy six: **Water**

Richard Simpson's series on model steam plants



Having recently had a look at the various types of oil that we might want to use in our engines (Boiler Room, MB January 2017), I thought it might be an idea to have a look at the water we put

in our boilers. As with oil, it can be easy to overlook the significance of the quality and type of the water we use in them and while we may well be able to use anything we want and get away with it, eventually we will have to live with the results of our decision and the long term reliability of the boiler may be compromised by using the wrong feed supply.

A spot of history

Having spent all my working life on ships at sea as an engineer, I have always been more than aware of the significance of boiler water quality to the performance and reliable operation of a modern marine boiler. Even auxiliary boilers running at comparatively low pressures still demand distillate as a feed water, with the quality being maintained strictly within close tolerances of the many parameters such as chloride content, various treatment chemicals and total dissolved solids, **Photo 1.**

It was therefore a very big surprise a few years ago when I first started to get more interested in model steam plants and learned a bit more about the very early steam ships, to realise that their feed water was originally directly from the sea. The practice at the time, when steam was first used as a marine propulsion medium, was to feed the boiler with raw water from whatever ocean the vessel was sailing in, all simply pumped into the boiler as a total loss system with no thought of condensing the exhaust. Not surprisingly, the build-up of salt and scale was extremely fast and prolific, but then the maintenance routines were arranged to ensure that the solids were removed on a regular basis. Consequently, the main tasks for the early marine steam engineers rotated around regular entering of the boilers to scrape out the salt deposits on the water side of them, as well as the equally regular removal of the soot and clinker from the fire (heating) side. They were able to get away with operating boilers in this way as they

operated at very low pressures and so the adverse chemical effects of salt and scale on the metallurgical properties of the boiler shells were not as severe as they would have been in a high pressure boiler. However, as engines became more powerful and required these higher operating pressures, the boilers became significantly less tolerant of poor quality water, so a clean feed supply and eventually a distillate, with suitable recovery systems became normal.

What does this mean to us?

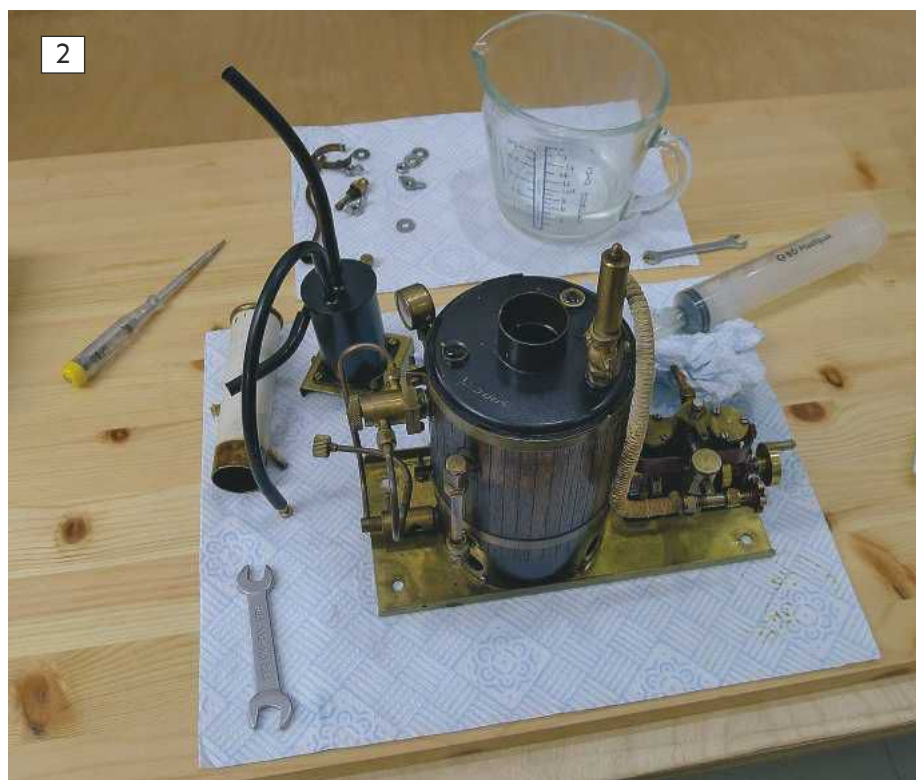
I mentioned the early days of marine steam to demonstrate the fact that basically we can get away with using any sort of water in our boilers. What we have to consider though, is the fact that whatever we put into our boilers as a feed supply will go through the boiling process within the boiler. This means simply that the water (H₂O) will be evaporated and used under pressure, as steam to run the engines. Any impurities in this water will not be evaporated and remain within the boiler. It is then fairly obvious that the greater the

quantities of impurities in the water, the sooner the levels of scale and sludge will become an operational problem that we have to resolve.

Perhaps the most significant problem is the fact that the scale will deposit itself on the inside surfaces of the boiler and then effectively act as insulation which will resist the transfer of heat through the furnace walls and make the boiler less efficient. Basically, you will need more heat, or fuel, to generate the same amount of steam. You will also eventually find that the build-up of sludge and scale in a small boiler will take up more and more of the available water volume. The effect of this is of course that the running duration of the boiler will be reduced, as there is less water available to convert to steam. Even if you decide to ignore all this and accept the fact that you are going to use more fuel and the model won't be on

Photo 1. Modern marine boilers always use condensate nowadays as their feed supply, from usually an evaporator. Even low pressure units such as these exhaust gas boilers need a top quality feed.

Photo 2. Pickling a boiler is not a difficult or expensive task, but the poorer the quality water feed you use, the more frequently you will have to do it. It may be the price you are prepared to pay for using low quality water, but you may also increase the risk of a failure of a boiler mounting and/or fitting.





1



3

Photo 3. There may sometimes be the temptation to use pond water as the water feed source and I've come across those who use it regularly. Personally I would not recommend it, even if it meant you could not use your model on the day.

The compromise?

To ensure the longest possible times between boiler cleaning, we should use the highest possible quality water and that is pure distillate (i.e. distilled water, which is NOT the same as deionised). This is usually available from motor spares suppliers as it is still used in car batteries as an electrolyte, but you will find that a five litre container of distillate could well cost over £5(UK). You may consider this to be money well spent when you balance that against the time and expense of pickling a boiler, but you may also find the five litres does not last very long and when you consider the pickling process is usually not too much of a challenge, or an expense, the £5 might then seem excessive.

At the other end of the scale (pun there!) you could well get away with putting pond water into your boiler, which has to be just about the cheapest and easiest supply to obtain. I am not saying that your steam plant will not work with pond water in it, but would suggest that the build-up of scale and sludge will be excessive and you will soon have the problems mentioned earlier to resolve. Personally, I certainly would not consider using pond water even if this meant not being able to run the model on the day, or to put it another way, would you drink it, **Photo 3?**

How about pure tap water? If you live in an area of particularly soft water and use your

the water for as long, you will still then be left with other problems that you simply cannot disregard, centring mainly on the effects that sludge and scale can have on the boiler's fittings, essential for the safe and efficient operation of it all. The sight glass is very relevant to this, as usually the water connection of the sight glass will be at the bottom of the boiler shell and sitting there it is prone to getting blocked with sludge and scale. If this connection becomes blocked, the glass could easily show water when in fact there is no water in the boiler at all and obviously a situation to be avoided. There is also the danger that scale can form a deposit

on the working parts of the safety valve and even within the pressure gauge, rendering them both unreliable, so it is easy to see that avoidable scale build-up is something to avoid as much as possible.

Consequently, we are all sooner or later going to have to consider cleaning a boiler by the process of pickling as described in Boiler Room No. 61 (Model Boats January 2016), to return it to a clean and reliable state as in **Photo 2**. The frequency with which we have to do this will be directly determined by the quality of the feed water we use in our boilers, so it is easy to see that we have to have a compromise.



Photo 4. The quality of tap water can be greatly improved by the use of a simple domestic water filter as used by many of us to simply improve the quality of the drinking water. An evaporation test will show whether it is worth considering.

boiler infrequently, this may be a possibility, but I would suggest an initial experiment might be worthwhile. Place an amount of the tap water equivalent to the capacity of your boiler into a pan and boil it dry, and you will be left with the same amount of deposit that would be left in your boiler after a run. If the pan looks spotless, I would repeat the process a number of times without cleaning the pan. You may well then decide that the amount of deposit is acceptable, and you are happy to use tap water, but if you are unsure or not happy, then give it a miss. You could try using a simple domestic cartridge type of filter unit to clean the tap water a bit more and improve its quality, **Photo 4**. Some areas of the UK such as West Yorkshire do have particularly soft water supplies, which is precisely why the textile industry was set up there in the first place, but some, such as in Lincolnshire, have quite hard water, which is soon evident by the scale build up you see in or around a domestic kettle after a few months of its use, **Photo 5**. Guess where I live!

For myself, I collect the condensate we recover from our condensing tumble dryer, which is not a perfect distillate, but is evaporated tap water and so significantly cleaner than the ex-mains water. This does come with a degree of lint carried with it, so that is filtered-off by straining the liquid through a piece of linen before storing it ready for boiler use, **Photo 6**. The effectiveness of this simple procedure is clearly evident by the filter after a couple of 'straining's', **Photo 7**.

If you do not have a condensing dryer and you live in an area of hard water, then you are left with either paying for bottled distilled water or accept that more frequent boiler cleaning may be required.

One important word of caution that has to be mentioned here. There is a huge difference between distillate (distilled water), which is nothing more than evaporated and



Photo 5. Hard tap water will soon manifest itself by a build-up of deposits inside, and even outside, a domestic kettle. If you see such deposits, be aware of the consequences and consider the possible alternatives.

condensed water, and deionised water. Deionised water is chemically very different, as it does not have any free ions to conduct electrical energy which is precisely why you may find it used in the cooling systems of heavy electrical plant. A leak will not conduct electrical energy, so it is significantly safer in the event of plant failure. However, please bear in mind that following the natural process of all things to return to the state from which we have modified them, deionised water tries very hard to become ionised again and to do this it will leech ions from any available material it comes in contact with.

Photo 8. I'm sure that one or two 'steaming's' with deionised water will not have a significant detrimental effect on your steam plant, but prolonged use may well lead to corrosion problems with some of the metals.



Photo 6. A simple filter arrangement with a piece of linen cloth. Tumble Dryer condensate will usually contain lint that will collect in your boiler if you use that water in an unfiltered condition.



Photo 7. These are the deposits collected after a single use of the filter.

This is usually a metal, and is why an entire watercooling system may be made from non-metallic materials. If we put deionised water into our boilers it will leech ions from the internal metal surfaces, usually from the solder first, and the boiler will start to corrode. So if you are buying the water from a car spares outlet, please check the bottle says 'Distillate' and not 'Deionised' as in **Photo 8**.

Conclusion

As with so many things, the choice of water is a compromise between the perfect world and the costs involved. The biggest consideration by far is that no matter what water you use, do not let the boiler scale and sludge deposits build-up to a point whereby the operation of it is compromised. Please remember the chemical differences between 'Distilled' and 'Deionised', but as a 'get you out of jail card', Pickling is fairly easy and a not too expensive cleaning operation and certainly preferable to dealing with the possible failure of a boiler mounting, fitting or even the carcase itself.

Chipstead SC Radio Sailing Marblehead GAMES 1

Roger Stollery and Peter Crisp report from a new venue



On the first visit to the Chipstead Sailing Club, its radio sailing members made the sixteen visiting Marblehead skippers from eight clubs very welcome to the first Metropolitan and Southern District interclub GAMES 1 event of the season on the 21st January 2017 (a Saturday). Peter Crisp even greeted everyone individually as they arrived at the entrance to the car park.

Although it had been cold and frosty during the previous few days, Chipstead Lake was not frozen near the launching area, although there was a small area of ice at the far end of the water which soon melted in the bright sunshine. The initial lack of wind gradually built into a light easterly breeze and produced some excellent conditions for racing, despite its variability when blowing through the trees later in the day.

Morning's racing

The race officer was Dave Allinson who was a bit nervous about running his first big event, but he shouldn't have been as together with his team they all handled the racing very well and were able to get ten long windward and leeward races completed before the wind finally died out by mid-afternoon.

Colin Goodman made a good start by winning the first two races and another before lunch, only interrupted by wins by Roger Stollery and John Shorrock in Races 3 and 4. The lunch break was welcomed, giving an opportunity to get warm and enjoy a beef stew and hot drink, laid on especially by the host club.

Afternoon

The assistant race officer, Garven McKie, made several course changes during the afternoon as the wind began to blow more across the lake. John Shorrock started well by winning Race 6, with Races 7 and 8 won by Rob Vice and John Cleave, but the most consistent skipper apart from the winner Colin Goodman, was Hugh McAdoo who finished by winning both the last two races in the lightest of airs.

Conclusion

Overall it was an enjoyable and good-natured day's racing for all those who attended. Special thanks were given by the prizewinners to Dave Allinson, who managed the racing well and organised the team from Chipstead SC Radio Sailing for scoring, observing, course changing etc., as well as making a good photographic record of the event. There is no doubt that this new radio sailing club has fantastic facilities, very well suited to running a big events with their large lake with good access to its banks and the clubhouse, plus excellent launching facilities right in the centre of the facility. Chipstead Sailing Club, Post Code: TN13 2SD,



Above: A frosty day at Chipstead Sailing Club, but the water was clear.



Left: Racing was generally close on the day.

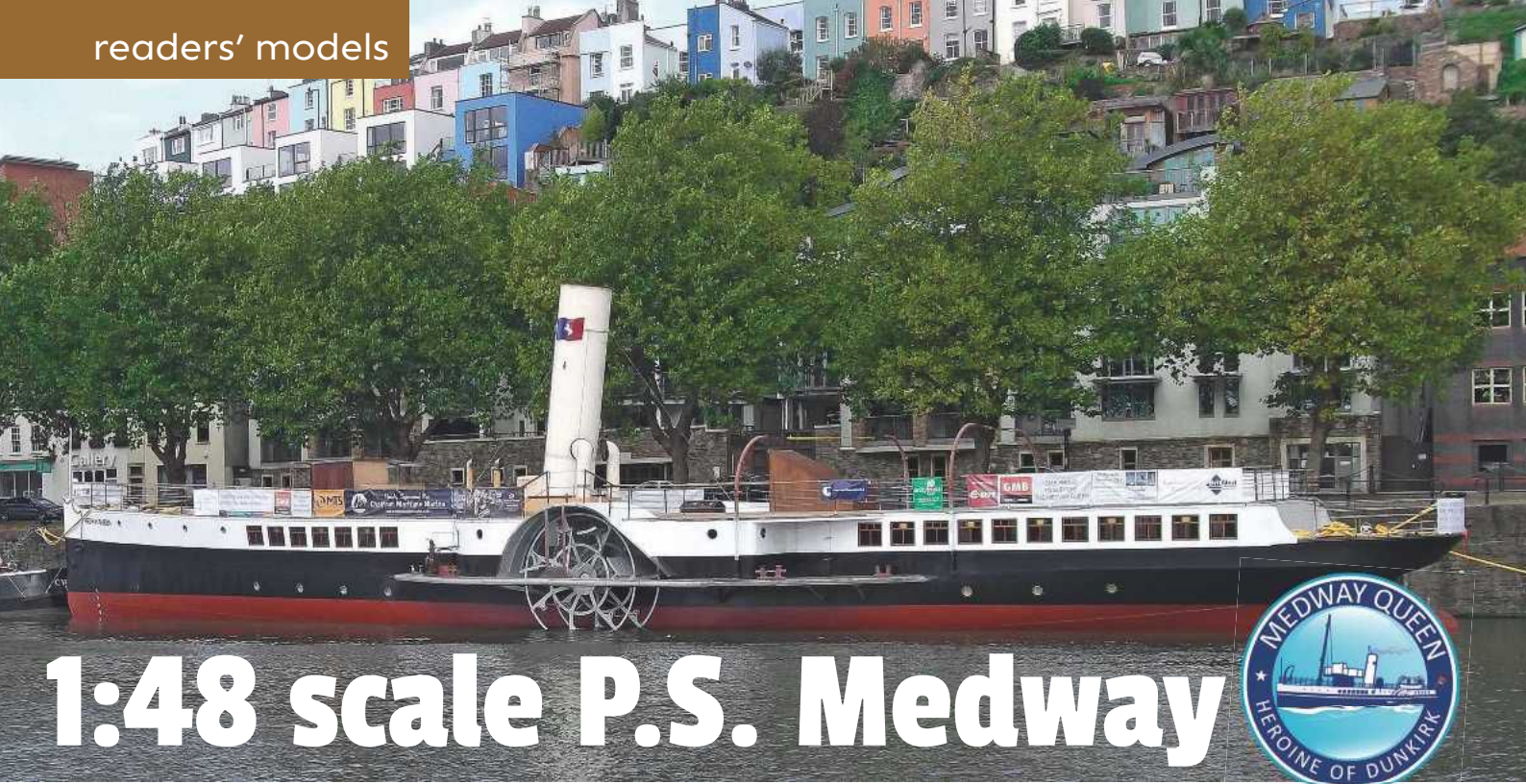
Chipstead, Sevenoaks, Kent.
Website for more club information is:
www.chipsteadsc.org.uk
(All photographs supplied by **John Caruana**)

Results

- 1: Colin Goodman, Coalhouse Fort, QUARK
- 2: Hugh McAdoo, Datchet Water, PRIME NUMBER
- 3: John Shorrock, Datchet Water, QUARK
- 4: Trevor Binks, Eastbourne, PRIME NUMBER
- 5: Rob Vice, Clapham, UPROAR
- 6: Roger Stollery, Guildford, UPROAR
- 7: Martin Crysell, Guildford, PRIME NUMBER
- 8: Dave Andrews, Hampton Court, PRIME NUMBER
- 9: John Cleave, Ryde, SKALPEL
- 10: Martin Shaw, Hampton Court, PRIME NUMBER
- 11: Alan Viney, Guildford, PRIME NUMBER
- 12: Peter Crisp, Chipstead, STARKERS
- 13: Terry Rensch, Datchet Water, QUARK
- 14: Richard Uttley, Emsworth, SLIPPER INDIE
- 15: Mike Stroud, Hampton Court, STARKERS
- 16: David Adam, Woking, PRIME NUMBER

Below: Colin Goodman, on the left, receiving his prize from Dave Allinson.





1:48 scale P.S. Medway

Tony Phipps' 1:48 model

The Paddle Steamer Medway Queen was constructed of plates riveted on frames in the traditional manner by Ailsa of Troon, and she entered service in 1924 between Strood, Chatham, Southend and Herne Bay. Captain Tommy Aldis commanded for her first two seasons and was succeeded by Captain Bob Hayman in 1926, and he remained in command until the outbreak of war in 1939. Special events and excursions added variety and in 1937 the paddle steamer attended the Spithead Naval Review.

With the outbreak of war, Medway Queen was converted for minesweeping and the aft saloon was cut away for the minesweeping gear, windows were plated over and peacetime fittings removed. The bridge was strengthened and covered and she was given pennant number N48. Armament was a 12pdr forward and two machine gun posts. HMS Medway Queen was commissioned in November 1939 and moved to Harwich as an independent ship under the control of FOIC Harwich.

The paddle steamer joined the Tenth Minesweeping Flotilla based at Dover early in 1940, and was involved in Operation Dynamo

which commenced on Sunday 26th May. On their first trip they anchored offshore and collected men from the Dunkirk beaches, air attacks being discouraged by the AA cruiser, HMS Calcutta. On board, the rescued soldiers were fed sandwiches, stew and Navy cocoa! As the Dunkirk evacuation proceeded, Medway Queen settled into a routine with each night filled with noise and danger and the following day spent cleaning and taking on fuel and stores. She made seven trips across the Channel and her crew's estimate of 7000 men rescued and three aircraft destroyed is a good summary of what was achieved.

In July 1940, the flotilla moved to Yarmouth and in August of that year Medway Queen was transferred to the Eighth Flotilla based at North Shields. In January 1943 she was assigned to a training unit at Granton (Edinburgh) where she remained until after the end of WW2.

P.S. Medway Queen was duly refitted by Thornycroft at Southampton for the 1947 sailing season with Captain Leonard Horsham in command. In 1953 she attended the Coronation Review at Spithead just before the start of her usual excursion season. In the following seasons there were many happy days on board, but maintenance

*The rebuilt Medway Queen in Bristol Harbour, 2013.
(Photo courtesy of Richard Halton)*

costs increased and by the end of 1963 her operation became uneconomic and she was withdrawn from service. P. S. Medway Queen was then purchased to be a club and restaurant on the Isle of Wight as the Medway Queen Club, opening for business on Saturday 14th May 1966 and quickly building a good reputation. This club closed in 1974 as running costs overtook income, but it is still fondly remembered on the island and beyond.

The model

Have you ever had one of those presents that was really welcome and appreciated, but then involved commitment to make best use of it? Tony's sister bought him a set of modellers' plans from the Medway Queen Preservation Society (MQPS) and this model is the result. Construction follows the prototype method as closely as you could expect when using plywood at this scale, as illustrated by the photographs. The drawings of P.S. Medway Queen were obtained at the beginning of May 2016 and the first steps taken to assemble the large scale detailed sheets and convert them to 1:48 scale. The

Below: Model frames, templates and profile.



Below: The model's hull being planked.



Below: Model frames and planking - inside view.





Above: The planked promenade deck with cut-outs for superstructure components



Above: The various deck structures in place.



Above: The drive motor, paddle shaft and its bevel gears.



Above: The completed 1:48 scale Medway Queen r/c model.

Right: Bow view of Medway Queen model.

ship's lines were also printed full-size for the model and then the rib profiles marked on 5mm plywood and cut to the correct shapes using a band saw, each frame representing an assembled cross section of the ship at that position. Bow and stern profiles were also scaled, printed and cut from plywood in the same way.

The keel was cut from the same 5mm ply offcut purchased from a local DIY shop and the frames assembled to the keel. Another piece of plywood, 12mm thick, was used to support the hull prior to its plating (planking) to avoid distortion. The 'real' hull had temporary cross bracing to achieve the same result as the strength in a ship like this is actually in the assembled whole structure, including the plating. The model's hull planking is of 1/16 inch three-ply cut in to 0.5 inch wide strips, all glued and pinned to the ribs to create the hull shape and which was then filled and sanded where required. The promenade and poop decks were marked and cut from 2mm three-ply in the same way and temporarily fitted to the hull to check their sizes and shapes. The paddle boxes are also constructed from plywood. Four bushes were turned from 3/8

inches diameter brass rod, drilled with 5mm diameter holes, and fitted into the hull and paddle boxes to support the paddle shaft. This shaft is a length of 5mm brass rod, which was also used to align the bushes as they were secured in place.

The two paddles have been constructed to fit, but minus feathering devices as this would have been an unnecessary complication in a model of this scale and a possible cause of future maintenance problems. Final assembly involved fitting one paddle box to the hull, then inserting the drive shaft from the other side (making sure the drive gear was not forgotten!), inserting the paddle wheel into the box and on to the shaft, and then doing much the same on the other side. It can all be dismantled in-situ, but is not easy.

The promenade deck was planked using wooden coffee stirrers, marked and cut to size as necessary, with a small gap at the deck edge to allow for its removal. The tops of the paddle wheel boxes were also planked, before the promenade deck was marked for the deck fittings and deck structures.

The handrail stanchions are from 1/16 inch (1.5mm) brass rod, cut to size and soldered



as necessary at the handrail joints. They have all been installed such that the main deck can still be removed. Other small fittings have been made on a lathe, with for example, the lifebelts being turned from one inch (25mm) diameter brass rod, and painted. The capstans are also turned from brass.



The lifeboat davits fitted on the paddle box decking and the hull, can pivot so that the boats can be moved out of the way when the deck is removed. The lifeboats themselves are from lengths of 1 x 1.5 inch (25 x 38mm) pieces of wood, suitably marked from a template, rough cut to shape and then hand-sanded. All the detail parts were painted or varnished before fitting.

Above: Bridge view of Medway Queen model

Propulsion

The model is propelled by a 12v electric motor powered by two 6v batteries placed separately in the hull and the r/c system is a 2.4GHz Etronix Pulse (Ref. ET 1110) Tx and Rx, using Futaba S3001 servos.

And P. S. Medway Queen today?

After the closure of the Medway Queen Club, the ship suffered hull damage and became semi-submerged in the River Medina on the Isle of Wight, but in 1984 she was moved back to the River Medway in Kent on a pontoon. The current Medway Queen Preservation Society was formed in 1985 to support this endeavour and duly became owners of this historic vessel.

Following many years of hard work, and some frustration, the society secured the backing of the Heritage Lottery Fund in 2006 and later, the European Regional Development Fund (2010) to rebuild the ship's hull and establish a base and workshop at



Above: Medway Queen in the Albion Dock at Bristol in 2010.

Below: Paddle Boxes are now in Place, November 2011. (Photo courtesy of Richard Halton)



Above: Stern view of Medway Queen model

Gillingham Pier in Kent. The hull project was undertaken at Bristol, it being completed in late-2013. P.S. Medway Queen was then towed back to Kent and is now moored at Gillingham Pier where she can be visited.

The fitting out phase of the restoration process is now taking place with the priority of restoring the saloons for revenue generating functions and then bringing the engine room to a proper and safe working order.

Acknowledgement: The dockyard pictures are taken from the MQPS publication, 'Medway Queen – Rebuilding the Hull'.

Article written by Richard Halton and Tony Phipps



Above: Medway Queen hull is well on its way to completion, May 2011. (Photo courtesy of David Abels)

2017 Medway Queen Open Days

You can visit Medway Queen on Saturdays from Easter to December 2017 at Gillingham Pier, Pier Approach Road, Gillingham. Kent ME7 1RX. Additional financial and practical support are also always welcome. On the Saturday and Sunday of the 2017 Easter Weekend in mid-April, there will be a special Medway Queen 'Review of the Fleet' with model boats displayed on board and in the society workshops. Tony Phipps will be exhibiting this featured model, so please go along and see for yourself.

For current information, please check the website: www.medwayqueen.co.uk.

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Test Bench

Model Boats looks at new products

Attention-Manufacturers & Distributors

● These pages are open to you - your shop window to bring to the attention of our thousands of readers, new products - kits, books, videos, engines, R/C gear, motors, anything that could be of interest to model boat builders. Send your information initially to **Model Boats**

Test Bench, PO Box 9890, Brentwood, CM14 9EF - or ring the Editor on 01277 849927 for more details.

You cannot afford to miss this opportunity!

Dynamite Prophet Sport 35W LiPo AC Charger

With the advent of LiPo batteries and their power to weight advantages over older battery technology, their use has become more common in r/c model boats, obviously including fast electric craft, but increasingly in scale craft. In the case of the latter, LiPo batteries do not usually need to be fast charged as they would for fast electric r/c model boats via the main power output leads, but can be safely charged in a model using the balance lead, albeit at a lower charge rate. After all, we have been charging mobile phone and tablet batteries without putting them in a flame proof bag for many years, with one notable well-known brand name exception in 2016....

This charger, Ref: DYNC2005UK, is ideal for those who use 2s (7.4v) or 3S (11.1v) LiPo batteries in their model boats, particularly as the price for a 5200mAh 7.4v LiPo hard-

case battery identical in size to a standard 7.2v 'buggy' pack can be had nowadays for less £20 from a number of online stores. Please note that 'hard-case' means the cells are encased in a rigid box, with the same footprint as a 7.2v 6 cell buggy pack.

This mains AC powered charger can charge at six different currents from 0.5A to 3.0A. It automatically tells the user by means of flashing LED's and audible beep alerts when the battery being charged has reached 90% of its capacity, giving the user the opportunity to switch it off, or it can be left to continue when it will charge to maximum and automatically stop and switch off when that capacity has been reached. It includes short-circuit, over-current, reverse polarity, low input voltage and over-temperature

Right: Dynamite Prophet Sport 35W LiPo AC Charger

protection, and has an internal cooling fan plus a safety cut-off.

Physical dimensions are:

Length: 110mm

Width: 90mm

Height: 51mm

RRP is £25.99, but it can be purchased from a number of online retailers for under £20. Just add the magic word 'discount' to

the product name when doing a Google search for:

'Dynamite Prophet Sport 35W LiPo AC Charger'

This unit is one of a range of Dynamite chargers offered by Horizon Hobby UK who also market Spektrum r/c equipment. The range includes a similar unit dedicated to NiMH batteries and other more sophisticated 'all dancing' chargers, all at very reasonable prices.

Horizon Hobbies UK website: www.horizonhobby.co.uk

Review by Paul Freshney



British Warships of the Second World War

Detailed in the original builders' plans

Written by John Roberts. Hardback, 176 pages, 296 x 257mm, over 100 shipbuilders' drawings in black & white, colour and 'blue print'. ISBN: 9781473890688, price (rrp) £35. Published by Seaforth Publishing, an imprint of Pen & Sword Books Limited, 47 Church Street, Barnsley, South Yorkshire, S70 2AS. Tel: 01226 734222, website: www.seaforthpublishing.com. Available direct from the publisher or through the usual retail outlets.

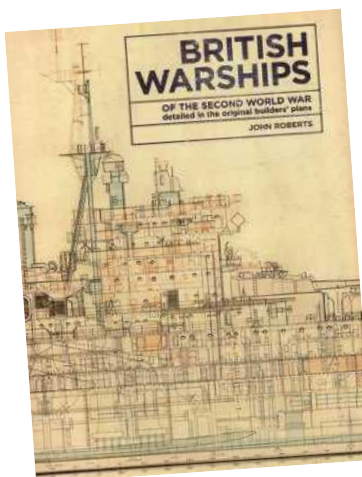
The Ship's Plans collection at the National Maritime Museum

is one of the world's largest technical archives, containing hundreds of thousands of original shipbuilder's drawings.

This volume reproduces a representative selection of these drawings, covering all the main types of warship with which the Royal Navy fought the Second World War, from battleships and aircraft carriers, through cruisers, destroyers, submarines, escorts and minelayers to examples of the vast array of new specialised types required for the conflict.

Concentrating on 'as fitted' draughts which show the vessels as they actually entered service, with the majority reproduced for the first time in full colour, this new edition offers an unprecedented wealth of detail

on some of the most famous warships of their day. It also shows how equipment and fittings were modified over time,



since many of the plans are annotated with 'alterations and additions'. The accompanying text and lengthy captions by the author, John Roberts, an acknowledged expert in the field, provides insight into the warship design process itself, and explains for the benefit of ship modellers and technical historians, which types of plan contain the most valuable information.

With all the drawings reproduced as large as possible, including one four-page double gate fold of HMS Ark Royal, this excellent book is a unique visual record of British naval shipbuilding at the zenith of its success.

Book Review by John Deamer



Fairey Huntsman 31 - Finished model.

Fairey Huntsman 31

New 1:16 scale (23 inch) Liteply kit from SLEC

During 2016, the well-known model company SLEC Ltd. took over the manufacture and distribution of the range of boat kits formerly produced by The Vintage Model Boat Company. These are all-plywood kits which are typically based on those originally sold in the 1950's and 1960's and which need some minor alterations to the original construction to accommodate modern electric power and radio control. SLEC's first new offering under this banner requires no such modifications as it's the 1:16 scale model of the Fairey Huntsman 31 which was published as a plan and article in *Model Boats*, January and February 2016.

The model is 590mm (approx. 23 inches) long and is powered by a 28mm brushless motor, using a 2S or 3S LiPo battery pack and a 30A speed controller. Two channel

radio control is required and the model is suitable for anyone who has already built one or two plywood models and is familiar with the materials and techniques involved.

All of the plywood parts are cut to exact shape using a CNC router, or laser-cut for the thinnest plywood, e.g. the window frames. All of the necessary strip wood is included as well as pre-cut window and windscreen glazing. There are cut parts to

make up a substantial plywood stand, suitable for both building the model on and using as a carrying cradle when finished, and also for a special jig to hold the pulpit rail and supports while they are soldered together.

The instructions come in two separate leaflets, one containing a sequence of numbered and labelled colour photographs of the building process which ties in with the written description of the

build in the second leaflet. There are full-size drawings of the pulpit rail and window frames and a half-scale (A3) drawing of the plan and side elevations of the finished model to enable the builder to position the various fittings correctly. Finally, the contents include vac-formed styrene seats, brass rod for the pulpit rail, GRP rod for the handrails and waterslide transfers for the instruments and the Fairey logo.

Other items are required to finish the model such as the motor, mount, propshaft and its tube, coupling and rudder assembly. For modellers who don't already have these, suitable items are available online from SLEC's website and a dedicated fittings kit can also be purchased. Glue and paints will also be required.

The kit comes packed in a strong polythene sleeve which is wrapped in corrugated card for posting. Price in the UK is £78.40 plus carriage and the kit, Ref: PR814, is available only direct from SLEC at:

www.slecuk.com/balsa-wood/Boat-Kits.html

Review by Dave Milbourn



Left: Fairey Huntsman 31 - Interior.



Right: Fairey Huntsman 31 - Kit parts.

Maritime Royalty - The Queen Mary and the Cunard Queens

Written by William H. Miller. Softback, 96 pages, 250 x 228mm, over 150 photographs in black & white and colour ISBN-13: 9781781555675. Price (RRP) £19.99. Published by Fonthill Media Limited, Millview, Toadsmoor Road, Stroud, GL5 2TB, website: www.fonthillmedia.com. Available direct from the publisher or through the usual retail outlets.

Cunard, the most famous name in shipping, began 177 years ago in 1840 with paddlewheel steamers, but grew, progressed and created some of the largest, fastest and most

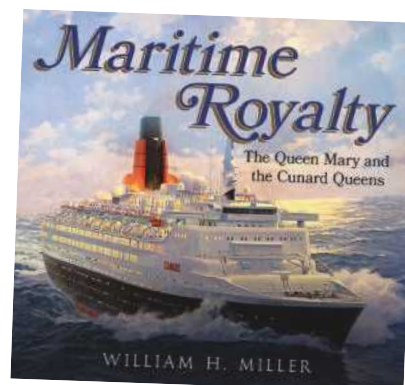
luxurious liners of their time. 2016 marked the eightieth anniversary of the maiden voyage of one of the greatest ocean liners of all, the Queen Mary. Constructed by John Brown & Company on the River Clyde in the 1930's and sailing until 1967, the Queen Mary serves today as a museum and hotel in Southern California, USA.

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Maritime Royalty delves into

the Queen Mary's illustrious career, including her wartime service and historic troop carrying Atlantic runs. The book also examines her running mate, RMS Queen Elizabeth, as well as the subsequent Queens, the QE2 and the present-day Queen Mary 2, Queen Victoria and Queen Elizabeth. With over 150 images and numerous firsthand accounts from those who sailed on these magnificent ocean liners, this book serves as a salute to the Queen Mary together with the other great Queens of Cunard.

Being an acknowledged expert in his field and having written over 80 books on passenger liners, the author, Bill Miller aka 'Mr. Ocean Liner' has produced this superbly



illustrated maritime history which I'm convinced will be a 'must-have' for anyone with an interest in ships from this golden era of passenger travel.

Book Review by John Deamer



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1:700 Scale Naval Dioramas **PART 1**

Right: Operation Halberd 1942 featured the British cruisers Sheffield, Edinburgh and Kenya. These are 1:700 scale models and show what can be achieved just by working on a kitchen table.



Chris Drage
explains how
to build these
miniatures



Small Beginnings?

In 2002, when returning to model making after many years in recess, I decided that 1:700 scale waterline ship models would prove an interesting challenge. However, as soon as I had finished the first Skywave kit it was quite obvious something was missing, namely the ship's natural habitat of the sea as a waterline model without any water looks very strange, at least to me. To remedy this, the first step was to choose a model that could comfortably be built without too much skill or hassle. Using various references, it became clear that converting a Skywave Buckley Class destroyer kit to its Royal Navy counterpart known as the Captain Class frigate, was relatively simple. Further research revealed that these warships were active in the Atlantic on anti-submarine duties in WW2 and that HMS Aylmer had rammed U-1051 and so now a perfect subject had been found, particularly as a Hasegawa U-boat kit was to hand as well.

Photo 1. HMS Aylmer (Captain Class Frigate) ramming U-1051

Using a piece of 350 x 200 x 20mm MDF board as a base, work began preparing a seascape. Referring to photos and previous

Photo 1. HMS Aylmer (a Captain Class frigate) ramming U-1051 on 26th January 1945. Subsequent repairs took place in Gladstone Dock at Liverpool. This diorama includes a modified Skywave Buckley Class destroyer kit and the U-boat is from Hasegawa.

experience of what a 'slight' sea was like, the idea of using crumpled baking foil and partially smoothing it out and gluing it to the base board came to mind. Somewhat surprisingly as well, it all looked reasonably realistic. Painting it with acrylic paints meant that the aim was also to show an oil slick, as U-1051 had been forced to the surface with depth charges on the otherwise blue, green and grey Atlantic water.

The next problem was HMS Aylmer's wake, because unless you have had a lot of experience modelling vessels at different speeds and through different seas, trying to create a realistic wake is quite tricky. If you make the water in the wake and/or at the bow wave look too active, the waterline model now looks as though it's a speed boat. I must confess that the final result on this early attempt at a diorama is not as convincing as on later efforts, but that is part of the joy

of our hobby, namely trying to do better with each successive model. Anyway, you have to start somewhere, and a combination of white acrylic paint blended with the sea colour provided a reasonable effect.

What about the 'pointy' bits where the water is being erupted upwards? Acrylic paints do not provide an answer for this, but toothpaste does. This is a surprisingly flexible medium that can be worked into tiny peaks and splashes very effectively, as well as smelling nice in the process. Assuming you are using white toothpaste, it won't stay 'in shape' forever in its raw form, but a spray of gloss varnish over the whole of the seascape does seem to keep it in place and prevents it from yellowing over time. Overall, it gives the diorama a distinct 'ring of confidence (!)', which is what toothpaste is supposed to do, so we are told.

Photo 2. HMS Affleck

Having completed the basic HMS Aylmer diorama, I wanted to depict the second kit as the sister vessel HMS Affleck depth-charging



Photo 2. HMS Affleck, February 1944 (a Captain Class frigate) during her memorable patrol with the First Support Group attacking U-91 (underwater) with depth charges. This is a modified Skywave Buckley Class destroyer kit, 1:700 scale.

an underwater U-boat. The construction of the base and seascape was a re-run of the first diorama, but how to create a realistic depth charge explosion proved somewhat difficult. The idea of using wire to create a framework on which to glue cotton wool seemed a good plan. With the cotton wool teased-out to represent the explosion of water it did not look too bad, but I wish the research had been done more carefully, as the net result was a very dirty looking depth charge explosion. This would not be the case in an open and deep ocean, only occurring in very shallow water. This error was therefore also part of my somewhat steep learning curve and not being confident about it all, a calm seascape seemed a better option, at least this time around.



Photos 3a & 3b - HMS Penelope

Still lacking the confidence to try a rough open-water seascape, I played safe and took on the challenge of building a recently newly released resin and etched brass kit. This was the White Ensign Models' 1:700 HMS

Penelope in her pre-WW2 appearance. Once again, I opted for a quiet seascape, namely a harbour scene with HMS Penelope at anchor with lots of action as small craft attended her. This cruiser became fondly known as HMS Pepperpot, due to the shell damage she received at various times during WW2 and in

particular at Malta.

Diorama building does allow you to adapt parts of a kit and place them off the model (warship) into a suitable environment and this enabled an opportunity to model the cruiser's scout plane on the water, taxiing to the warship's side to be recovered by the onboard crane. This time I made sure that the wake of the passing small craft was not overdone, giving this vessel a more realistic speed appearance. However, the wake of the seaplane as it appears is very much as it has just landed rather than when taxiing to the warship.

Photo 3a 3b. HMS Penelope at anchor in Scapa Flow, 1938, and about to recover her scout plane. This is a White Ensign Models kit and the drifters are modified from a Skywave Tugger Set, all to 1:700 scale.



Conclusion

As you can see from these three early attempts at the dioramas briefly described here, they were all part of the learning curve. This perhaps explains why us 'plastic kit' modellers often produce more individual models and/or dioramas than an r/c scale boat enthusiast for example, because in many cases we only have one chance to get it all right and the building timescale will often be much shorter, hence more models!

References:

Skywave kits are available from: Hattons, website: www.hattons.co.uk or amazon: www.amazon.co.uk.
Hasegawa kits are available from Antics, website: www.anticsonline.co.uk.
 U-boat kit, £5.99; Tugger Set, £5.99.
HMS Penelope, \$54.00, was from the White Ensign Models (WEM) website: www.whiteensignmodels.com.
Acrylic paints are artist's acrylics available from most art retailers.
Toothpaste is COLGATE!
Varnish is Tamiya gloss varnish
Paints are Humbrol enamels and/or WEM Colour Coat enamels

Mooring Post



Glynn Guest with advice and tips for modellers



Simple jigs

Above: A simple jig makes soldering such intricate parts so much easier and here is one for a lattice crane jib.

When soldering things together you often find yourself wishing for an extra hand or two. Keeping the two items to be joined together whilst wielding the hot soldering iron and applying the solder to the joint often extracts the odd expletive, even from me! Commercially available 'Extra Hands' are available and can do a good job when two small items, such as wires, need to be joined. They are however less useful when you are trying to solder up a crane jib or a lattice mast from brass rod or wire. There are other ways and materials to make these items, but unless the scale is large enough, metal is probably the best way to

Below: The final result - a lattice crane jib.



make something that does not look 'over-heavy' yet is robust enough for a working model.

Years of making rubber powered aeroplane models with fuselages made from a tissue covered balsawood strip framework gave me an idea when faced with building my first lattice mast for a model boat. The balsawood strips would be pinned down to a flat board whilst the strips were glued into place and when dry, the frames could be unpinned and the fuselage assembled. Now you are unlikely to be able to drive pins through metal, but a few can be placed either side of a length of rod or wire to keep it in place whilst soldering.

My usual technique is to draw the outline of the item on a piece of 'soft-board', this is the material often used for pin boards. Come to think of it cork, also used for pin boards, would be equally suitable. What you need is something flat and easy to push pins into, yet will hold them firmly and able to resist the heat of a soldering iron.

The rod or wire is then cut to the lengths required, placed in the appropriate places and held in with pins. Provided the joint areas are clean, perhaps with a little dab of flux, application of the iron and solder quickly makes a neat soldered joint with nothing having moved.

If a joint is re-melted when making a new one nearby, then the pins should hold the parts together whilst it re-solidifies. This avoids the problem of your carefully made assembly collapsing as the final soldered joint is being made. Using small crocodile clips on the existing soldered parts will also mean that the heat generated in the next section is dispersed, before the critical temperature is reached.

So, in summary, as Dave Wooley has expounded numerous times, a jig can make life so much easier for these types of project.



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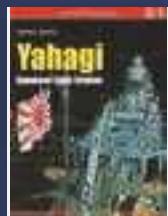
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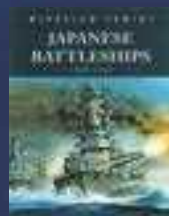
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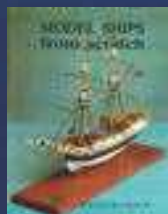
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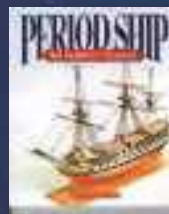
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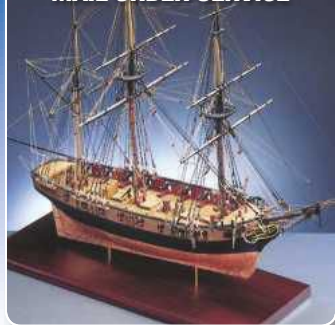
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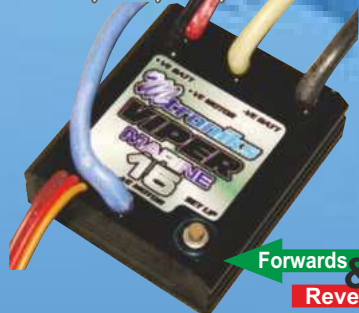
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