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JUNE 2012 ISSUE

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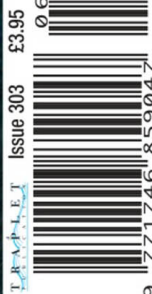
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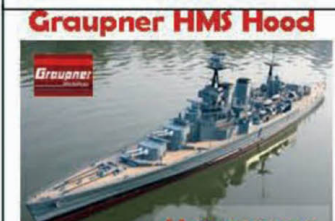
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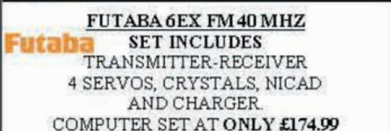
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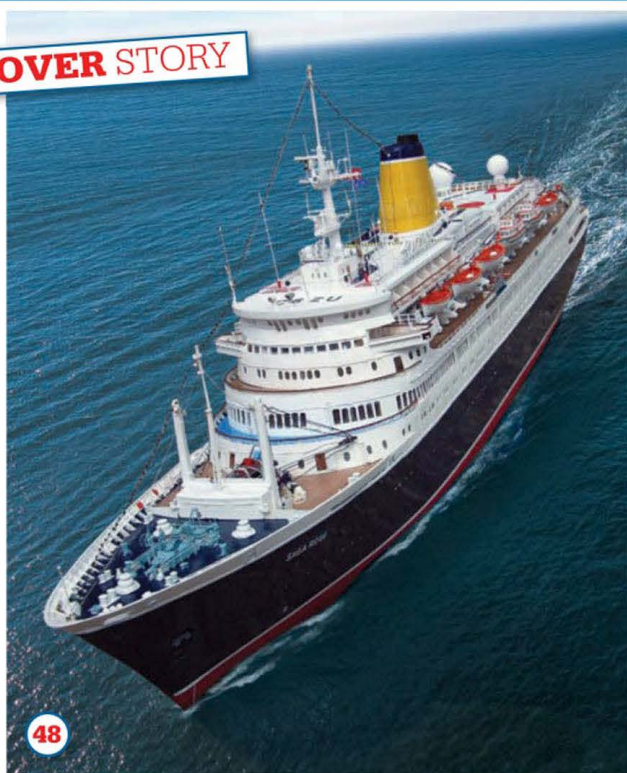
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JUNE 2012 – ISSUE 303

COVER STORY



COVER STORY SAGA ROSE

The inspiration to build a model usually starts with some personal connection with the vessel. In this case the builder and author of this article has spent many happy years with his wife cruising on the cruise ship Saga Rose. When the ship had reached the end of her useful life what better tribute could be made than to build a model of her reminding the author and his wife of the many delightful cruises they had onboard together. The model took over three years to build and as we have said in MMI before the only economic and practical way of preserving a full size ship is in model form. The front cover picture is of the model NOT of the full size ship!

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MESSAGE FROM THE BRIDGE

GREETINGS ALL!

I'm not sure if fellow modellers from around the world suffer from the British tradition of spring cleaning? This basically is clearing out and cleaning, I have been nagged by Mrs S to spring clean my office, as space for storage was basically zero! I have spent most of the day clearing out piles of paperwork and a vast amount of maritime manufacturers' catalogues going back some 10 years and totally out of date. It does bring home the point how technology has slowly crept up on us now as if you are looking for a part, fitting or kit you simply search on the Internet and if they are available the exact up to date cost is known, if they are in stock and in many cases it can be ordered and delivered the next day! Gone are the days of drooling for hours over a large catalogue with outdated prices. The cost of these sometimes very large publications must have been excessive and reflected in the cost of the product BUT have any costs gone down...? I think not. Yes, I know there are readers who do not have or even want to



EDITORIAL CONTACT

MMI generally publishes commissioned articles, but will consider other contributions including news items and factual articles. It is important that contact is made with the editor before any material is written, as duplication of items may result in articles being rejected.

Prospective contributors can email or write for a copy of the MMI Notes for Contributors via Traplet Publications Ltd. Any other Editorial queries can be made by telephone to 01749 347172 during normal office hours.

Barrie Stevens

know about these new modern machines but like the motor car and mobile telephone, they will soon become part of normal life in the future. Even here at MMI you can now have a paperless downloadable copy of the magazine delivered electronically on the date of publication!

Oops I'm ranting on, this month we have another card model of a Clyde Puffer, a very popular and much loved craft – yet another project to add to the pile of other models to make! From feedback at shows these simple card models are proving quite popular

especially with some of the youngsters, which we must encourage. Some other articles of interest include the mysteries of sailing a Square Rigger, explained by Nev Wade and the build of the now retired cruise ship Saga Rose is an impressive model. The Feature Plan last month was of a Swedish Visby class Corvette, HMS Helsingborg – please note that even though it is known as HMS it is a Swedish warship not a British warship, sometimes they are referred to as HSwMS – 'His Swedish Majesty's Ship'.

Have a good month,

Barrie Stevens
MMI

LEFT: Lucinda the friendly Dragon from Weston super Mare overseeing activities on the undercover outside pond at the South West Model Engineering Exhibition – see Meeting Point page 60



**CHECK OUT
PAGE 67 FOR
OUR LATEST
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MARINE modelling INTERNATIONAL

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MASTHEAD

THE LATEST NEWS AND EVENT INFORMATION OF INTEREST TO THE MARITIME MODELLER

HER MAJESTY THE QUEEN REOPENED THE CUTTY SARK ON 25TH APRIL

Following a major six-year refit helped with £25 million from the Heritage Lottery Fund and a public appeal, Her Majesty the Queen accompanied by His Royal Highness The Duke of Edinburgh officially opened Cutty Sark – the world's last surviving tea clipper. Following her completion the ship will come under the operational management of Royal Museums Greenwich.

On 25th June 1957 Her Majesty opened Cutty Sark to the public for the first time whilst HRH Duke of Edinburgh, has been President of the Cutty Sark Trust since 1951. The restoration progress was hindered by a fire but in true British spirit the fire damage was repaired – this was one of the most complex conservation projects ever undertaken on an historic ship. The ship has been raised 3 metres to allow the public to view the ship from below.

Launched in 1869 from Dumbarton, Scotland, Cutty Sark visited most major ports around the world. She carried cargo ranging from the finest teas to gunpowder, and from whiskey to buffalo horns. Cutty Sark made her name as the fastest ship of her era during her time in the wool trade. Many of the tea clippers that sailed the China Seas during the nineteenth century lasted for only a few years and only seven saw the twentieth century. By the mid-1920s Cutty Sark was the only one still afloat and from 1938 became a training ship for the Incorporated Thames Training College at Greenhithe.

Tickets to Cutty Sark can be purchased online at www.rmg.co.uk/cuttysark or Tel: 020 8858 2698

THAMES DIAMOND JUBILEE PAGEANT – 3RD JUNE 2012

Final arrangements have now been made for the biggest pageant on the River Thames with over 1000 craft involved. The parade will be led by Her Majesty the Queen in the Royal Barge. The banks of the River Thames will be lined with 1 million revellers eager to watch this maritime spectacular to commemorate the Queen's Diamond Jubilee. There will be a media frenzy with worldwide TV and radio coverage, for further information visit

www.thamesdiamondjubileepageant.org



MODEL WINGS & WHEELS SPECTACULAR – 23RD & 24TH JUNE 2012

This long-standing event held at North Weald Airfield, Nr Epping, Essex has been held for the past 26 years. The event is primarily aimed for model aircraft but the site has a good following of model boating with a dedicated marquee and a massive 40' square pool for operational model craft. Other models are catered for including cars, trucks and tanks. With on site camping, a massive modellers Bring and Buy, Saturday evening entertainment and much, much more it is a show not to be missed.

For further details visit www.wingsnwhheels.net or call +44 (0) 1242 604126.

SHEFFIELD SHIP MODEL SOCIETY

Unfortunately the 75th Anniversary Open Day advertised for 19th August has had to be cancelled.

TALL SHIPS RACE

The full size Tall Ships Spectacular planned to be held in Falmouth, Cornwall next year (2013) has been put back one year to 21st-24th August 2014. **NMI**

DIARY DATES

WHAT'S ON, WHERE AND WHEN?

Event Dates for your Diary

If you know of any confirmed Maritime related events and you would like us to include them please let us know, by email: mmi@traplet.com or post to The MMI Editor, PO Box 4239, Shepton Mallet, BA4 9AQ. We need Date/Venue/Organiser/who to contact, an Email/Website address, telephone number, post code would be useful for Sat Nav's. A full listing of events for the year can be found on www.marinemodelmagazine.com

JUNE 2012

MMI DIARY DATES

JUNE 3

The East Midlands Model Lifeboat Day 2012

King Lear Model Boat Club will be hosting this event. All Lifeboaters welcome. We have a jetty and slipway for ease of access. There is parking and picnic facilities at Watermead Country Park, Leicestershire, LE7 1PD. There is a £2.50 entrance fee payable to an unmanned machine, so having the correct change is required. Further information from Marie Burdett, Tel: 0116 2613959 or Email: kinglearmbc@ntlworld.com Website: www.kinglearmmodelboatclub.co.uk

JUNE 3

Warship/Navy Day

Balne Moor MBC, Kingfisher Pond, Start 1030. Refreshments. Contact John Pollitt, Tel: 01977 645696

JUNE 3

Cleethorpes Boating Lake Model Boat Association

We will be holding our annual Sailing and Display Day. Members will be sailing their boats on Cleethorpes Boating Lake and model boats will be on display in the Cleethorpes Discovery Centre throughout the day – Admission is free. For more information visit our website – www.cleethorpesmba.co.uk

JUNE 3

Dolphin Model Boat Club

All meetings are at Orpington Pond just off of Kent Road by the A224 Cray Avenue BR5 4. 10.00 Start. There will be a £1.50 charge per boat for any non club members. Sorry no I/C or petrol boats. There is off road parking on club days but no food or toilet facilities. Web: www.dolphinmodelboatclub.com Email: dolphinmodelboatclub@live.co.uk or Margaret, 01689 834896

JUNE 9/10

The Northern Model Boat Show (CADMA)

South Yorkshire Aircraft Museum, Dakota Way, Airborne Road, Doncaster DN4 5EP. Two shows for the price of one! 10 am – 4.30 pm both days. Contact Bryan Smith, Email: bryansmith491@aol.com Tel: 01909 564385

JUNE 9/10

Alfold Charity Model Boat Show

Springbok Estate, Alfold, Nr. Cranleigh, Surrey GU6 8EX. 10.30 to 16.30 each day. Bring & Buy, trade stands plus many exhibitors and on water displays. Contact Trevor Goacher, Tel: 01403 752555 (office hours) or Email: t.goacher@mswmsociety.org.uk

JUNE 10

6th Annual Scottish Tug-in, Hosted by Glasgow Richmond MBC

11 am to 4.30 pm at Richmond Park, Glasgow (opposite Shawfield Stadium). Visit the only tug towing event in Scotland, see our extensive harbour system. Car parking is next to the pond side.

Refreshments available. Come along and join in the fun. All enquiries to the club secretary Colin Miller, Mobile: 07719568539 or the club Email: glasgow.richmond@gmail.com Directions are on the website: www.glasgow.richmondmbc.co.uk

JUNE 16/17

Pro/AM Tug Towing

Balne Moor MBC, Kingfisher Pond. Start 10.30. MMM in attendance. Refreshments. Contact John Pollitt, Tel: 01977 645696

JUNE 17

Southend Model Power Boat Club Summer Open Fun Day

Southchurch Park, just off the sea front between Southend and Thorpe Bay. Start 10.30 am. Contact our Chairman Terry Moffat for further information on 01702 463450. Website: www.smpb.co.uk

JUNE 17

Edinburgh Model Boat Club

Fast Electric Racing Team. Contact Tom Fraser for details: 0131 66511

JUNE 23/24

Wings & Wheels Model Spectacular – 26th Year

North Weald Airfield, Epping, Essex CM16 6AR. Displays include planes, helicopters, boats, trucks, tanks, cars, Daleks and much more! Traders and the biggest Bring & Buy meet! Tel: 01242 604126. Web: www.wingsnwheels.net Email: admin@wingsnwheels.net

JUNE 23/24

The International Model Lifeboat Rally

Etherow Country Park, George Street, Compstall, Stockport SK6 5JD. 10.00 to 17.00 both days. Further info contact Chris Guttridge, Tel: 0161 406 0932. Email: chrisy.c7@googlemail.com or visit the Website: www.internationalmodellifeboatrally.org.uk

JUNE 24

Kirklees Model Boat Club Steam Convention to include Mountfleet Models Open Day

Prize for best Mountfleet Model. Location Wilton Park, Bradford Road, Birstall, Batley WF17 8JH. Start time 10 am until 4 pm. Valid paperwork for any steam model will be required. Refreshments available. Any further information contact Stan Reffin on 0113 2676790 after 6 pm or via the Club website at www.kirkleesmodelboatclub.org.uk

JUNE 24

Dolphin Model Boat Club

All meetings are at Orpington Pond just off of Kent Road by the A224 Cray Avenue BR5 4. 10.00 start. There will be a £1.50 charge per boat for any non club members. Sorry no I/C or petrol boats. There is off road parking on club days but no food or toilet facilities. Web: www.dolphinmodelboatclub.com/ Email: dolphinmodelboatclub@live.co.uk or Margaret, 01689 834896 **MMI**



SAIL FREE

CHRIS JACKSON LOOKS AT A NEW 'CLASSIC J' STYLE BOAT AND SUITABLE WINCHES

AUTHOR: CHRIS JACKSON  GREAT BRITAIN
chris.jackson43@btinternet.com

There have always been a number of 'one-design' projects about in the radio controlled model sailboat world, and of course they all depend on a reliable production source for their success. By far the most popular numerically has been the Soling produced in the USA by Victor Model Products, a modestly priced classic style of hull of 39" length which has broad appeal across the spectrum from casual sailor to serious competitor. Other classes have been heavily promoted for a short time but have fallen by the wayside for one reason or another. There are others which have never tried to overstretch their local market but gradually grown over the years, the Fiesta being a good example. On the other side of the world, New Zealand, the Canterbury J was first developed by the club in the South Island city of Christchurch in the Canterbury region to allow local skippers to sail during the months when their local lake suffered severe weed problems which made the use of deep keel modern classes impossible. It was based on the lines of Ranger and had an overall length of 48", displacement of 14 lb, draft a modest 8", sail area of 900 sq in and total height from keel to masthead of 72" – a compact boat for general handling as compared to the much larger American J class boats. More recently a builder has been moulding these hulls in the USA and another set of moulds was imported into Wales where something around fifty hulls and ballasts have been produced. This story has now moved on!

THE LATEST CANTERBURY J – FROM NOTTINGHAM

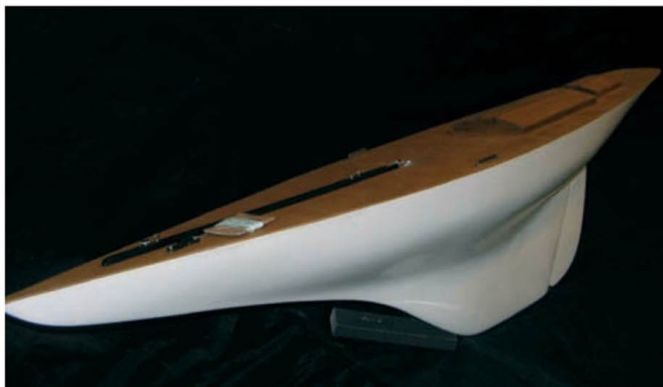
When Alan Horne purchased the Canterbury J approved moulds for the J Class from their earlier owner in Wales who was retiring from production his intention was always to develop the model into something that would have a broader appeal and this development is now almost complete. Having purchased the moulds for the hull, the lead ballast (which on the original design bolts under the hull to complete the shape of the keel) and the trim weight he produced some test mouldings but felt that with some modifications he could up the quality and completeness of the finished product. After seeking specialist advice it became apparent that he would only be able to produce a product to the quality that he was looking for by making a new mould. At the same time one of his local club's prominent yachting members suggested that improvements could be made if the ballast weight were to be fitted inside the hull rather than being bolted to the bottom of the hull.

Making a mould is not a simple or quick task but he has now created a new two-piece mould, which is for the full shaped hull and into which the old ballast weight is a snug fit. For various reasons it has been possible to retain the original underwater volume and thus keep the new hulls identical in displacement and drag to the older ones. The overall quality is significantly better than the old arrangement as no fairing of the hull to ballast joint is required and the hull has met with some very positive comments from those with experience in this area. The new hull has the same general dimensions as the old hull (with the lead bolted up) and every effort has been made to ensure that there is no sailing advantage to the new arrangement but the build is much simpler and should be much better for novice builders or those with only limited model building experience.

As a novice model yacht builder himself Alan has considerable sympathy for those who have not built a model yacht before and who lack the confidence to commit their cash to something that

A number of American Canterbury J boats with builder Hans Berger on the right. Note the lead line on the lower hull of the white hull in the foreground

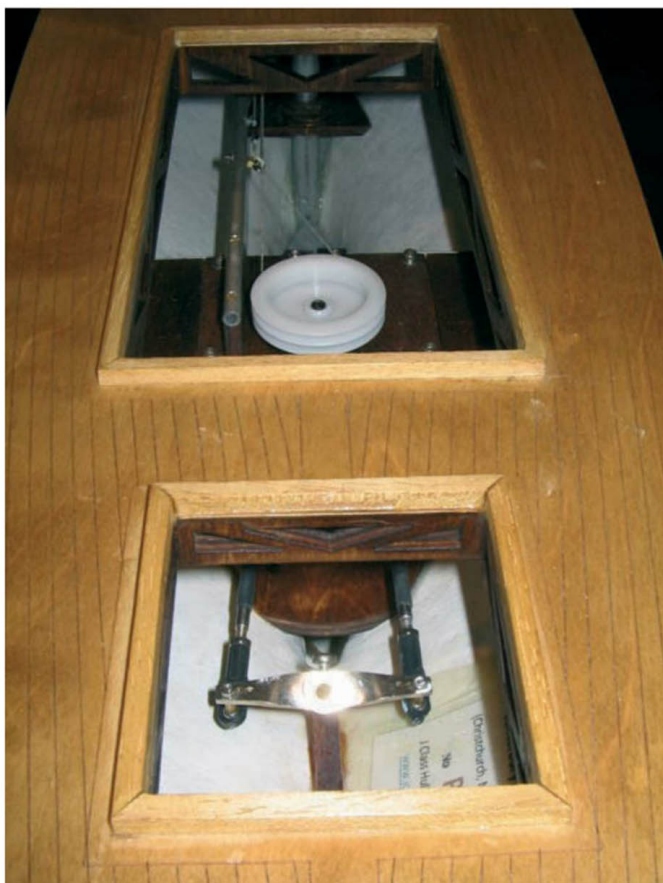




The prototype Nottingham built J showing the single colour hull and keel moulding

they might not be able to complete so he has started to create a number of additional 'packages' that the builder can purchase, with extensive instructions and photos to help them along. The experienced builder can purchase the hull only, or hull with ballast weight and then commence to build with his own materials and this is likely to be the cheapest approach. The novice can purchase the hull and ballast weights and additional rudder packages, internal woodwork and deck packages, sufficient to take him up to deck level. The expectation is that he will be able to produce a finished product that looks every bit as good as the experienced builder.

The current situation is that the wood packages are complete, including a laser etched deck but note that the production decks are very slightly different to the photos, and the builder has finished a full set of instructions that have been published on his website. The instructions include a number of photos, which might give the reader a better idea of how the parts work together. As this file is available free of charge to read it may help possible newcomers



A view from the stern of the two hatches used on the prototype. Not mandatory as we understand it but they do allow easy access



The latest development in the two-colour hull, with different gel coat layout available at slight extra cost

considering buying a hull to understand the build process prior to making a final decision.

The original idea was to produce the hulls in a base white gel, expecting keen builders to paint a second contrast colour, if required, either above or below the waterline. Alan Horne has also been able to develop a two-tone hull. They look very pretty and although slightly more expensive, may well prove slightly lighter as no painting is required, the build is cleaner and also perhaps less expensive overall. So far he has produced (and sold) blue over white and black over white (referred to as 'Lionheart') and he is going to see what red and green over white looks like over the next few weeks. Complete hulls in red and green are very 'in your face' and the two-tone should be somewhat subtler! (Note that the red is actually a bright Post Office red and not the pink hue in the photo!)

The rigs, special fittings and sails have been commissioned from PJ Sails and will be available as a package from PJ Sails direct. It goes without saying that this will ensure both high quality and overall compatibility of boats. We were also able to inspect a number of hulls, fittings and stock of parts recently and came away very impressed indeed as to the overall high standards of everything connected with this project which is exceptional value for money at the listed prices.

INTERNATIONAL RECOGNITION

Once significant changes have been made to the production methods of what is supposed to be a 'one-design' class when racing is likely then a decision is required from the originators of the design as to whether one can call the new Mk.II a true Canterbury J. So far most people who have seen the hull are of the opinion that as the Mk.II has the same dimensions, weight, displacement and sail area as the Mk.I, and that the only difference is in the way the boat is constructed, that the Mk.II should be called a Canterbury



Another view of the winch in place, a single Hitec 785BB, both inexpensive and readily available



Three alternative plain colours as mentioned in the text

J and be able to compete against the original boats. Initially Alan Horne had some difficulty getting in touch with the NZ club, based in Christchurch, New Zealand, which has of course had grave problems with earthquakes but they have recently been in touch with him through the builder in the States, Hans Berger. At the time of writing this contact is only a few weeks old and they have not yet had a chance to consider the proposition at committee but feedback so far is very positive indeed. The Christchurch club has been sent a full description of the Mk.II build process and photos of the completed hull and this should allow them to make an early decision as to the validity of the new moulds. To check out details of the boat and also the final outcome you can log on to the website:

www.jclasshulls.co.uk or telephone Alan Horne on 07969 538626.

A CANTERBURY J CLASS ASSOCIATION FOR THE UK?

Whilst I (Allan Oxlade) was in the USA for the UK/USA Challenge for vane 36r boats I was asked by owners of Canterbury J boats to look into the idea of forming a class association here. Interest in the class on the other side of the pond is growing and already governed by their Class Association and they want to be able to promote greater interest worldwide. I am asking for information from current owners in this country to gauge the interest in forming a UK Owners Association to promote this class in the UK and to be the link between the New Zealand authority and other owners associations worldwide. With the recent increase in weed growth the usefulness of the design will, in my opinion, lead to more clubs adopting the class.

I consider the start to be the creation of a register to enable the number and locations of existing boats to be ascertained, and to seek help from other owners and clubs to form a steering committee, since it would need at least the organisation level we have in our own club. I have been passed a copy of the USA Handbook which covers all that has been done by them, which could be used as a basis. I feel I am well placed to do this since I am currently Commodore of the Woodley MYC that has ten of the boats sailing and four more in build. They are regularly sailed and enjoyed at the present time. I am in contact with New Zealand, the USA and the original UK suppliers as well as the current suppliers in both the USA and the UK. The success of such an association depends so much on the dedication and enthusiasm of its founding officers and this appeal is trying to seek that. My contact details are Allan Oxlade, Tel: 01628 639594, and Email: allanoxlade@virginmedia.com If you own a boat I would be very pleased to hear from you, and if you feel able to help and assist then that would be a bonus!

HITEC SAIL WINCHES FOR 2012

The Hitec brand name has been around for many years now, and used to be distributed in the UK by Amerang, and more recently by J Perkins Distribution which has meant that most of our model shops have been able to provide good service and stock levels. Products of this type are actually produced in very large pre-ordered batches which can lead to occasional hiccups in local availability but with a large UK distributor holding stock it helps to iron out the shipping delays from the Far East, or in this case the Phillipines which is where



The deck around the hatch covers is supported by CNC cut timber beams as you can see here, supplied as part of the timber pack, alongside such obvious things as the stand!



The mast steps in a tube to the hull centreline, and a simple ram gives some rake adjustment



The full keel and rudder is key to the boat's ability to glide through weed – the rudder heel is held by a small metal fitting and a carefully built up tube and O-ring to ensure water tightness inside the hull



The timber stand is supplied as part of the CNC cut timber items, and is clearly intended to provide good support during building and sailing



The Hitec 765HB arm winch

the servos are produced according to the box art! Hitec have specialised in low budget analogue servos for many years and offer a really superb choice for scale, semi-scale and general-purpose sailing boats. Every year the company add new items to their range, mainly directed at fixed wing aircraft and helicopters, indoor electric

flight and cars, but their older range analogue items are still available.

The smallest specialist sail winch is the HS765HB, which is geared to use a plastic moulded arm and can be used in something like a simple low cost One Metre if care is taken to ensure that the friction losses in the sheetlines are kept to a minimum.

The other winch in a case of the same dimensions is the HS785HB fitted with a double drum. The servo is geared down to a relatively slow movement, and produces three and a half turns of

the drum from end to end of travel and moderate speed but with plenty of torque. They are fitted as standard in the RC Laser class and stand up very well to the loadings involved. For scale models the slower winch speed is actually an attraction as it is much better suited to the general feel of such boats, and in fact the Canterbury J hull reviewed above uses one. When first introduced the lack of end travel adjustment was seen as something of a handicap but the advent of modestly priced transmitters fitted with EPA (End Point Adjustment) has overcome this because it is now possible to set the sheet travel end points at the transmitter. Although the case size and weight are somewhat larger than the serious competition winches such as the Graupner and RMG winches the modest prices more than compensate for this, especially if the boat has the space and displacement to allow for this.

The third Hitec product of direct interest to sailing boats is the HS815BB Mega winch, which is significantly larger and heavier but comes with a moulded arm intended to work a sail control sheet line. Clearly only required for larger projects but extremely competitively priced as compared to the specialist items on the market for such boats.

Model	Mode	Length	Width	Height	Weight	Approx Price
Any Standard	—	50 mm	20 mm	40 mm	40 g	£10
Hitec 765HB	ARM	59 mm	29 mm	50 mm	110 g	£26
Hitec 785HB	DRUM	59 mm	29 mm	50 mm	110 g	£26
Hitec 815BB	Mega Arm	65 mm	30 mm	57 mm	153 g	£36

This table shows the sizes, weights and guide prices for all three of the Hitec 2012 range of sail winches



The Hitec 785HB drum winch



The Hitec 815BB Mega winch

IRSA PRESS RELEASE

At the February meeting with the ISAF Secretariat it was confirmed that IRSA are now fully responsible for world radio sailing under the International Sailing Federation umbrella. See IRSA's entry in the ISAF yearbook and the link: www.sailing.org/affiliate.php With the IRSA position now confirmed, we shall be looking forward to strengthening our links with ISAF and all organisations that fall within that banner. IRSA will now be looking to encourage new countries to join and will also investigate the introduction of a tiered structure for new and/or the numerically smaller classes that are beginning to flourish Worldwide. IRSA will continue the ongoing promotion and development of the existing four International classes alongside these new class initiatives.

These initiatives will be stimulated by direct post and email to interested parties and support from the website www.radiosailing.org YouTube and other media activities. The continual development of IRSA and our sport will necessitate the re-introduction of fees from the DNM's and levies from race meetings to support the Permanent Committee, develop our website, produce publicity materials, and to cover other expenses that are expected as the organisation expands. We are already looking at publicity material for our International events.

IRSA are pleased to report that negotiations with ISAF concerning Appendix E of the Racing Rules of Sailing, in particular, have been very successful with IRSA now having a direct input.

IRSA will hold its General Assembly meeting starting on April the 9th in a new electronic format that will be accessed by Delegated National Members and IOMICA. The agenda will be posted prior to the start and discussions and voting will be completed on 15th April 2012. Tight sheets and full sails to you all with best wishes for the 2012 sailing season. Signed R J Hobbs, Publicity Officer IRSA **MMI**

POWERPLUG

EXHAUST MOUNTINGS – RICK GIVES US SOME ATTACHMENT IDEAS FOR BOTH NITRO AND PETROL ENGINE EXHAUSTS

AUTHOR: RICK EYRICH ricirc99@tampabay.rr.com USA

While the subject of adapting a tuned exhaust layout to your nitro/petrol-engined R/C craft is commonplace, its actual mounting to your hull in a way that will keep the exhaust secure is another challenge altogether. As an old (repeat, OLD) motocross rider from the last century I've seen many ill-attached tuned pipes dangling from dirt bikes; plus, in recent years your MMI scribe has also witnessed the same loose-exhaust syndrome on several IC marine craft as well. The end product of this problem has been either a DNF at the motocross track or the loss of the boat's pipe to the lake demons!

Unlike a dirt bike, a powerboat's tuned exhaust must be both easily removable and adjustable to suit the vessel's power/propeller set-up; so the marine modeller must carefully mount his/her boat's pipe to prevent any hang-ups with the finished exhaust. To this end this month's column space will be devoted to over-viewing a wide array of pipe attachment ideas for both nitro and petrol engine exhausts that I've run across at recent race events.

POINT 1 – THE ENGINE

Besides acting as the initial attachment point for the exhaust system in your hull, its fixing point on the engine's cylinder area is also an important pipe-support location as well. Since the majority of aftermarket IC marine tuned pipes rely on a separate header pipe to actually join the exhaust to the motor, this short piece of tubing must be securely affixed to prevent problems.

Both 'dry' and water-cooled header pipes are popular on powerboats, but in either case their mounting fasteners to the cylinder's exhaust flange have to be tough enough to retain the header/pipe set-up. This means choosing bolts with the same exact thread size/count as the flange holes; plus the fasteners should 'fill' the hole threads completely to provide the best bond between the

bolts and the header/flange.

Header pipes normally feature a 90-degree bend in their makeup to route the main exhaust out the aft area of your hull; however, it's also possible to set-up certain tuned boat exhausts with a straight header especially on certain purpose-made marine engines.

Set-up with the cylinder's exhaust port/outlet facing towards the back of the hull, this arrangement will be very useful on those boat set-ups that benefit from using variable-length header pipes. To gain the best available trade off of torque and rpm you can switch-out a straight header pipe to one either longer or shorter than the original header, as this can change the engine's power curve to suit your boat's design and propeller choices.

Normally changing to a shorter header pipe will increase the motor's rpm levels while a longer header will increase torque; but any switch in the header's length will alter the whole exhaust's mounting point. Luckily, many aftermarket tuned pipe mounting brackets feature a multiple hole or slot attachment arrangement which lets the bracket 'move' with the change in header length and with good locknuts on the fixing points, the pipe should stay positioned while the boat's underway.

Moving to the actual manifold that retains many current header/exhaust combinations the boater will have to determine whether to use a dry or water-cooled manifold on your nitro/petrol hull's power plant. The advantages of relying on a water-cooled manifold are that any heat reduction you can gain on a two-stroke motor's exhaust layout will help to maintain the engine's total horsepower levels.

Crafted from aluminium the average manifold can sport either a single or double water passageway in its makeup; plus they are available with different header pipe connection styles as well. Again their actual affixing levels to your hull/engine set-up will be done by either a flexible silicone hose, spring tension, or a wrap-around clamp, and each are well-suited to most IC marine craft exhausts.

Another option in pipe cooling involves pumping H₂O directly into the header pipe and the water is then pushed through the header and exhaust to cool the components, after which the water exits out the exhaust's stringer.

BELOW: *Suspended either completely inside or partially outside of your IC hull a good tuned exhaust unit can greatly improve your boat's performance levels, but it must be mounted correctly to work and stay put at the same time*



For this Powerplug column we won't go into any details of this particular cooling area; however, if any of the MMI readership is interested in further details of this method, please email me and we'll dedicate some future column space to the subject.

POINT 2 – THE COUPLER

Although not normally thought as a mounting/support component of a boat's exhaust layout, the type coupler used to join the header and main exhaust can greatly affect the pipe's overall mounting strength. Thick-wall silicone or similar, high-temperature tubing will likely top the list of popular coupling techniques and they can be locked in place with nylon or metal clamps on the header/pipe ends. Improperly secured, a hose-type coupler hose can quickly loosen or split open while your boat's running and again the result can be a pipe lost to the lake gremlins!

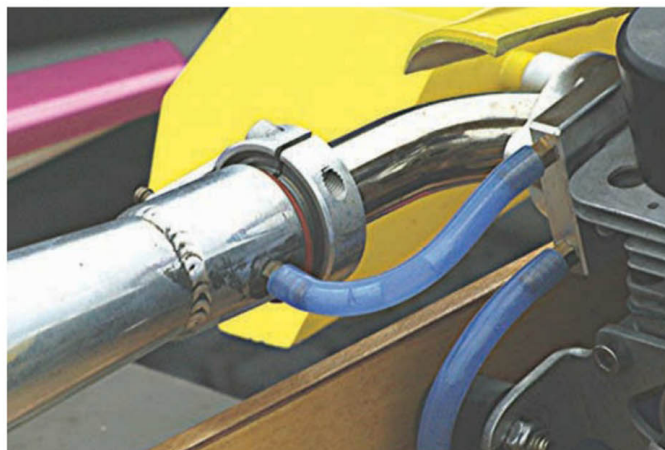
Another popular exhaust connection is an accessory water-cooled O-ring style coupler and these units keep the connection cooler while providing a rubber seal between the parts. Built into the header or the main exhaust, the O-ring coupler can't supply as much support as the heavier hose coupler, plus you must disassemble the O-ring coupler to inspect/replace its sealing grommets.

On the bright side, some new O-ring couplers are now being made with a secondary holding clamp in their makeup and this change can improve the overall support of the exhaust layout on your hull.

If you look closely at one of the images in this column, you'll see that one gashull your scribe encountered at a recent race was set-



This boat's power plant features a rearward-facing exhaust port, so mounting its tuned pipe didn't require a curved header pipe and the two components were coupled with a thick-wall, high-temperature silicone hose



Due to an IC boat's load and vibration levels a strong clamp-style coupler is needed between the exhaust header and pipe and this hull's exhaust has cooling points on both the cylinder port and the header coupler



As a backup to the pipe's clamp set-up, this hull's coupler's been drilled/tapped to accept a screw that will in turn hold a small tab and this stay's other opening fits over the coupler's water nipple to create a safety tab should the coupler loosen unexpectedly



Not unlike an older motocross exhaust, this unique petrol boat's 'outboard' engine arrangement has a steel tuned pipe that features an adjustable header section held in place by two heavy-duty retaining springs

up with the outer-locking clamp coupler that was also equipped with a security tab for the main tuned pipe. As the header coupler was separate from the O-ring sealing section of the exhaust the clamp's body had been drilled and tapped to accept a small Allen head bolt and this created an attachment point for a small metal tab fitted over the exhaust's water outlet nipple.

Many IC racers who own open-cockpit hulls running cooled exhaust systems simply aim the water outlet nipple upwards, as this will both ensure that the water exits the vessel and also provides proof that the H₂O is running all the way through the cooling system.

Adding the small tab may only lend a small level of safety to the exhaust joint; but it could hold the wayward/loose pipe long enough to get the boat back to shore should the pipe's main support fail during a race.

POINT 3 – MAIN SUPPORT

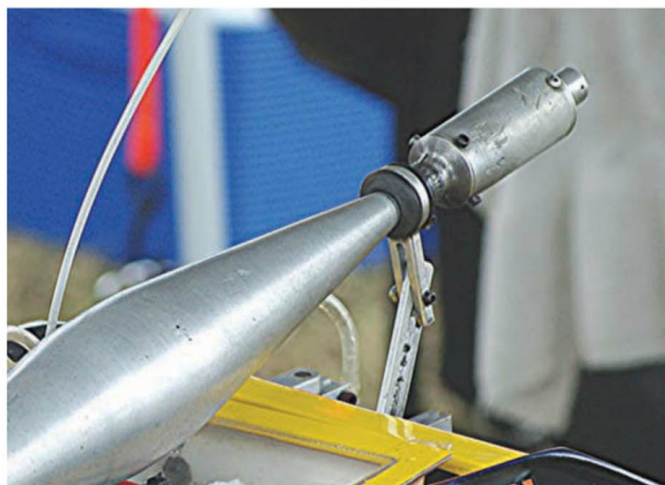
Choosing the main retaining/mounting stay for your boat's exhaust will involve making sure that whatever support bracket you do use will keep the main pipe a safe distance from the hull and its on-board components. This will include such things like the radio box, the throttle cable or linkage, the fuel/water/pressure hoses and whatever hatch cover you might have on your marine craft.

The vibration and the G-forces on the average nitro/petrol hull can move the exhaust around once it's powered-up, so a good gap of at least a quarter of an inch (or more) between the hardware and pipe should keep the pipe free of the radio box, hatch, etc. at the lake.

Aluminium or steel custom pipe braces are sold by many IC boat builders and in general using one that's adjustable is a good idea to achieving the right clearances between the hull and exhaust. Also, like the earlier discussion of using a multi-hole, slotted pipe bracket, so you can tweak the header pipe length to suit the engine's power output, you can situate your new pipe (or a different exhaust altogether) via the adjustable support bracket.



When using the spring tension technique on your vessel's header/exhaust junction having a couple of longer/shorter spring sets in your spares box may be needed if you change header pipe length to alter the engine's power curve



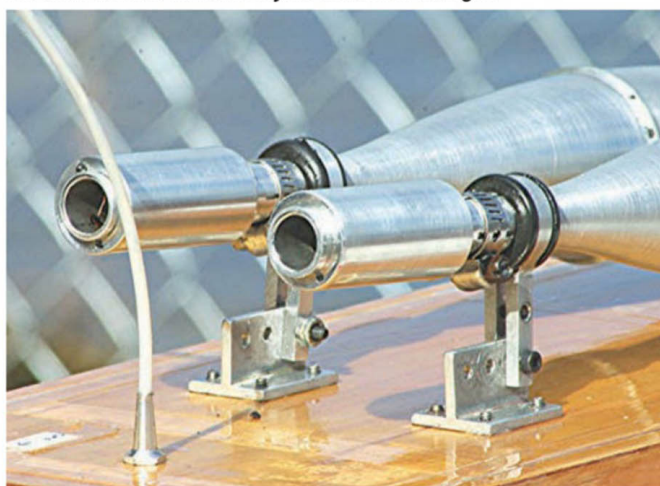
Laid out with a series of mounting holes this pipe's back support stay can be adapted to different pipes, headers, etc., and is fixed to the hull's main strut on the boat's transom plate



Simple in design this aluminium L-bracket pipe mount can be made from DIY store aluminium stock, plus many good hardware outlets will also carry the rubber-lined clamps that are used to hold the pipe to the L-bracket as well



ABOVE/BELOW: Although both of these dual-engined boats use silencer-equipped exhausts their pipe-holding methods differ greatly. Both pipe and silencer-bracketed stays are used and they are both usable on most styles of IC hull designs



On full-canopy monos or catamarans this exhaust bracket will likely be bolted to the rear transom plate or to its drive/rudder strut. Going slightly 'heavy' on the transom/stay fasteners is a good plan and they should be equipped with either a thread lock compound or with lock-nuts on their bolts. Once your bracket reaches the body of the tuned pipe a rubber-insulated clamp will actually connect the components together and here again the best quality fasteners and a thick-rubber clamp are a necessity to properly support the exhaust.

Allowing for either a separate or built-in muffler-style pipe unit, you can generally find a good selection of rubber-lined metal clamps at better DIY stores and some will feature a thicker/wider black grommet design that's well-suited to IC boat usage. Locating the clamp on the pipe body near its slender cone end/exit pipe area and making sure that the clamp itself holds the pipe securely, even when the engine's at full rpm mode.

For those hulls with a full lock down cover or hatch set-up the now installed tuned pipe's opening cut out up through the canopy can be done by slowly removing hatch material via the 'eyeball' method. After rough-cutting the glass fibre cover with a jigsaw or bow saw, the opening can be finished with a Dremel tool equipped with a sand drum. Any rough edges or sharp corners should be cleaned-up via the drum or with regular wet-dry sandpaper and the finished cowl cut out should fit the hull/pipe without any contact between the parts.

Due to noise level concerns most power boaters who either compete or just regularly run their vessels have added clamp-on silencers and/or a fully muffled tuned pipe to their hulls, so the modeller will have to factor-in these quiet pipe's dimensions for its attachment to the hull.



Low-profile hulls have their own set of exhaust-mounting techniques as the support brackets must clear the transom and radio box. This mono's rear pipe stay actually curves around the transom to allow for the lowest exhaust profile as possible

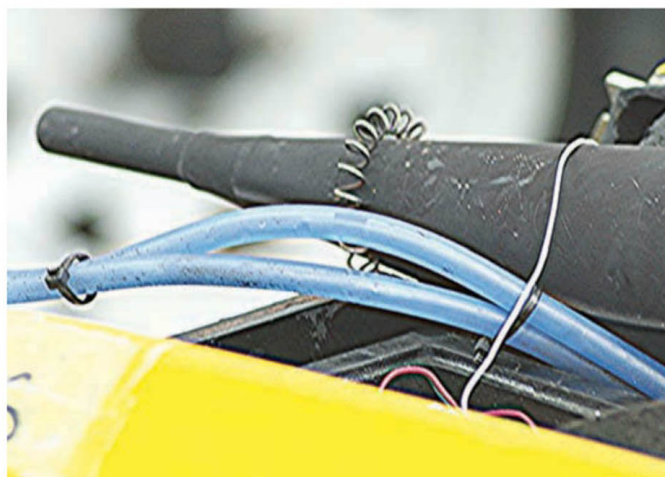
An additional stay or a larger-diameter insulated clamp may be needed to support the heavier muffled exhaust, plus the exhaust will demand a regular cleaning and repacking as well, which means having a simple yet strong bracket on the silencer section of the tuned pipe.

POINT 4 – MISCELLANEOUS EXHAUST MOUNTING NOTES

As is the case with the other drive/control components on a power craft, the exhaust system's mounting method could require some tweaks from time to time. On those header/main pipe connections that use tension springs having a couple of spare springs (of different lengths) will be handy when you change-out the header pipe for one longer or shorter than the stock unit.

Besides the possibility of finding suitable tension springs at your local hardware store another outlet for these parts can be found at most motorcycle shops as many small scooters and the like use similar springs on their exhaust systems.

If your pipe's muffler is in need of repacking it'll be a good idea to use aluminium pop rivets to re-connect the muffler's end cap to either the silencer or the actual end of the muffled exhaust. Having personally made the mistake of using stainless steel rivets on a past silencer rebuild I can attest to how difficult it is to remove these SS rivets when it was again time to service the unit!



Including a backup spring or simply a loop of stainless steel safety wire like the ones used on this hull's tuned exhaust can greatly reduce the chances of the tuned pipe exiting the hull after a sudden bracket failure



With only some basic tools and workbench time the exhaust on your IC boat can be mounted on even a tight-fitting hydro hull like this unit and it will still be able to be easily detached for any service chores needed at home or the lake

On those silencers that feature end caps held in place with screws a high-temperature thread-locking compound can be applied to help the fasteners remain tight under the stresses of IC boat usage.

Finally, it should be said that even with the very best coupler and main exhaust bracket on your boat there could be an instance where the tuned pipe's stay shears a bolt or suffers a stress fracture and the exhaust could end up in the water.

As a backup to your choice of mounting pieces adding a small retaining spring or wrapping a section of stainless steel safety wire between the pipe and the hull-side bracket mount will help keep your wayward exhaust off the bottom of the pond. Long done on aircraft and racecars, this thin safety wire is very strong and won't take up a lot of space on the pipe/bracket junction, plus it can be easily removed with side cutters if you need to remove the pipe at lakeside.

As for using a spring, a fairly thin wire spring can be wrapped around the belly of the exhaust and then hooked to the hull via small hooks screwed into the engine stringers. In a pinch, even nylon ty-wraps could be used as a secondary pipe lanyard but they'll only take a short period of pipe contact before they melt away as the loose exhaust moves around inside your boat.

Your Powerplug scribe welcomes any comments, questions or other correspondence regarding IC marine craft and you can contact me via the email address on this column's header. As is the case with magazine publication, there will be a gap between the time you send your message and seeing it in the pages of MMI; however, I will try very hard to reply ASAP to your enquires as I receive them. Talk to you next time!

TIP OF THE MONTH

Even though I've likely already discussed this topic in a previous Powerplug column I thought I'd mention the correct water hook-up point to your gasboat's engine as it ties in with the placement of the hull's tuned exhaust. If your particular petrol marine motor's water fittings are set-up with one higher on the water jacket than the other nipple the boater will want to affix the 'incoming' waterline to the lower fitting.

As is the case with water, as it heats-up it wants to rise as a gas and by placing incoming water hose low on the cylinder jacket you'll make it easier for the heated water to move up and out of the power plant. Once out of the engine's cooling jacket the water can pass through either the exhaust manifold or the header coupler, or if you're running a dual water pickup both the engine and the exhaust can have their own cooling hose set-up. **MMI**



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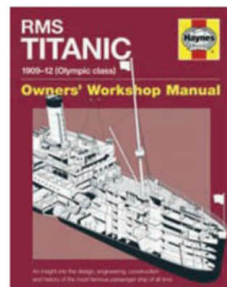
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AIRWAVES

THIS MONTH WE PUT THEORY INTO PRACTICE AND FIT OUT A PLASTIC KIT WHERE WEIGHT DISPLACEMENT AND CURRENT CONSUMPTION ARE VITAL INGREDIENTS!

AUTHOR: ALAN SENIOR  GREAT BRITAIN airwaves@anola.net

In the March 2012 MMI Robin Trott's Plastic Kit Scene article featured the long awaited Italeri Vosper 72'6" MTB 77 (part number 5610). Since I really enjoyed building and converting the Italeri Elco 80' Torpedo Boat PT-586 which then behaved beautifully on the water, I just had to get the new Italeri kit and convert it to R/C. This is the first part of the conversion article and covers the selection of the principal additional components needed. Other 1/35 scale Italeri models that could be converted to R/C using the same approach include the German Schnellboot S100, kit number 5603, and the smaller 55 cm long MAS 468 4a Series MTB, kit number 5608.

The artwork on the box is very striking; but having a rather critical technical eye I noted that the starboard engine does not seem to be running, as there is no visible cooling water issuing from the exhaust outlet!

The parts in the box are well protected by cardboard pieces and the only casualties in the post were the tiny and fragile aerials in the etched brass sheet. The actual kit is up to the usual Italeri high quality levels with a lot of detail in the parts; however some of the more delicate items may not last long on a working model so may



The kit comes with a booklet, decals, brass etched parts and laser cut window glazing

have to be replaced with sturdier copies or simply left off. Apart from the build instructions there is a nice photographic manual with the history of the MTB and photos of the originals, I really like this booklet as knowing more about the original craft's history and seeing it in a wartime environment helps bring the imagination alive, adding 'value' and meaning to the model. There is a nice set of transfers (decals) with the kit as well as brass etched fittings and rigging cord. The laser cut plastic glazing is a nice touch too and will make installation easier. The deck is made in one piece with no apertures of useful size so this will need to be considered during the build phase. The hull has a length of 62 cm (25") so it will make a compact, easily transported model.



The Italeri 1/35 Vosper MTB plastic kit is a good size for an R/C conversion

The price of the kit varies and has an SRP of £99.99; some online vendors offer the model at a lower price so it is worth shopping around whilst allowing for postage. Since all the scale parts and fittings are included this is very good value for such a detailed kit.

I have to admit that I did not used to be a fan of Airfix plastic kits simply because they were static models and I like things that can move under their own power. Many, many years ago when I built my first electric model tug from balsa I had a friend who really liked building plastic kits. He saw my model running across the local pond and decided that he would build an electric model from one of his warship kits. He did a great job of building and painting the model and installed a motor, propeller and battery. The day of the maiden voyage came and we tried the model in that useful 'test tank' in the bathroom, sadly the model barely floated and preferred to be upside down! Even when the battery and motor were removed the model still would not float upright or on the true waterline. The fundamental problem of the model was that the plastic was too thick and heavy for the model's size and, when upright, the centre of gravity was above the centre of buoyancy making it unstable. At the 1/35 scale of the Italeri kits we still tend to have the problem of the high weight of plastic parts, so some effort is needed to keep the R/C set-up light to produce a working model that floats on the true waterline and runs well, however in other respects they make excellent conversions.

DISPLACEMENT ESTIMATE

The converted Italeri Elco PT boat ended up with a weight (displacement) of 1.25 kg and floats just a little lower in the water than it should, so the Vosper MTB being about 7/8ths the length was going to have to be lighter than this. If we assume that the hull shapes of the 72' 6" Vosper and 80' Elco boats are the same, and visually they are very similar, then we need to cube the fraction and multiply by the weight of the Elco to get the approximate displacement of the Vosper MTB. If the length of the Vosper is 'V' and the Elco length and weight are 'E' and 'W' respectively, then the equation to get the approximate weight 'X' of the Vosper is:

$$X = (V/E)^3 \times W$$

$$\text{So: } X = (72.5/80)^3 \times 1.25 = 0.93 \text{ kg}$$

This gives us a good guide figure for the displacement of the model, but does not tell us how much extra weight the built plastic model will take to float on the correct waterline, to estimate this we need to weigh some of the principal parts of the kit.

On lifting out the main hull and deck it was immediately apparent that they were quite heavy, oh dear! The hull and deck were weighed on a set of scales borrowed from the kitchen; I also weighed some of the smaller parts using jewellery scales to estimate the total plastic weight. The measured figures are in the table below:

Part	Weight (g)
Hull	372
Deck	194
2 torpedoes	20
2 torpedo tubes	35
Main cabin	28
Other bits (estimate)	70
Paint + glue (estimate)	25
Total	744

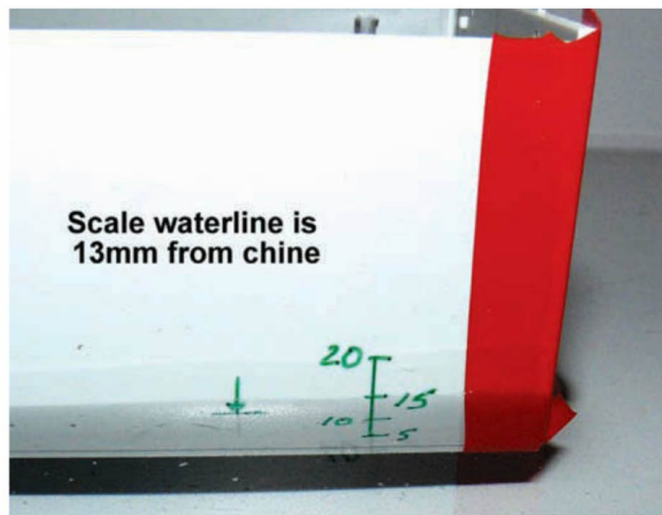
So the plastic alone weighs about 0.75 kg, which leaves just 180 g for the radio control system including the motors, battery etc., to put this into perspective this is less than

the weight of 7x AA cells! Clearly we need to be more weight conscious than usual.

To test whether the estimate displacement of 0.93 kg was about right some bathtub trials were needed! I taped the stern to the main hull and sealed over the various holes in the hull. The position of the scale waterline was then marked on the hull with a waterproof CD



Test tank measurements indicated the all up weight should be in the range of 0.85 to 1 kg



Waterline at a displacement of 850 g

marker pen. Judging from photos of the full size craft I estimated that the waterline at the stern should be about 12 mm up from the chine. Later I found that 13 mm is actually quoted on page 4 of the build instructions! Based on photos the waterline crossed the chine near the bow under the scallop in the foredeck. Armed with this information I added weight to the floating bare hull until the model floated on the right line. This indicated that the displacement should be about 0.85 kg, which is lower than the calculation! The good news was that with the bow kept at the correct waterline the stern would only lower in the water by 5 mm for every 220 g of ballast added. Thus the model would still look reasonable in the water with an all up weight of about 1 kg. These tests and calculations gave me the confidence that the model could take a lightweight R/C installation weighing up to 250 g (weight of 9x AA cells).

To keep the installation light it would be simplest to make the conversion single screw as I did for the Elco conversion described in the April 2011 Airwaves, however as I had never built a triple screw model I thought I would 'push the boat out' and give it a try! Clearly when three of anything are needed the weight can increase rapidly (as well as the cost), so it was even more important to choose light motors and battery as well as running gear (prop shafts and rudders etc.).

PROPELLERS

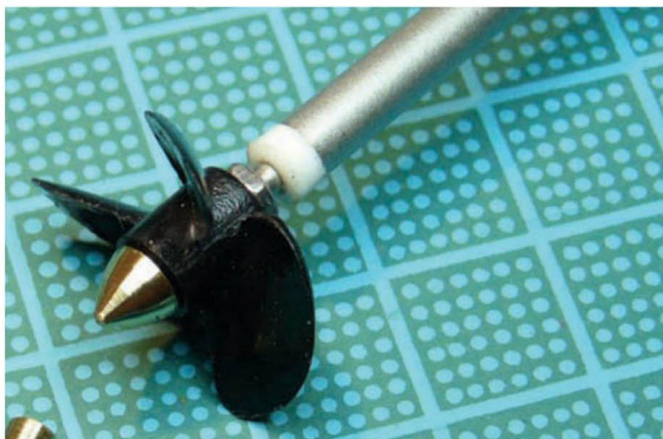
The scale plastic props that came with the kit are too weak to be used for propulsion so a more robust set is needed. To keep the weight down I decided to use a 2 mm shaft so this limits the range of propeller options somewhat. The scale prop is quite large considering the scale at 22 mm diameter, which is convenient. Possible propeller options are either the Graupner 3-blade plastic ones, since these will fit a 2 mm shaft and are available from vendors such as Cornwall Model Boats, or the nice but expensive Prop Shop bronze ones. It is probably a good idea to try the lower cost plastic ones to start with.



The supplied grey plastic propellers are too weak to use for model propulsion



This Graupner rudder is suitable and weighs just 10 g



The 150 mm long 2 mm stainless steel prop shaft weighed in at 8 g



The two candidate brushless motors

The Graupner props have quite a low pitch so I was not too sure about them, however I had some in my spares box and intended to try them when the model was completed.

I have a tiny fast model called a Joysway Magic Vee that has been reviewed in MMI, this has a rather nice racing style prop on it of 20 mm diameter and it looked ideal to power the Vosper MTB since it has a relatively high pitch for the prop size. Unfortunately we have to sacrifice the scale appearance if we use them. The Magic Vee is a very fast model for its size and the motor span the prop at 15,000 rpm unloaded (measured with the laser tacho covered in the May 2012 Airwaves) so this prop appeared a reasonable choice to run at a slower rpm for the Vosper MTB. The Magic Vee props are also quite low cost and available as spares at around £2 for a pair, the main problem is that they have a 3 mm hole straight through them, so to use them with a 2 mm threaded shaft it was necessary to make up a threaded adapter in brass on my lathe. A simpler approach would be to fit a tube sleeve and nuts to hold the prop to the shaft. Testing will be done on different propellers and the results will be reported in a Part 2 Airwaves.

PROP SHAFTS AND COUPLINGS

To keep weight down (I know I keep mentioning this but it is so important!) 2 mm prop shafts were selected. I found some nice 150 mm long ones on eBay that had thin walled stainless steel tubes, stainless shaft and PTFE bearings. The thin walled stainless tube is much lighter and stiffer than the brass equivalent, each prop shaft weighing in at a mere 8 g.

Cornwall Model Boats supplied the couplings, two options were considered suitable. The 50 mm robbe rubber coupling sleeves (Part R1386) cost only 37p each, the sleeve is thick walled with a 1 mm bore but will have to be tested to see if it will handle the torque without twisting off. Rubber tube is not so good when going astern as the shaft can pull out, thus a collar would be needed to stop this; these collars are available in model shops and are used by aircraft modellers to keep the wheels on the undercarriage axles.

A more expensive (at £6.33 each) but well-engineered option is the Graupner G355 2-3 mm coupling assembly, which is double jointed to handle small angular and axial misalignments. The ones I bought had one grub screw hole filled with plastic from the injection moulding process (tut-tut Graupner), which proved tricky to remove by drilling without damaging the thread.

RUDDER

The scale rudders are far, far too small to be effective in a 1/35 scale model. The only option is to fit one with a much larger area. The brass ones are quite heavy, but I found a nice Graupner one (Part number 430.35) with a streamlined moulded plastic blade on the Cornwall Model Boats website. This weighed only 10 g and the tiller arm design would permit it to be located very close to the stern.

MOTORS

The Elco ran well with the brushless motor and consumed just 35 W, so a reasonable estimate is that we will need 30 W to get the Vosper model planing nicely. The lightest commonly available battery is the LiPo so this was an obvious choice and suitable 7.4 V 2-cell (2S1P) packs are commonly available. To produce 30 W at 7.4 V we would need a current of $30/7.4 = 4$ A, thus each of the three motors only needs to handle about 1.3 A; the upshot of this is we do not need a high current ESC! Clearly a single drive motor would need 4 A.

It is a good idea to keep the rpm down in models to avoid vibration, wear and noisy resonances due to slight imbalances in the mechanical set-up of the rotary parts. However, the propeller would need to be limited to 20 mm to 25 mm in diameter to remain a reasonably scale size and these would need to spin quite quickly to get a good planing speed. In the end a motor with a kV rating in the range 1500 to 1800 seemed appropriate based on other models I have, these would give a prop rpm of around 11,000 to 13,000.



Two candidate couplings from robbe and Graupner

To keep the motors light and cool a brushless one is ideal, after reviewing the motors available from various marine model vendors I found their range tended to be oriented to more powerful fast set-ups. The Giantcod website provided the greatest range of outrunner motors, conveniently divided into weight categories. Quite a few motors were out of stock so the options were more limited than the initial impressions gave. In the end two potential outrunner candidates were selected and ordered:

Emax BL2205/22, 10.5 Amps, 1780 kV, 29 g: £7.29

Emax BL1806/25, 10 Amps maximum, 1650 kV, 19 g: £7.78

The former has the advantage of a 3 mm shaft, which is easier to fit a coupling, the latter is lighter but has an odd drive coupling designed for airscrews. Other motors costing as little as £4.52 on the Giantcod website would also be suitable, but ensure they do not weigh more than 30 g, can take at least 8 A (for reasons disclosed later on) and ideally select one with a 3 mm shaft with a kV less than 2000.

BATTERY

The very light Lithium Polymer (LiPo) batteries are ideal where model weight is critical. A compromise has to be made between model running duration and weight, to get 20 minutes running time (1/3 of an hour) at 4 A we need a battery with a capacity of $4/3 = 1.33$ Ah or about 1300 mAh. Once again we need to go to a specialist supplier for this; I purchased a couple of Gens Ace 1300 mAh 2S1P LiPo's from Giantcod at £6.22 each. Each pack weighs just 78 g (weight of three AA cells). The ESC BEC will power the receiver and servo so further batteries are not needed.

Low cost chargers that operate from a 12 V source such as an SLA or power supply are also available from Giantcod. I bought the '2-3 Cell Mini Charger' at £5.58 and found it works fine with the selected LiPo.

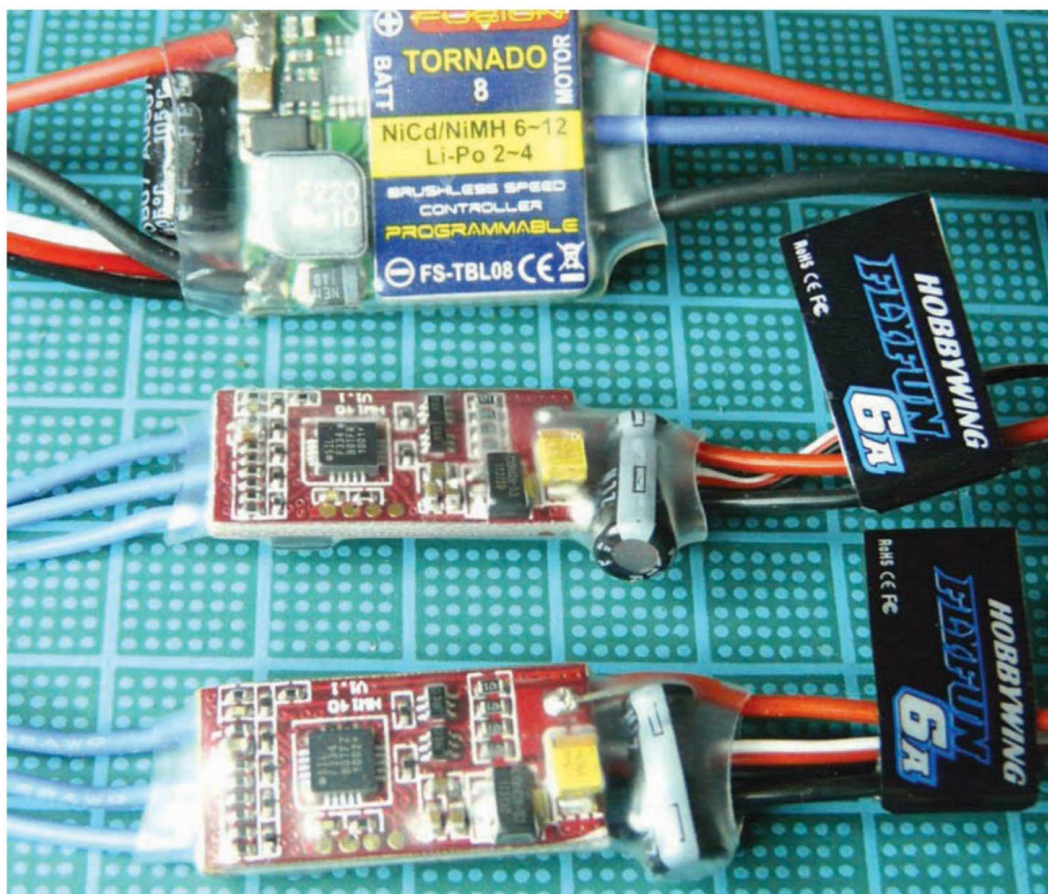


The 1300 mAh 2-cell LiPo battery pack with Deans style connector and 3-pin charge lead

ESC

Brushless motors can burn out quite easily if they are overloaded when, for example, the prop picks up weed. Fortunately most brushless ESC's have a thermal overload protection, which can help stop motor burnout. To make use of this ESC protection it is important to select a motor that can handle more current than the ESC rating, thus a 10 amp rated motor would be protected to an extent by using a suitable 6 A ESC. If the motor is overloaded the ESC should shut down when it gets hot.

I thought that finding a low current ESC with instant reverse capability would not be easy but fortunately the Logic RC Fusion FS-TBL08 Tornado 8 A brushless ESC fits the bill nicely and has a built-in BEC. These ESCs cost around £20 but as each brushless motor must have its own ESC, buying three is getting



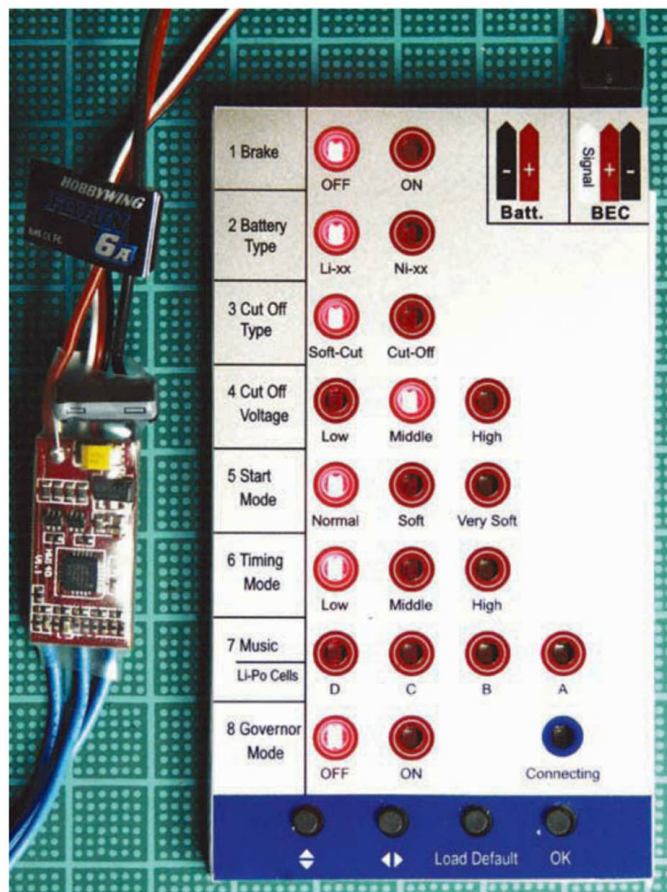
Logic RC Fusion Tornado 8 A and Hobbywing 6 A brushless ESCs



Fusion ESC programmer in use

rather expensive. The brushless ESCs for model aircraft are much cheaper but do not have reverse; however we can take advantage of this low cost as we really don't need much power in reverse, hence we could manage with just one reversible ESC on the centre prop.

The ESCs selected for the port and starboard motors were the Hobbywing Flyfun (formerly called Pentium) 6 A controller, available from Giantcod for £7.09. The useful feature of these Hobbywing ESCs is that you can program the stick position for zero throttle,



Hobbywing ESC programmer in use

thus since they don't have reverse we can program zero throttle for the centre stick position on the transmitter, so both port and starboard motors do not run when the model is going astern with the stick pulled back, but power up normally as the stick is pushed forward.

To test the ESC motor protection I connected the motor to the Flyfun ESC and deliberately stalled it at full power, the motor got warm and the ESC quickly got hot, fortunately the ESC cut out for a while until it cooled, suggesting that this particular set-up will be quite robust.

Consider buying the program cards to help set-up the ESCs. Personally I like being able to see the ESC setting with the programmers, rather than having to interpret a series of rapid beeps. Oddly the Fusion Tornado ESC must be initially programmed for the 'Boat' mode using the transmitter stick, so perhaps once this has been mastered it is possible to manage without the programmer. The Fusion programmer was bought from Antics model shop for about £17, the Hobbywing one for £4.80 from the Giantcod website. The neutral point of the Hobbywing ESC has to be programmed to a centred throttle stick; this is relatively straightforward after a quick read of the instructions.



2-3 cell mini charger for the LiPo battery

FINAL DISPLACEMENT ESTIMATE

Once all the additional R/C bits arrived in the post it was possible to estimate the all up displacement of the completed model and verify the practicality of incorporating triple screws. The following table gives the breakdown of the R/C parts needed for the conversion; these total 267 g and adding the 744 g for the built plastic kit gives a grand total of 1011 g, which is pretty much on target. A similar calculation indicates a single screw version would weigh in at about 950 g, so this would be a better option for those modellers who would like to get closer to the scale waterline or are less weight conscious than I am!

Component	Weight (g)
3 motors	57
1300 mAh LiPo	78
3 propshafts	24
3 props	3
3 Graupner couplings	15
Planet T5 receiver	7
Mini servo	10
Rudder	10
Fusion Tornado 8 A ESC	16
2 Hobbywing 6 A ESC	12
Power leads	10
Miscellaneous (estimate)	25
Total	267

CONCLUSION

Based on the calculations and measurements an R/C conversion of the model is achievable without making the model overweight. The connection and installation of the various parts plus the on water tests will be covered in the next Airwaves! Until then, if you have any questions do email me. **MMI**

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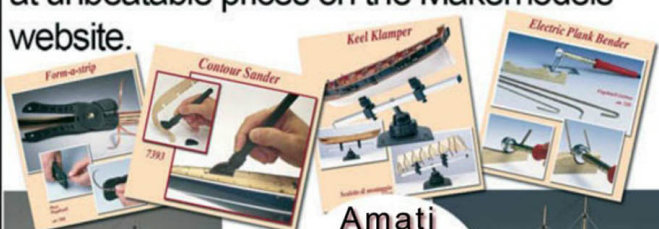
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SCALE SCENE

IAN LOOKS AT A STRANGE LOOKING WORLD WAR I WARSHIP

AUTHOR: IAN WILLIAMS  GREAT BRITAIN

*The model that prompted the article
– HMS Ladas (see text), note painted
windows on the deckhouse to
resemble the bridge*



Whilst pondering on what the next article would be about, I suddenly remembered an unusual ship model I had seen in the maritime section of Sunderland Museum. I couldn't remember all that much about it, except that it had two bows! I started poking around on the Internet and came across a blog site for the Tyne & Wear Archives & Museums service (www.twmuseums.org.uk) on which there was a short article on pole compasses by Ian Whitehead, the Keeper of Maritime History at Tyne & Wear Archives & Museums. (If you want to know what pole compasses are, check out the website!) Ian kindly identified the ship model and told me that although the model was no longer on display at Sunderland Museum, it was in storage at the Discovery Museum at Newcastle, he had taken some photos of the model out of its case before being put in storage.



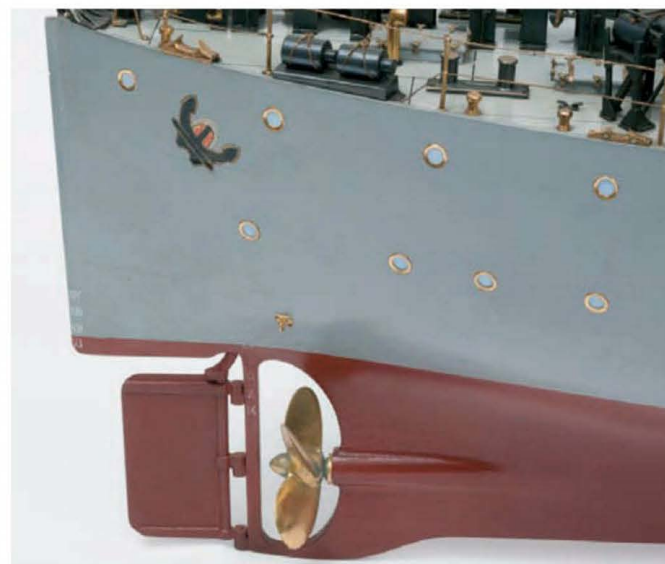
24 class sloop HMS Bevis in 1918. Resplendent in dazzle camouflage!



HMAS Moresby (ex HMS Silvio) in 1940 as auxiliary anti-submarine vessel

The model is of HMS Ladas, a 24 class fleet minesweeping sloop, built on the River Wear at North Hylton, Sunderland by Osbourne Graham and launched on the 21st September 1918. Osbourne Graham also built two other ships of the same class in 1918, HMS Sir Visto and HMS Persimmon. HMS Ladas went into service in 1918 with the Granton, Edinburgh minesweeping flotilla. She was named after the winner of the 1894 Epsom Derby. She was sold out of service in November 1920 but bought back in May 1921 to be used as a mooring hulk. She was broken up at Rosyth in 1936.

The 24 class was a class of minesweeping sloops which were a derivation of the earlier Flower class sloop, but designed to appear double-ended (more on this later). Twenty-four ships to this design (hence the class name) were ordered between December 1916 and April 1917 under the Emergency War Programme for the Royal Navy in World War One, although two of them were cancelled before launch and only 22 completed, just 10 of which were completed before the end of the war. The ships were named after famous racehorses, all winners of the Epsom Derby in fact, but they were not named the Racehorse class as the Admiralty thought that this could easily be confused in communications with the Racecourse class of paddle minesweepers, and so they officially became the 24 class. Like the Flower class sloops, they were single-screw fleet sweeping sloops. Weighing 1320 tons they were 267 ft length overall, with a beam of 34' 10" and a 12 ft draught. Weapons were 2x 4" and wartime versions had one or more 3



The stern of Ladas, note painted anchor

pounders. The ships seem to have been used almost entirely for fleet minesweeping.

They were something of a design oddity in more ways than one as they had, at first glance, the appearance of a merchantman with a single central funnel and a single mast either just forward or just aft of the funnel. However, Jane's of 1919 notes they were never intended as Q Ships, although they might have been thought of as fleet escorts initially. They soon reverted to the role of Fleet Minesweepers, although, it would appear that they still retained an anti-submarine role, as the model of Ladas shows a comprehensive fit of depth charge gear.

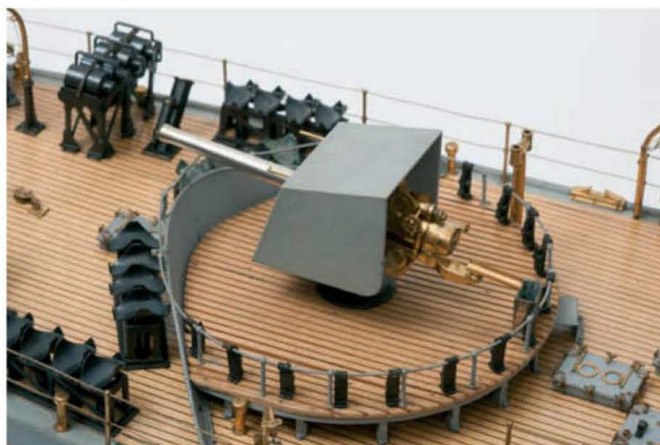
They were designed to appear as if they had two bows with a straight stem and stern and they had identical deckhouses and gun shields at either end of the vessel, with the aft deckhouse built and painted to match the bridge. Also note on the photos of the model of HMS Ladas, the painted anchor at the stern. All this together with dazzle paint was reckoned to confuse any submarine preparing to make an attack.

Although derived from a previous sloop design the similarity to the Flower is lost when the hull design is compared. It appears that they were poor sea keepers and were said to roll a lot, so it appears that sea keeping was lost in favour of an attempt to fool torpedo aiming. Most of the 24 were sold or scrapped in 1920, although a few did make it through to serve in World War II with other navies. Although details of this class of ship are fairly sparse, I think plans are available from the National Maritime Museum (for a price of course) and I think it would certainly make an interesting model.

Well, that's it for another month – I would just like to thank Ian Whitehead and Vicki Page (Communications Officer) of Tyne & Wear Archives & Museums for all their help and for giving permission to use all the pictures. **MMI**



Another view of Ladas showing the depth charge fit



Ladas' aft 4" gun



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PLASTIC KIT SCENE

DETAILS OF NEW PLASTIC MODELS FROM DIFFERENT PARTS OF THE WORLD – THIS MONTH, TWO OF THE COMPANIES ARE NEW TO MMI

AUTHOR: ROBIN TROTT  GREAT BRITAIN robin.trott@yahoo.co.uk



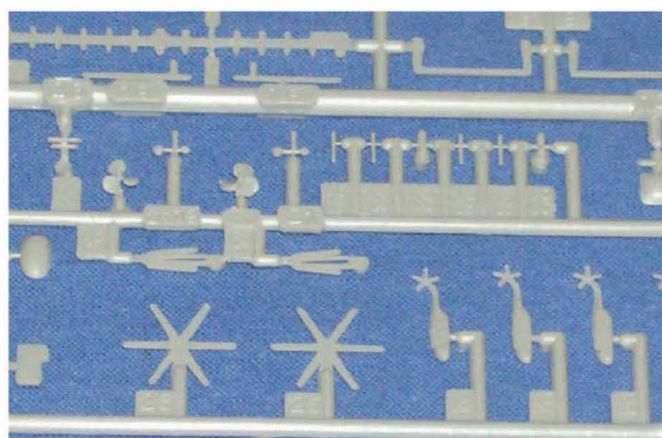
The completed model

REVELL

To begin this month here are details of the build of the Revell model of the French helicopter carrier Jeanne d' Arc (model No. 05896). The model was released at the beginning of the year, I gave full details of the model and ship in the January issue so this is just details of the build.

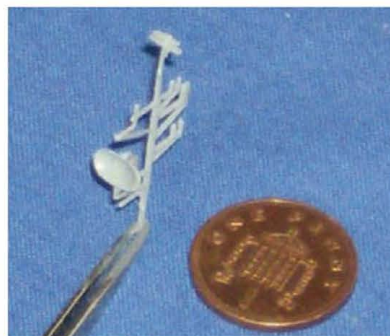
This was a lovely little model of an unusual subject, the moulding of all the parts are well defined for a model of this size. I encountered no problems at all with the fit of any parts and no flash was evident and the assembly was straightforward with clear instructions. Painting in certain areas was carried out before the full assembly, as it will prove difficult to access these areas after assembly. The areas in question are the sides of the hull that represent the inside of the openings along the sides below the flight deck and the area to the rear of the flight deck where the elevator for the helicopters is housed. Apart from those areas the model was built completely before painting.

On the bow deck just in front of the bridge is a missile launcher with the heads of rockets showing, this I fitted in place but I was not happy with it, as it did not look right. It resembled the



Some of the detailed parts

top of a rocket you would find on a firework! I checked many of my reference books and various websites but found nothing resembling this on any of the pictures I found of the Jeanne d' Arc so I replaced it with Exocet missile launchers made from plasticard. These missiles I know were carried by this ship, perhaps the other type was carried at some stage but I think what I replaced it with looks better, but that's my own opinion.



This is how small some of the parts are

Once built the model was completely painted and dry-brushed afterwards with white paint to make the detail of the moulding stand out. Decals were now added including one large one with the markings for the flight deck, all decals were fixed in place with the help of Decal-Fix – this helps to flatten the decal over any raised surfaces.

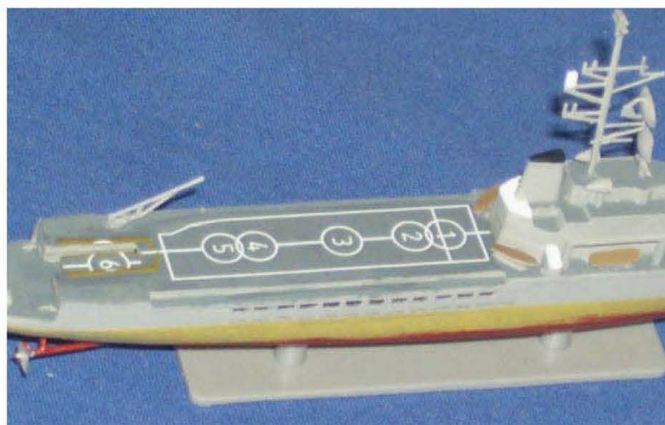
After this was completed the four helicopters that come with the kit were added, they include two with folded rotor blades.



Revell Jeanne d'Arc



The original missile launcher was replaced by Exocet launchers made from plasticard

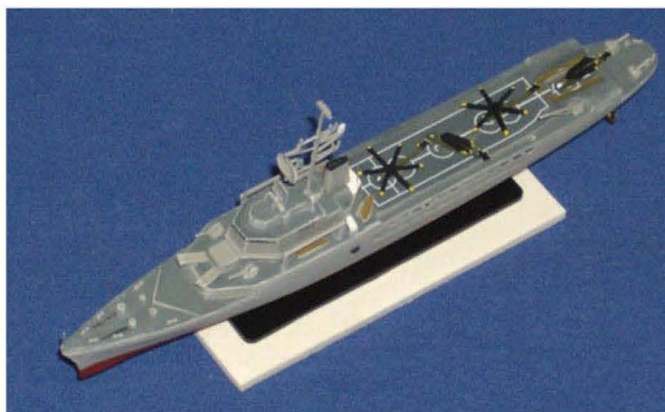


Flight deck decals fixed in place – masking tape used to paint below waterline

One of the folded helicopters was placed on the lift at the rear of the flight deck. Just to add a little more detail I added aerials to the bridge made from stretched sprue.

The display base is quite small so I enlarged the base by attaching the original base to a sheet of thick plasticard. I liked the finish of this unusual model, being only 1/1200 scale the finished model is only 15.2 cm in length and consisted of 42 parts. This size model will fit into any collection, and it only took three evenings to completely build and paint, this included the time for the paint to dry. So if you want something to give you a break in between building a more complex model this is the one to try.

Here are details of another new release this month from Revell that may be of interest to some modellers.



Viewed from above



Helicopter on flight elevator

Revell supermarine Stanraer float plane (courtesy Revell)



Supermarine Stanraer Float Plane

Model No.: 04277

Scale: 1/72

Length: 23.1 cm

Wingspan: 36 cm

Parts: 119

The Stanraer first flew in 1934 and was one of several types of reconnaissance flying boats developed by Supermarine. It was unusual as its fuselage was covered in sheet aluminium and the wings in fabric. During its service with the RAF it was used in various roles, which included reconnaissance, anti-submarine and convoy escort duty. It was retired from active service in March 1941 but continued as a trainer. After the war fourteen of the flying boats found themselves in Canada in a civilian role for many years. A detailed model that will interest many modellers as it is an unusual flying boat not normally seen.

In the January 2012 Plastic Kit Scene I gave details of the Revell 1/96 scale Spanish Galleon that was due for release that month, but unfortunately its release has now been put back until September due to problems.

Revell has also sent me details of their forthcoming modelling competition Scale Award 2012, this competition has been run by Revell Germany for many years and always attracts lots of modellers from all over the world. Full details can be found on their website. The closing date for the competition is 15th August 2012 so make sure you get your details in before this date.

Revell models are available at all good toy and model retailers, further details of these models and their complete range can be found at: www.revell.de/eu

*Revell scale award
2012 trophy
(courtesy Revell)*



ORANGE HOBBY MODELS

This is a new company for this article; they come from China and have only just started producing model warships.



Russian Corvette Steregushchy

Model No.: 3040

Scale: 1/350

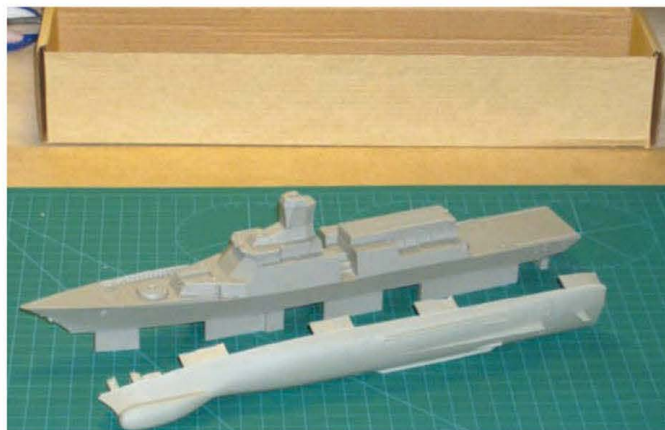
Length: 29.8 cm

Parts: 73 resin, 17 metal, 5 etched frets plus decals

Steregushchy was built in St. Petersburg and was commissioned in 2007, and is the lead ship in the Steregushchy Class with more of her type still to be built. They are classed as multi-purpose large corvettes, well armed and operating various types of radar systems. She now operates with the Russian Baltic Fleet and at the moment is one of the largest warships operating in the Russian navy. When I received the review sample from Orange Hobby it arrived from China well packed and in a stout cardboard box with only the name of the company on its ends. Inside the box all the parts were well wrapped to stop any damage while in transit. On



Detail of the model is outstanding (courtesy Orange Hobby)



The hull sections and the plain brown box the kit comes in

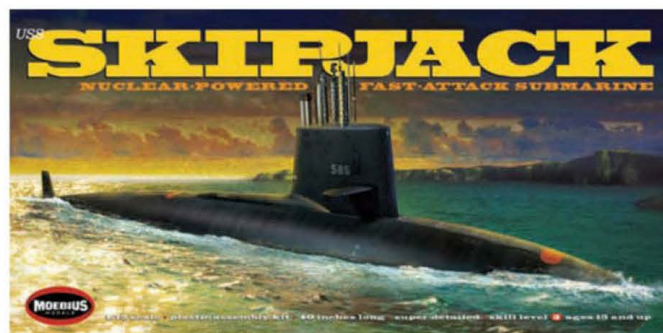
unpacking the parts I was amazed at the quality and detail of the resin and etched parts. The resin castings of the small parts have some of the best detail I have seen; this includes the detail of the helicopter. Just look at some of the photographs I have taken of the parts, the pictures of the unpainted built model are from the Orange Hobby website. I will give details of the build in a later article.

Last year I had the pleasure of building a model of the Steregushchy in 1/700 scale so I am looking forward to building it in the larger 1/350 scale.

Many thanks to Orange Hobby for supplying the sample model, for more details and information of this model take a look on their website at: www.orangehobby.com

MOEBIUS MODELS

This new model will be of great interest to modellers of submarines, Moebius are normally known for producing sci-fi and car models and unusual horror figures from films and comics so this is not one of their normal types of models.



USS Skipjack SSN-585 Submarine

Model No.: 1400

Scale: 1/72

Length: Approx 101 cm

Parts: 45

The USS Skipjack is a nuclear powered attack submarine that was launched in 1959; six of these types of submarines were built for the US Navy of which the Skipjack was the lead submarine. After her launch it was reported that during sea trials she set a record speed for a submerged submarine of over 20 knots – the actual speed set was kept as top secret. She was decommissioned in April 1990 after over thirty years of service. During this time she had seen service in nearly every part of the world's oceans and seas, including the waters close to the Russian coastline, a very sensitive area at that time during the Cold War.

The size of this model will no doubt be of interest to modellers who like to convert their models to radio control. The detail of the model is accurately reproduced and comes complete with display stand and decals for all six submarines.

Thanks to Moebius for sending me details of the model, further details can be found at: www.moebiusmodels.com



TEHNOART MODELS

I have never seen or reviewed any models from this company so I was very pleased to receive a sample model from them.

USS De Haven Sumner Class Destroyer

Scale: 1/192

Length: 59.0 cm

Parts: Over 150 resin, 90 brass fittings, anchor chain, rigging thread, 3 etched frets

Tehnoart Models are a company from Latvia; this is their first multi-media model they have produced. All their models are of museum standard, which shows they are of very good quality and have superb detail. This must be the most complete model that is available, as all extras that you can purchase to super-detail most models come as part of the kit.



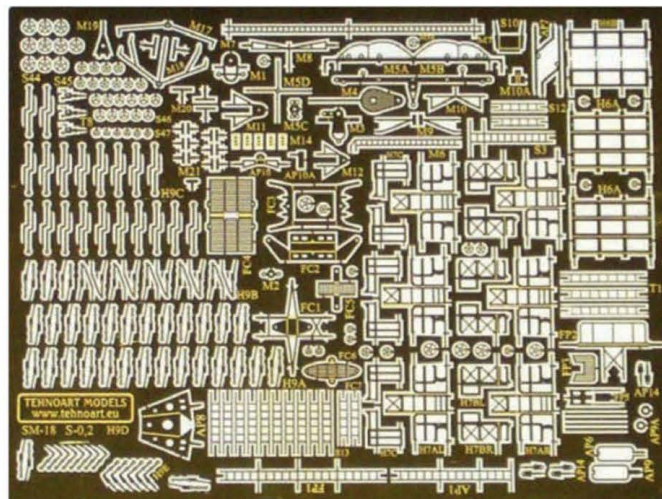
Tehnoart Models' USS De Haven (courtesy Tehnoart)



This is how well Tehnoart pack their models



The one-piece hull complete with deck fitted

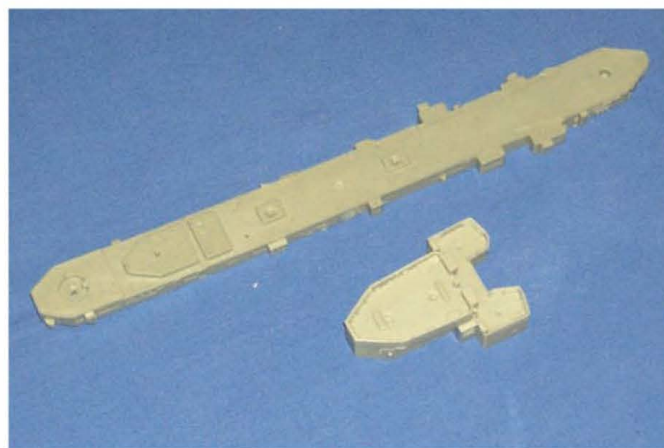


Some of the detailed etched fittings

As with any model of this quality it came well packed to avoid any damage. The hull is unusual as it is in one complete moulding with the deck in place. I have looked at all the resin and brass fittings and can definitely say their detail is very good. The etched frets contain hundreds of parts so great care is going to be needed when removing. Many of the parts are very small so careful assembly is required; it is a model that is for a skilled modeller not a beginner to the hobby. A set of diagrams printed on nine A4 sheets – three for the port side, starboard side and deck view – come with the kit showing the position of each part of the model. Also included is a CD giving step-by-step instructions on building and painting the model. The CD has over 500 photographs and diagrams of every aspect of the assembly; this type of assembly information is needed to build the model to the museum standard that the model fully deserves.

I would like to thank Tehnoart for giving me the opportunity to review the model in detail; the build will be a long one, as great care will be needed to complete the model correctly. The full details of the build will be in a future issue of this magazine once I have completed the model.

Further details of this model and other models from Tehnoart can be found on their website at: www.tehnoart.eu **MMI**



Resin superstructure parts well defined



Three A4 sheets combined to give deck plan

WATERLINES

HOLY LOCH – THE US NAVY'S REFIT SITE ONE (PART 2). KELVIN CONCLUDES THE STORY OF THE US SUBMARINE BASE

AUTHOR: KELVIN HOLMES  GREAT BRITAIN
khwaterlines@btinternet.com

As described last month, the US SSBN refit base at Holy Loch was established in March 1961 with the arrival of SUBRON 14 and the tender USS Proteus followed in November by the floating drydock USS Los Alamos. The tender USS Hunley took over in 1963 followed by USS Simon Lake from 1966 to 1970. This issue we continue the story from the 1970s until the base's closure in 1992 and also look at some waterline and for a change full-hulled models.

So in 1970 USS Canopus (AS-34) became duty tender supported as always by the floating drydock USS Los Alamos. Between 1973-1975 the older Hunley class ASs (31 and 32) were modernised to support Poseidon and in November 1975 USS Canopus was relieved at Holy Loch by USS Holland (AS-32). This deployment was the subject of an excellent article by crewman John Nugent (EA-1 (DV) USN) in the American magazine Scale Model Warships circa 1980 (my thanks to Don Hood for a copy). At this time USS Holland was fitted with a large structure aft known as the 'T-shed'. In January 1982 USS Hunley (AS-31), returned for a second tour and she too had the 'T-shed'. Finally, in June 1987, USS Hunley was relieved by USS Simon Lake (AS-33) (for her second tour) and this ship remained until the base was closed in March 1992. By 1985 AS-33 had certainly received her upgrade for the Trident missile as carried by the modified Benjamin Franklin and Ohio classes although none of the latter ever visited Holy Loch. Sometime after 1984, photographic evidence suggests that the drydock was fitted with new or modified cranes. Table 1 makes an attempt at identifying which SSBN classes could have been at Holy Loch during the various tenures.



Site One in 1984, tugs USSs Piqua and Saugus, mini-sub NR-1 (red conning tower) and to her right the submarine rescue ship USS Sunbird (ASR 15) (photo courtesy James D. Gray)



Site One in 1984, USS Hunley in the distance with boom extended (photo courtesy James D. Gray)



Site One in 1984, USS Hunley with two SSBNs alongside and a clear view of the 'T-Shed' (photo courtesy James D. Gray)

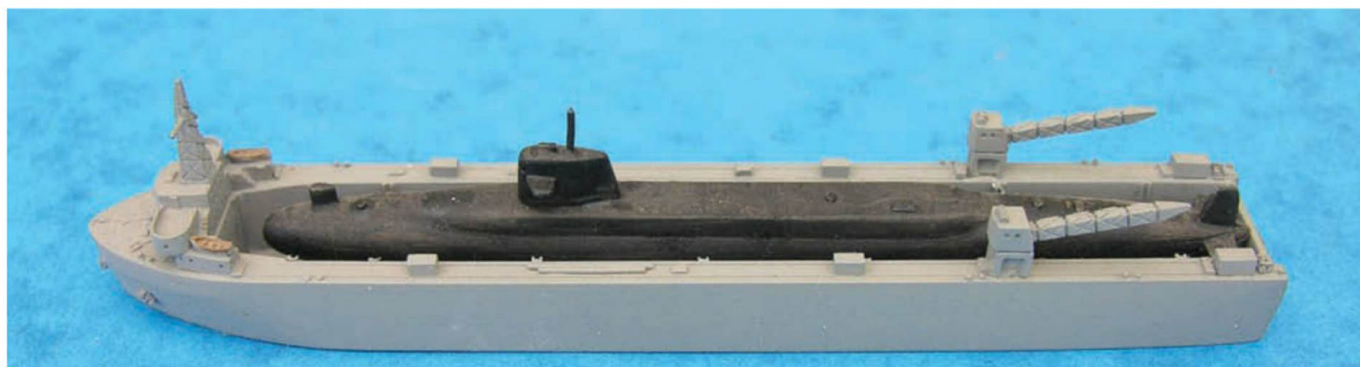


Site One in 1984, USS Hunley disposing gash (photo courtesy James D. Gray)

Various auxiliary craft were used at Site One including tugs USSs Piqua (YTB-793), Saugus (YTB-780) and Natick (YTB-760). Limited accommodation and working space was provided by the barges YFNB-31 and YFNB-42 and always to hand was the Floating Crane YD-245. The tender could have four submarines alongside with one in the drydock, the latter always docked bow facing North (i.e. towards the tender) because the keel blocks were set up that way and left in place. Submarines in the dock would always have their propellers hidden with a tarpaulin. RN boats did come alongside but were difficult to berth because of the bow planes – the only US SSBN with bow planes was USS Daniel Webster (Lafayette class). When the base closed USS Los Alamos (AFDB-7) was disassembled and its four sections returned to the US aboard the Mighty Servant. In 1996 six sections of AFDB-7 were re-united at the Keppel AmFELS Shipyard, Brownsville, Texas where, configured in two rows of three with the inner walls removed, they form the Solomon Ortiz dock, servicing ships and oil rigs (and can be seen on Google Earth).

Ship	Duty Period	Servicing	At Rota
Lafayette & Benjamin Franklin classes upgraded to Poseidon missile 1971 to 1977			
USS Canopus	1970-75	Lafayette and Benjamin Franklin classes (Poseidon)	1976-79
Benjamin Franklin class upgraded to Trident missile 1979-81			
USS Holland	1975-1982	Lafayette & Benjamin Franklin, except Trident equipped	1970-72
USS Hunley	1982-1987	As above	n/a
USS Simon Lake	1987-1992	Trident equipped Benjamin Franklin class	1972-76

Table 1 – USN SSBN support at Holy Loch from 1970 (& at Rota)



Trident's USS Oak Ridge being rather too short is a tight fit for the Ta Z50 Lafayette Class SSBN



Mountford ARDM-4 type

Models of SSBN classes are in Table 2; of related interest is Trident Alpha model Ta 202 USS Oak Ridge although at a scale 492 ft the model represents an ARD as built. Fortunately coming soon we have the new Mountford version. Two new ARDMs were built namely ARDM-4 USS Shippingport (completed 1979) and ARDM-5 USS Arco (1986) but for support of SSNs rather than SSBNs; these docks complete with a full-hulled Los Angeles class SSN are available from Mountford (MM281) either as kit or assembled/painted. Another full-hulled SSN model is Argos-49VR USS Connecticut (SSN22), a Seawolf class boat completed in 1998. For many years the only AS model was the old Superior 1/1200 of the Fulton class circa 1944 although modellers have been known to convert this to USS Proteus as in 1961. Neptun later released USS Sperry (Fulton class, as built). Again Mountford will be producing USS Proteus circa 1962 plus eventually a model of USS Hunley, meanwhile Trident's Ta 211 USS Palatka can reasonably double for any of the Holy Loch tugs. Other submarine support vessels include Trident Alphas USSs Edenton and Ortolan.

Finally, a special thanks to James D. Gray for the superb photographs of Site One from his time there in the 1980s. **MMI**



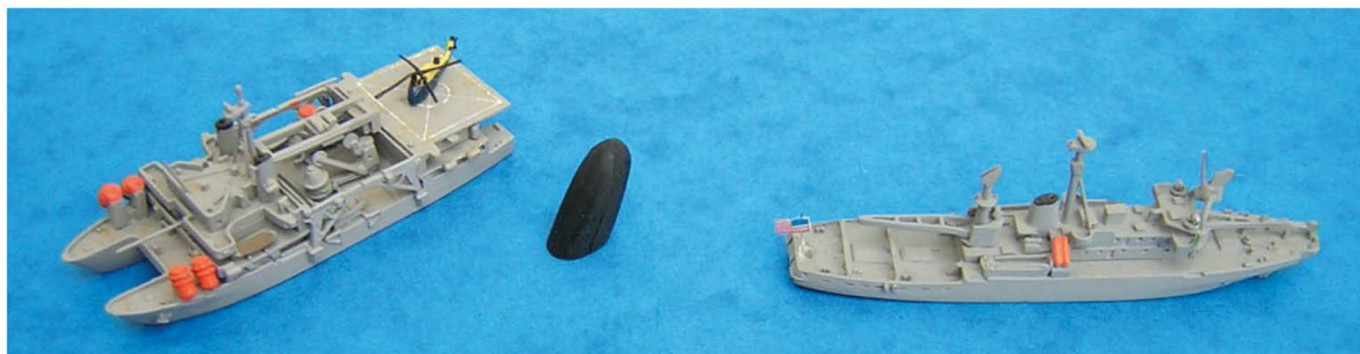
USS Los Alamos with new cranes, USS Simon Lake in the background



Solomon Ortiz in 2007 (Michael Martin)

Class (First Commissioned)	1/1250 Models (* Signifies Available)
George Washington (1960)	Wiking, Delphin 4, Trident Alpha (Ta)188, Trident (T)166, Mountford* (full hull and waterline)
Ethan Allen (1960)	HDS, T209, Mountford* (full hull and waterline)
Lafayette (1963)	Ta 174*, Star 159, HDS, Ta Z50 (full hull); Ts 144, 167 & 211
Ohio (1981)	HDS, Ta 294, T 212, Argos 101*, Triang S890*

Table 2 – USN SSBN models 1961-1992 era



Trident Alphas USSs Edenton and Ortolan gather for a rescue operation

VINTAGE MOTOR SHED – 16

WHIRLWIND AND SWORDFISH



The Whirlwind close-up



Differing styles of packaging



Tri-ang Swordfish outboard

The Whirlwind was the second member of Frog's trio of general-purpose electric motors, making its appearance in 1949 with an advertisement in the July issue of Meccano Magazine. It looked more futuristic than the Revmaster, being fully enclosed in a bright red injection-moulded nylon case styled to look like a full sized industrial motor. It carried the usual combined pulley/dog drive and was nominally for 4 to 6 volt operation. Current drain was 200 mA unloaded on 6 volts (6,000 rpm), rising to 500 mA at maximum efficiency (4,000 rpm), 750 mA at maximum power (3,000 rpm) and 1.2 Amps at the stall.

Within the nicely rounded housing were tiny spring loaded carbon brushes, an Alnico ring magnet and sintered metal oil-retaining bearings that the instructions stated did not require oiling. After sixty years or so that is no longer true and I suggest you do oil yours if you acquire one of these motors! You are likely to find, too, that it just doesn't work, because the armature has seized. The cause of this is a cumulative contraction of the moulded case halves that has the effect of taking up all the available free play

of the armature shaft, and the simple solution is to separate the two halves of the housing and fit thin washers between them at each of the three assembly screws to restore the clearance. The Whirlwind ceased production in 1958, perhaps suffering from being too similar in performance to the earlier Revmaster.

Our other subject, the Swordfish outboard motor, appeared under the Tri-ang label but like Frog this was part of the Lines Brothers Group of Companies and it used what appears to be a

version of the Frog Tornado motor. It was announced in 1958 but was withdrawn in 1960 so cannot be considered a very successful product. A quite large and expensive (39 shillings and sixpence) die-cast unit, it must have been hopelessly let down by the poor choice of a low-powered Tornado power source. The bottom end – propeller and gearing – was all nylon, which eliminated a potential source of corrosion and maintenance, but its engineering may not have been thorough judging by my example, which has poor control of the gear meshing and just a rubber grommet to hold the propeller shaft in place. The on-off switch on the Swordfish is neat, a nylon cylinder that revolves around the case of the motor by means of the lever protruding from one side. There are two transom clamps and swivel adjustment. The overall effect is not very scale-like compared to Japanese model outboards of the time. Missing from my boxed example are the metal battery clips that held four U2 dry cells to provide a 6 volt power source and form a complete package for installation in a model boat. Mine is finished in a pale metallic blue but I believe they also came in green.

Frog closed their engine division (I/C and electric motors) in 1965 to concentrate on plastic kits. A good boxed Swordfish is likely to command £30-£40 today because of its rarity; a boxed Whirlwind will likely be around £20. **MMI**



July 1949 Meccano Magazine advertisement

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FREE CENTREFOLD CARD MODEL

CARD MODEL CLYDE PUFFER

FREE CENTREFOLD MODEL OF A SMALL HARBOUR TUG

AUTHOR: CLIVE HALLIWELL



This month's model, the third of this series, is perhaps the most difficult, mainly because of the number of parts, but not a trend I intend to pursue!

TOOLS AND ADHESIVE

Only a few basic tools are required: a cutting board or mat, craft knife, steel rule and scissors. Curved nail scissors are handy for cutting out circular sections etc. Tweezers or small long nose pliers will help with placing small items.

Any adhesive that is recommended for paper or card will do. I tend to use white PVA wood glue, it is virtually odourless and water based. It is a purely personal choice.

The completed model

STEP 1



CARD BACKING

It is generally recommended that the majority of the sections cut from the plan be backed with card, for a better finish and a more robust model. This threw up a problem. Backing the hull sides with white card would produce bulwarks, which are white on the inside. Now this was acceptable on the first two models, the trawler and harbour tug, but not on a puffer. As part of the idea of these card models is to eliminate painting I suggest you obtain some coloured card, if only for the hull sides. As it happened I found some brown card; from a box containing cans of soft drinks, a fairly well known diet version! Art and stationery shops would provide card of red or green etc.

The main parts cut out, plus brown backing card (see text)

STEP 2

STARTING THE MODEL

Building the hull is my usual first step. I cut out the two deck sections, the main bulkhead and the hull sides. Because of the length of this model, the sides are in three sections: two main runs from the bow along either side and a shorter length to make up the rounded transom.

The first job was to back the two areas of deck. The card was left over-long so that a section could be folded down at right angles, at the front of the quarterdeck, and at the rear of the main deck. Before applying any adhesive the 'main bulkhead' was placed in position and the two decks held together with clothes pegs (see photo). At this stage I fitted 'L' shaped pieces of card beneath the decks as supports. I find the effort worth it, but it is optional. The decks and bulkhead were then glued together. The short section of fo'c'sle is canted up slightly to follow the rise in the hull sides, but not the rise right at the bow.

The two large sections of the hull sides were backed with brown card, as discussed above. The freeing ports were cut out and the

hawse holes, using a standard paper hole punch.

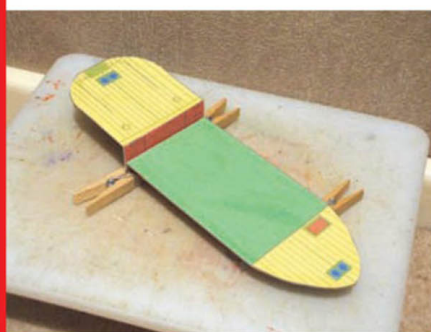
On the plan, just above the title box, is a small section of hull side with some boot-topping – this is used to form a hinge, unbacked, to join the two lengths of hull side at the bow; it supports the joint and hides the card edges which may show through.

I started right at the bow, gluing the 'stem' to the deck, adding a small 'V' bracket underneath to support the joint. When the adhesive was fully set the two hull sides were pulled in and fixed in position, using the bottom edge of the freeing ports as a guide.

The transom area was next. The card backed length was butt jointed to one side. A card backing piece was glued behind the joint to support it, and an 'L' shaped bracket fitted under the stern. Clothes pegs held all in place until the glue sets.

Finally, the remaining part is pulled round, carefully cut to length and butt-jointed to the other hull side, with a scrap card backing piece fixed in position.

Note: all these suggested backing pieces and brackets etc. are optional, but if you are building the model as part of a long-term diorama project, I think it is worth the effort.



The two deck sections, with the main bulkhead, being test assembled



The brown card backed hull sides being glued to the bow



An 'L' section bracket had been fixed under the stern, allowing the clothes pegs to hold the transom in position whilst its glue set

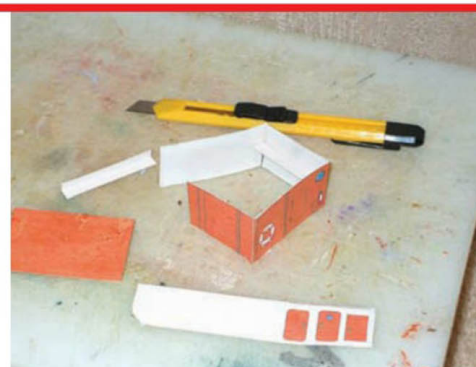
STEP 3

SUPERSTRUCTURE

Basically a 'box' that sits over the boiler and engine, with the small wheelhouse on top, and the unusually placed funnel, in front of it.

The construction is fairly straightforward. I back each face of the box with a separate rectangle of card, rather than a single length, as it seems to make for neater corners. You may notice, in the relevant photo, that I fitted 'L' section supports to the inside walls, again optional. The roof can be backed and glued in place and trimmed if need be. As well as the doors printed on the superstructure, there are three duplicates, which can be backed with card and fixed in place over their printed counterparts. This is not essential, but does add a little 'depth' to the finished model (in my opinion!)

The wheelhouse is as above. I suppose the really enthusiastic could cut out the windows and back them with clear plastic, but you would probably have to model the interior also.



The boiler/engine room, with additional doors (see text)

STEP 4



The main hold coamings and cover being fabricated

THE HOLD

With all five sections cut out, i.e. the top and the four coaming sides, a rectangle of card was cut out to back the top. It should be shorter than the cover, by the thickness of the end coaming backing card, so that the 'canvas cover' fits over the top of the coaming. At the aft end the coaming will be outside the hold's covering boards. The card was scored along the centreline first, before the canvas/boards were glued to it, so that it would take shape more easily. Next the fore'd coaming was glued in place, then two lengths of card for the side coamings were fitted (see photo).

If needed, trim to length and fit the final aft section of coaming. Glue in place the 'riveted' sides and fold round the flaps at the corners.

There are also three spare boards on the plan. These can be cut out, backed, with brown card preferably, and glued, haphazardly on top of each other, to one side of the opening.

STEP 5

OTHER FITTINGS

The funnel was cut out and blackened on what will be the inside (black felt-tip pen or black paper) before rolling around a standard pencil to get the right diameter. The steam pipe was rolled round a cocktail stick. When gluing this to the front of the funnel, add small, scrap card, spacers to maintain a gap between the two.

The two companionways are quite easy. Just the front face (the

doors) and the sides were backed then the roof/back, which is over-long, glued in place and trimmed to fit. If you have canted the foredeck up, you may need to trim the bottom edge of that hatchway, to get the doors vertical.

There are also spare skylights and a grating, to go over the tiller right aft. These can be backed (brown card) and fitted over their printed counterparts (or just thrown away!)

THE DINGHY

The 'canvas' cover and transom are integral, back both, but not the triangular flaps. Bend the transom down at right angles, then turn over and add the sides, starting at the transom. They are over-long. Glue one right up to the bow, trim to fit then bring the second side round and glue at the stem to the first side. Turn over and stick down the cover's triangular straps. I made up a couple of supports for the dinghy to sit on. Brown card folded in half and shaped across the bottom edge to fit over the apex of the hold cover.



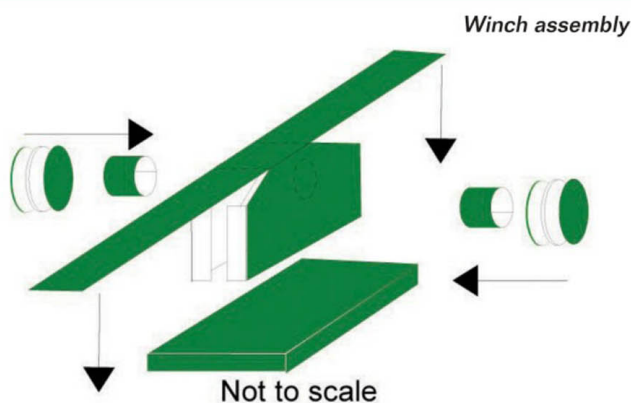
The completed hold cover, funnel and steam pipe, dinghy, winch, spare skylight and companionways

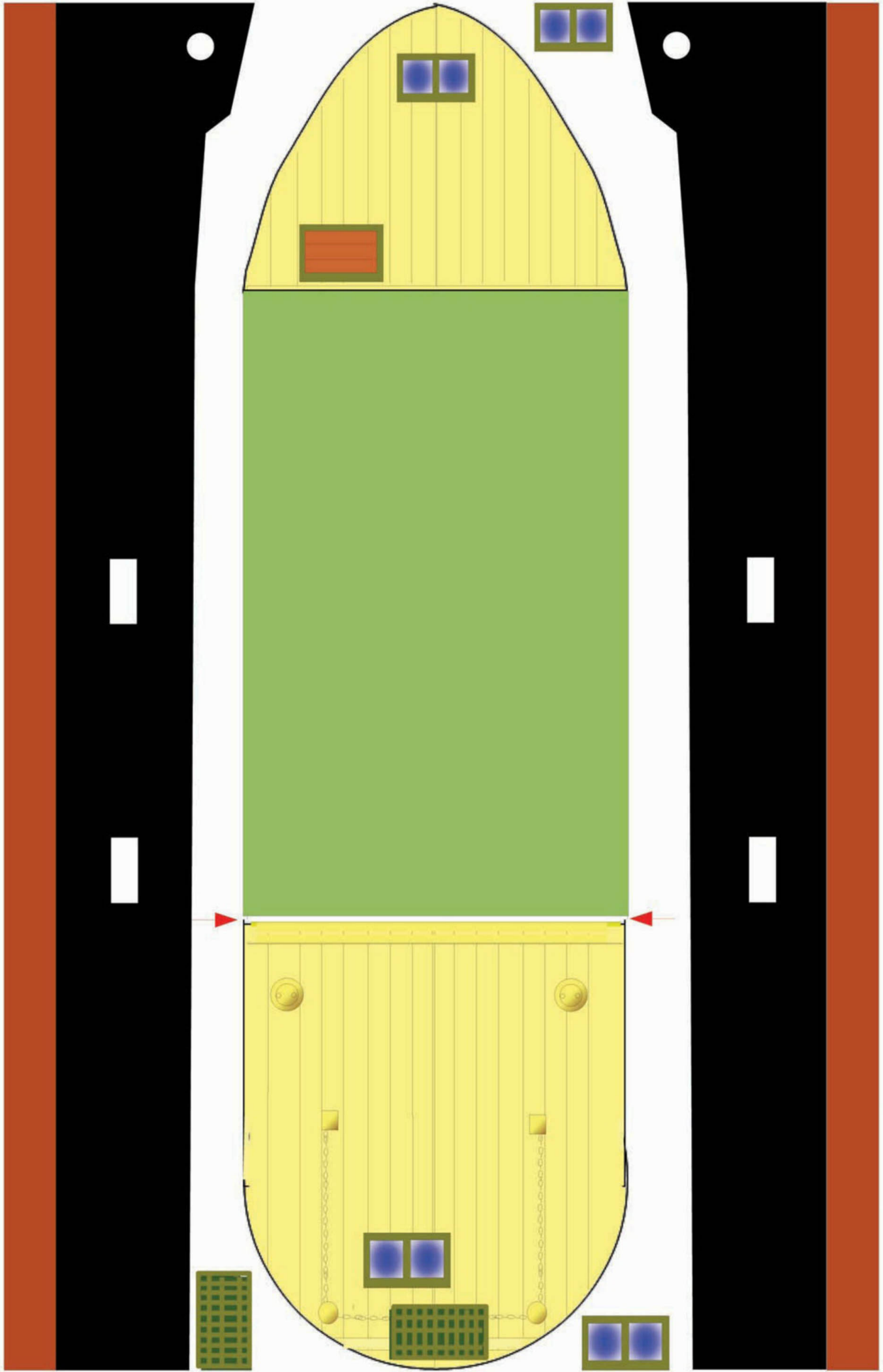
STEP 6

THE WINCH

On the real puffers this is quite a complicated piece of equipment, doubling as anchor and cargo winch, I believe, and beyond the scope of this project – a much simpler version is included in the plan, see drawing.

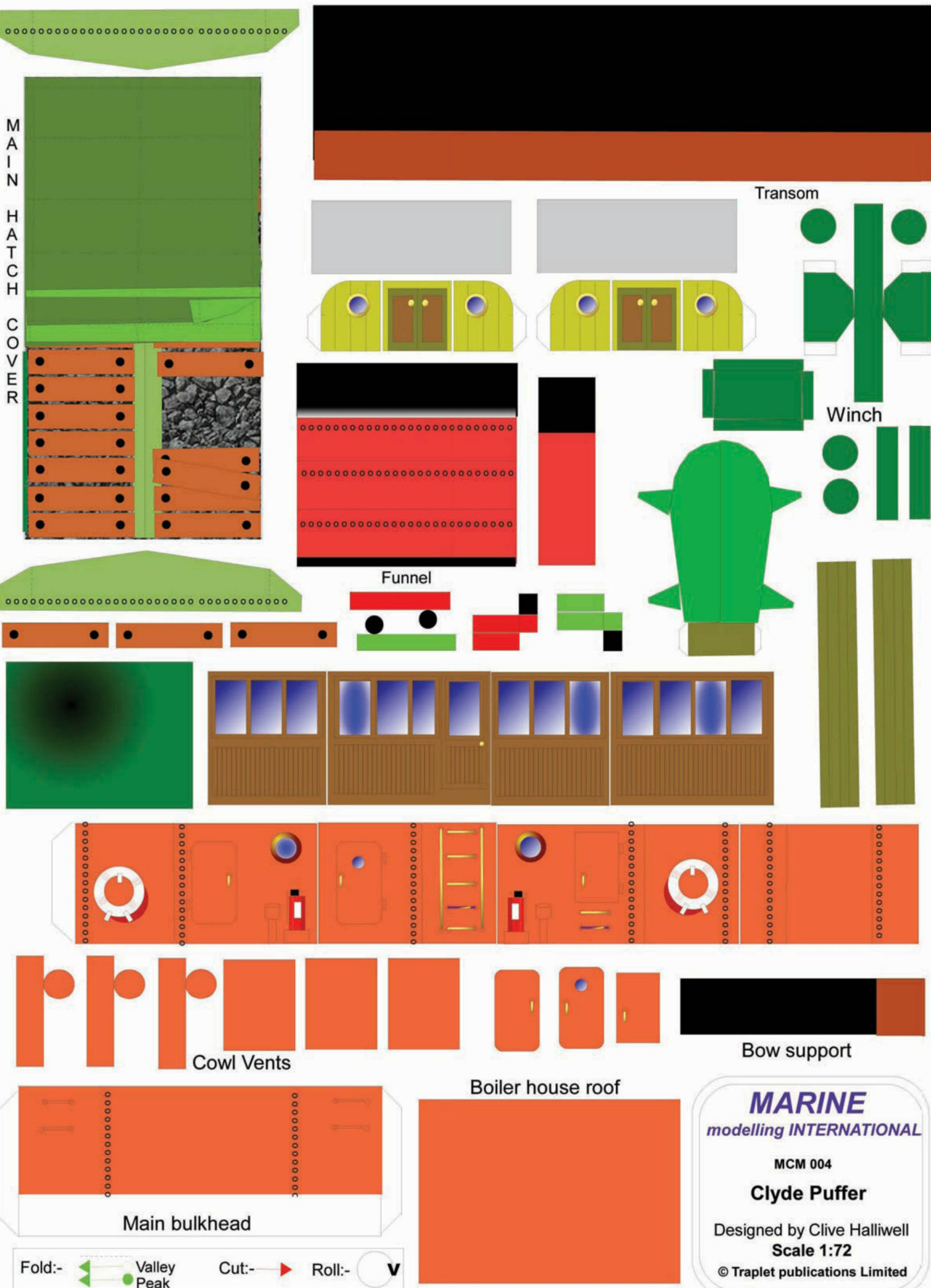
I used a hole punch to create neat discs for the winch drum ends, and punched out a card disc to go between each of the two sets of coloured discs. The winch drum cylinders were wrapped round a cocktail stick. I made a hole through the gearbox and used a short length of the cocktail stick as an axle to support the two completed drums (optional). Of course the more skilled may wish to add or amend their version; I just added half a press-stud as a brake hand-wheel.





MAIN HATCH COAMINGS

MAIN
HATCH
COVER



Transom

Winch

Funnel

Cowl Vents

Bow support

Boiler house roof

Main bulkhead

Fold:- Valley Peak Cut:- Roll:-

MARINE
modelling INTERNATIONAL

MCM 004

Clyde Puffer

Designed by Clive Halliwell
Scale 1:72

© Traplet publications Limited

STEP 7



COWL VENTS

My preferred method is to purchase commercial items! However, as that does not really enter in to the spirit of things I made up a pair for the boiler house roof and one for the fo'c'sle. The tops are basically a short tube, blanked off at the rear and fixed, at right angles to a tubular upright.

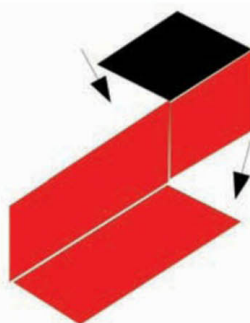
Bow shot of the model completed from the plan

STEP 8

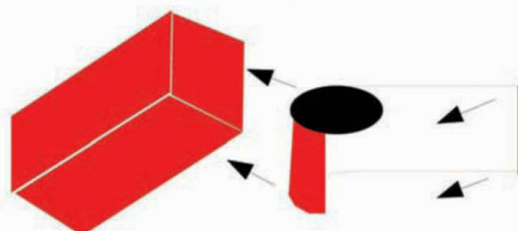
NAVIGATION LIGHTS

The navigation light boxes need a little patience. The red and green lengths are again oversize; just roll enough round to make each lamp. See drawing of port light, starboard is opposite handed.

That completes the build directly from the plan.



Navigation lights assembly

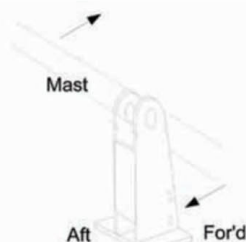


STEP 9

ADDITIONAL DETAILS AND FITTINGS

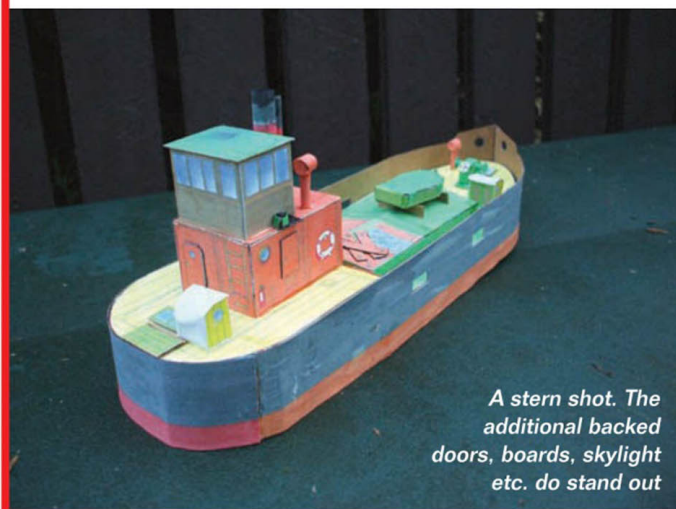
There is still plenty of detail that could be added: ropes, anchor, fenders and probably the most conspicuous, the mast and boom. Something like a cooking skewer would suffice either fixed through a hole in the deck, or for the more enthusiastic, housed in a tabernacle; either in the raised position, or lowered in to a small crutch on the front edge of the boiler house roof. In the upright position it should have shrouds and stays supporting it etc. but perhaps this is getting away from the simple cut and glue genre. So from here on it is down to personal choice; as stated previously the scale is similar to the OO railway scale and other items and crew are available commercially. Certainly if you are building it for a diorama, a few additions will greatly improve its look.

Tabernacle assembly

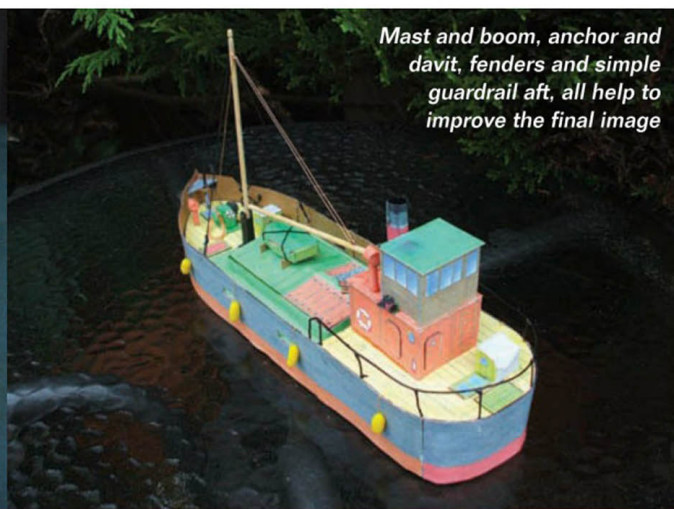


A SIMPLE TABERNACLE

Mast and boom, anchor and davit, fenders and simple guardrail aft, all help to improve the final image



A stern shot. The additional backed doors, boards, skylight etc. do stand out



I really enjoyed the build of this classic little vessel – hope you do, if you do! **MMI**

NOTE:

because of the number of parts for this model, the traditional 'fold arrows' are not included. However, I think a study of the plan against the photos and drawings should suffice.

Overhead view showing how boat deck and its printed overlay was finished to perfectly match the curve of the front superstructure

NEW ZEALAND

HERE COMES MARIE *part 2*

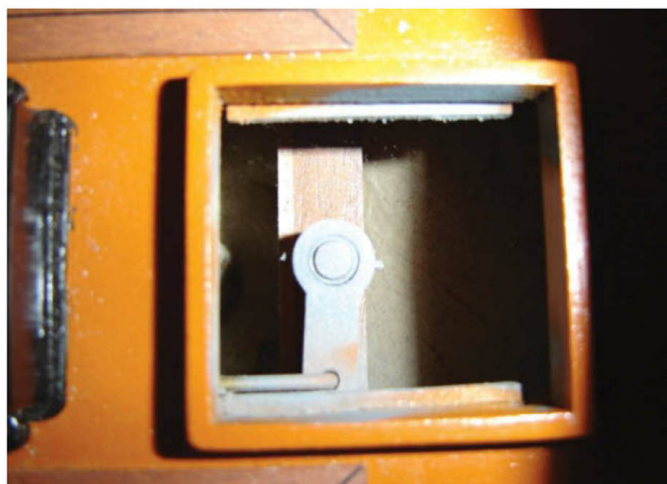
THE CONCLUDING PART OF THE BUILD OF THE MARIE FELLING TUG

AUTHOR: JOHN DENHAM CONTACT: dentech@ihug.co.nz

MAIN AND FRONT SUPERSTRUCTURE

This moulding in my case I found also did not have straight sides at the deck line and the waviness was not acceptable for a true fit to the deck. To correct this I had to glue internal braces at the critical points to push the back end outwards and also to pull down on the sides, glue and clamp some 1/2" x 1/8" spruce strip wood where needed, making sure they were in such a position as not to foul the coamings. The end result was much more pleasing and

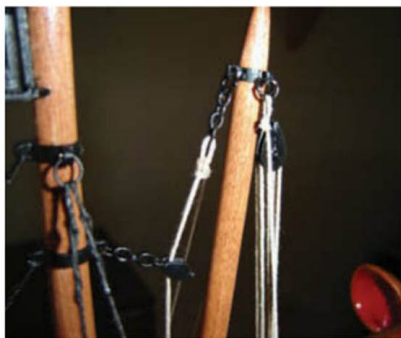
the trued edge right around the superstructure moulding looked correct. Now came the file, sand and try method of forming an accurate matching edge for the camber fore and aft and then working on the longer sides and getting a good mating edge for the sheer. This is a time-consuming job but stick at it until a perfect joint with the deck is achieved. You may need filler as I did, on the edges. Tamiya filler again was used here and made the job a lot quicker and easier.



The tiller access cut out at stern. The grating block stops can be seen on two sides. Rudder bearing bracing can just be seen also



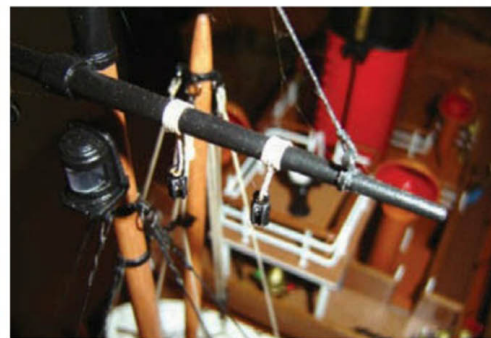
Here is a view of the brass square section tubing running under handrail, which was used to remove the bulwark distortion



Another view of derrick gear – all lines are tied off, knotted and glued



Boat falls showing sheaves correctly threaded



The finely tapered signal yard with detail of collars and signal lanyard pulleys and lashings

I continued on as per instructions at this point except I did not make up and mount the bridge per instructions as I could see there might be some grey areas here with accurate fitting to its deck. Later on I found this to be so. So, I made all the cut outs for the two gratings and the internal companionways. These were done with the 12 V jig saw and another great little tool which I wouldn't be without, a Böhler 320-215 12 volt sword saw. These tools again save a lot of time compared to the drilling and filing method.

From the die cut sheet, I made up the port and starboard companionway boxes and ensured they fitted nicely inside the moulding. I found some trimming etc. was needed to get them snug. Then I made up the stairs, assembled and painted everything up ready for gluing in. The engine room companionway at the centre after end of the main superstructure is also not mentioned in the book but parts are on the printed ply sheet #57 - #59. This was made up and fitted. Filler is required to fare in neatly to moulding and I also applied PVA glue rivets with a needle.

Then all the deadlight holes were marked on the moulding, drilled with a step drill and the white metal deadlights glued in. Engine room skylight casings and deadlights were made up and painted. Next, all superstructure doors were cut out and glued to their respective positions complete with hinges and handles attached. Also the two lifebelt brackets.

I then spent the next few days making all the cowl ventilators. I had to chew out a lot of metal from the base of the large white metal cowls so that I could fit them neatly to the spigot, which I had machined on the wooden dowel. This is all time-consuming work but doing it properly really pays off and when finished and painted I was very pleased with them. These very large ventilators are a big feature of this tug so they have to look the part.

The bases of all the ventilators have to be corrected with filler underneath so that they finally mate to the angle of the cambered decks in a vertical position. This is all 'put and try' work but with care can be achieved and should look true when mounted.

TIP

Because ventilators are so vulnerable, I never mount them until very late in a build. It is much easier to handle the various structures for glueing, painting etc., without them getting in the way. When I do finally glue them, I first mark out four very small 'target' dots on the deck using a 0.1 mm Pelican pen. These dots designate the base circumference of the ventilator to be fixed. This gives me an accurate aiming point when placing the ventilator on the cyano glue bed. Always ensuring, of course, they are the right way around! The dots can be removed with a dampened cotton bud if you're fussy.

The superstructure and engine room skylights were then undercoated and painted. Acetate discs for the barred deadlights were cut with a hole punch on a copper anvil and then pushed firmly into the castings. When correctly in place they were slightly convexed and as I found them very difficult to push out due to this, I didn't glue them. Finally, I carefully glued the two skylight casings

to their respective positions on the deck. All the funnel deck stanchions were then marked out and drilled.

The tow hooks and frame was assembled and offered up to its recess in the moulding. I found the recess required some reforming and filling slightly to ensure a snug fit of the frame. The frame casting also needed a bit of filing etc. This took a little time, but as always things look much better for all the extra work and care. I decided to drill the frame to take four 9BA hex head bolts (three top, one bottom), which finally bolted the towing assembly to the superstructure. When painted and attached the tow hook really looked the part and it could easily be removed if a stronger towing arrangement was required at a later date for barge towing etc.

Now comes the fiddly work – the funnel deck handrails. I thought these would be easier to do in situ rather than jig them and this proved to be the case. First, I ran a rule around the handrail line on the funnel deck and marked all stanchion sites, making them equidistant and symmetrical. I used the box picture as a guide for locations. Then a 1.0 mm, followed by a 1.6 mm drill was carefully put through all site marks. Using this method, I managed not to damage the gelcoat. Now I sorted out all the two-hole white metal stanchions and carefully cleared all the holes in them with a 1.6 mm drill mounted in a hand held pin chuck. This is very important because you don't want to be fighting these holes when trying to insert the 1.5 mm brass rod rails. Also, I used a small test piece of rod and inserted this through the holes of every drilled stanchion to ensure that it passed through easily and at a right angle. It doesn't matter if the rod is a little sloppy, any play will finally be taken up with the gap filling cyano. All this was done because I didn't want to be adjusting and correcting once the stanchions were finally glued in their deck holes.

All the stanchions were then spray undercoated followed by two coats of white acrylic, brushed on, while holding them all standing up in a drilled piece of wood. When dry, a small dab of cyano was applied to each deck hole and a stanchion mounted one at a time, ensuring that (using your little test rod) all stanchion holes were in line as I worked along the deck. What I am aiming for here is that the final brass rails slip through their holes right down the stanchion line without having to distort the stanchions in any way to accommodate the rails.

It sounds complex but when you are into the job, all will be revealed! I never had a problem fitting any of the rails this way, just started from one end and worked my way around. The rails were fixed with cyano as I progressed, joining curved corner pieces where necessary within the stanchion rail holes. Finally, the rails were hand painted white, two coats, and one more coat applied to the stanchions to finish them but I didn't paint them right to the deck to avoid marring the deck paint. I also placed some paper on the deck adjacent to the painting site to avoid small paint blobs that can sometimes flick off the brush. It's not easy to clean these off the deck as they dry so quickly.

Handrails I made up with 1/4" x 1/8" mahogany. All corners were mitred and after sanding, two coats of satin acrylic varnish were applied.

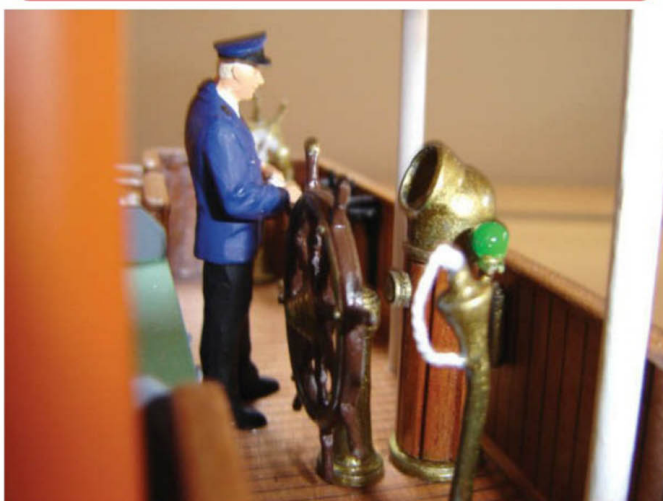


This shows how accurately you must place the large tow beam brackets to align exactly with the rear edge of the superstructure

There is not nearly so much work to be done on the front superstructure moulding. Only one door to be attached and deadlight holes drilled out. Once I had perfectly located this structure on the deck by ensuring its top rear recess mated exactly with the bridge deck, then I marked the main deck and glued small coamings to accurately locate it in place. Undercoating and painting followed and finally, the acetate lights, which were cut with a hole punch on a copper anvil and carefully contact cemented with RTV silicone applied by a pin to the interior of the dead lights. Unfortunately, I couldn't persuade them this time to convex in their plain dead light castings (slightly larger ID (inside diameter) to the barred dead lights). I didn't glue the front superstructure to the deck until just prior to rigging the mast and then I only glued about 20 mm at a point inside the cross passage. Nothing moves with this system and it allows the structure to be easily removed at a later date if an access cut out to the forward hull is needed.

TIP

When applying small amounts of cyanoacrylate to a job, I use a blunt (grind the point off) felting needle, which you can buy at good craft shops. They have minute grooves ground in them and these hold the glue (I only use gap filling grade) until you touch it to the target point. You only need one needle and it's easy to scrape any hardened glue off it so they don't deteriorate with use. Also, don't run your rails until the bridge is accurately sited on its deck. This is important because the forward end rail fixings terminate on the bridge stanchions. It's much better when cutting your rails to be working to this known location.



Interior of bridge showing placement of fittings

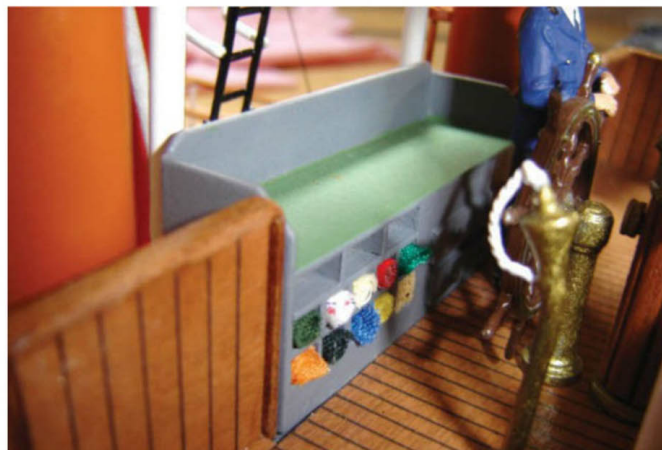


Chart table and flag locker complete with flags. Note how the cabinet has to be made up to mate to the deck edge and fits nicely between sidings

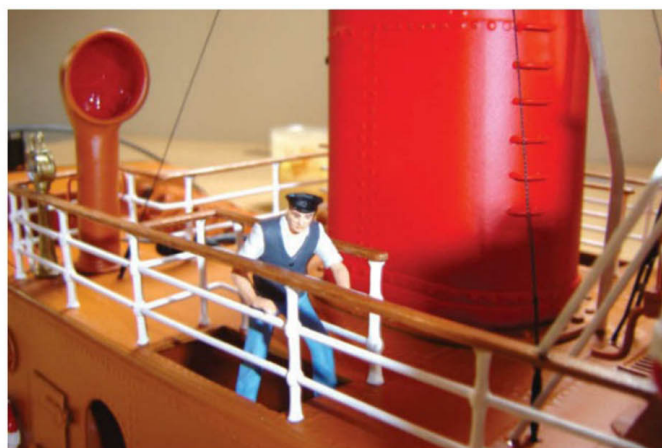
Now, reading through the instruction book, I noted that the main bridge stanchions had to be butted up against the boat deck. In order to satisfy this location point, I decided to first construct the boat deck, mount it to the front structure and then proceed with the main bridge knowing that the bridge would be accurately located fore and aft because the supporting stanchions would have an exact locating point, the boat deck.

First I cut out the boat deck components and compared them with the top of the front superstructure profile. As I thought, these didn't match perfectly and would not have looked correct without some work. So, with the deck overlay offered up to the superstructure, I scribed a new outline on it to match the latter, keeping the printed deck margins as accurate as possible. I then cut to this line. Then I cemented this corrected overlay to the ply deck and cut/sanded the deck down to match. Now I had a deck assembly, that when mounted on its stand offs on the front superstructure, looked absolutely matched in profile. With the boat deck finally stained and varnished and with its edge painted to match the structures, I placed the front superstructure onto its coamings and was ready for the bridge. Marie was starting to look real interesting now!

MAIN BRIDGE

The eight bridge stanchions had to be cut to length per instructions but the 3 mm rod supplied did not mate with the deck collars, which were nearly 4 mm diameter. Also, the rod was copper plated steel, which I didn't like so I made all my stanchions from 4 mm brass rod. This was less work than filling and drilling the collars and the larger stanchions didn't look wrong.

After carefully preparing and drilling the bridge ply deck and overlay



This shows details of the funnel deck, stays and bottle screws correctly angled. Crewman is another Preiser figure with hands cut and repositioned

per the book, all the stanchions were inserted ensuring their correct fitted lengths. Next, on went the collars and everything was finally glued up. Make very sure at this stage that all stanchions look perpendicular. Eyeball the work all the time for correctness. This assembly was then totally spray undercoated in grey. Then the base sections of the stanchions and the underside of the ply deck was top coated. Top of the deck is left grey. The deck overlay was then slid down the long searchlight deck stanchions, and glued to the deck. Everything aligned perfectly and I was happy so far. The overlay was finally varnished. Next I made up and painted the two water tanks. These were glued in their respective positions on the bridge deck.

I decided to complete construction of the bridge in situ rather than on the workbench and this system proved to work well. So, this being the case, next I mounted the previously made sub-assembly to its position on the deck. The front stanchions should butt right up to the boat deck edge and the assembly centred accurately. Always ensuring symmetry of this component before making my little target marks on the deck, I then glued the deck collars and mounted the assembly. You will find that due to the deck camber, you will have to hold the bridge assembly down hard at the extremities until the cyano hardens. This camber, quite correctly, will be transferred naturally to the bridge floor itself. At this stage, I hand painted the searchlight platform stanchions white.

Now all that remained was to slowly build up the components of the bridge from the printed ply pieces. I had no trouble with this but had to trim some pieces for exact fits here and there. Mahogany handrails were fitted as before with all corners mitred, of course.

With all sidings finished and varnished I then made up, painted and mounted all bridge furniture before fixing the searchlight platform in place. Next I made up the chart table and flag locker from the printed ply sheet. I found that this had to be made to fit the actual space available and so all ply components had to be custom cut, so to speak. To completely finish the table, painted and ready for fixing took nearly a day! Making the flag pigeon holes are real tricky but it was very satisfying to see it finished and mounted.

Then I mounted the skipper at the wheel. He was a Preiser railway figure with a modified hand position and I was very pleased with the reality of his appearance. Then the port and starboard running lights and their backboards were made up, painted and fixed in place together with all the hand painted life belts. The port and starboard step assemblies were constructed next, painted and fixed to the bridge and funnel deck. The main bridge was now complete and Marie was coming to life.

SEARCHLIGHT PLATFORM

Construction of this is very straightforward and I followed the book but did not like the single hole stanchions supplied for the circular railing – very flimsy. One was also too badly damaged to use. Enquiries also revealed no equivalent stanchions were available from my friends at Float a Boat, Australia, so I had to have a rethink if I was to get on with the build. There were some extra two-hole stanchions left over from the funnel deck railings so using these, together with a couple of brass ones I had, I constructed a square guardrail set-up. Again, I know purists will be screaming, "But it's not to prototype!" Maybe, but somewhere along in her career, Marie Felling may have had a refit in this department after a crewmember fell off the platform! To me, it looks great and I'll live with it. Hand painting rails, stanchions and mahogany handrails was as for the funnel deck.

I then made up the platform's ladder, painted and mounted it correctly with its bracing arms. Finally, the searchlight was made up from the white metal parts, painted and mounted centrally. This completed the searchlight platform. Things are really looking good now and I'm more than eager to plough on with the build.

LIFEBOAT

Construction of this vacuum formed plastic boat was very straightforward and no problems were encountered. I spray-painted it an off white and made the thwarts up from mahogany strip wood.



This shows starboard side bridge steps and rails. Note lagged whistle pipe and searchlight ladder braces. Note deck handrails terminating at bridge stanchion per text



Bridge mounted on its deck with water tanks fixed. Note camber. The front stanchions should just touch the boat deck when fitted correctly

Ensuring that the cradles were correctly centred, I then glued them on to the deck. Cruciform bollards were painted up and mounted per instructions as were the ring bolts for the tie downs. Then I lashed the boat down with the correct cordage.

FUNNEL

The funnel has rake and the moulding was very good, just some filing and filling at the mould seams and base edge required. It is very, very important to set the funnel perpendicular. I have seen some that aren't and it's not a good look. My funnel moulding, when placed on its base was definitely not true and had a starboard lean. I corrected this by running a bead of Tamiya UV filler along its bottom edge where required. By placing and trying, sanding and refilling to suit etc., I finally achieved a true fit when critically eyeballed.

The funnel was then drilled to take the four stay eyes, whistle mount and steam pipe support brackets followed by an undercoating. When dry, the funnel was masked to suit and the top section sprayed black. Masking the black off, the lower funnel was sprayed with Tamiya Bright Red gloss. When dry, the whole thing was given a good coat of Golden matt clear. This takes the gloss down to a nice realistic finish.

I was very happy with the end result and promptly cyanoed the funnel to its mount, knowing that now it was sitting in its true perpendicular position. The steam pipe and whistle pipe were made up, painted and fitted. I did not use the dowel provided for the steam pipe as it was under size and used some aluminium tubing, which I had instead. Next I drilled the holes in the deck to take the four stay bottle screws, painted and glued them in ensuring they were angled slightly toward their respective funnel eyes.



Finished tow hook bolted in its recess. Also, note deck stanchion placements at corners



One of the internal companionway boxes glued in place. Note other strip wood pieces, which were fitted earlier to remove distortion of the moulding edge



Looking inside the main superstructure. These are some of the braces which had to be fitted and glued to remove the distortion in the moulding

TIP

To gauge this angle, I first tie off the stay to the funnel eye and holding it tight, aim the stay end at the top of the pin chuck handle whilst drilling the mounting hole. Doing it this way, when the bottle screws are glued in their angled holes and the stay attached and tied off, the bottle screws will be pretty right for angle and if necessary, can be perfectly adjusted by bending slightly.

MAST, DERRICK AND RIGGING

The pine mast and derrick dowels have to be tapered. Years ago I only had an electric drill for this sanding operation but it did the job.

Now I have a Unimat lathe and I find it much easier to manipulate a job like this. The various diameter station points (where the collars are located) and mast/derrick lengths are given in the book and I used the rigging lug collars as gauges as I work these points with sandpaper.

When your mast has been cut to length and the lug collar station marks have been scribed, you obviously can't just start sanding to these marks because you will lose them in the process!

What I do is to score cuts at these points while the mast is being rotated in the lathe. I do this with a small cutting off wheel but you can use a needle file or saw. Take the cut about 1-2 mm deep. Now you have permanent, accurate station marks that won't disappear! Sanding carefully along the mast, obviously more at the top (thinner) end, make regular diameter checks with your lug collars. If you can see that with progress a mark is being lost, score it again. Don't lose it! With care and constant eyeballing, you should achieve a perfectly shaped mast.

The derrick is done similarly but is simpler. The base taper can be gauged with the swivel end casting as you go and the top with one score mark for the collar position. The signal yard is always chucked at the centre and just sanded freehand using the eye collar as a gauge at its station point. Ensure symmetry of taper when sanding the other end.

Throughout this operation the trick is to sand little, check often. You don't want loose fitting collars!

The finished mast and derrick was stained a suitable colour and finally satin varnished after all the painted collars were fitted.

I thought there was a need for a mast step because simply glueing it in the 8 mm holes in the boat deck and superstructure would have been insufficient for fixing strength in my view. So, I glued a piece of 15 mm x 3 mm spruce strip wood across the superstructure, fore and aft, about half way between the port light line and the base. Then I put the mast in place and when perpendicular (I sighted it against the funnel centre because this is what you see!) Fore and aft I checked it with the bubbles in my eyeballs! When happy with its position I marked the step. After drilling and mounting the mast again I checked that all was true and finally glued it in place. Make sure it's orientated correctly!

Rigging is straightforward, just be careful not to cross over your pulley ropes when threading up the sheaves. It's easy to make this mistake and they look ugly if you do this. I use jeweller's forceps to help thread the knots at tie offs at the eyes etc.

ANCHOR WINDLASS, STERN CAPSTAN, STEERING GEAR, DOWTON PUMP, DAVITS

All these items, which are like little models of their own, can be made up at any time and I found no problems with any of these except perhaps a lot of cleaning up of some castings. But this can always be expected to some degree and always pays off, resulting in a sharper appearance to the item.

When mounting the anchor windlass to its deck position, glueing the outboard bearing support's plinth to the deck I did find tricky. This was because it was hard to get everything dead true and square on the cambered deck whilst attempting to cyano at the same time. What I did was to make a little 1/8" x 1/8" mahogany coaming with mitred corners that exactly fitted the plinth block. I slid this onto the block a little way up, positioned everything correctly on the deck, then while holding everything steady placed small drops of cyano on the deck close to the plinth. Then the coaming was pushed home to the deck. With this method there was no chance of messy glue marks on the deck caused by positional adjustments.

TECHNOBOTS SOUND GENERATOR AND SPEAKER Baffle

The speaker baffle has to be placed under the main superstructure rear grating which is left open. I worked out the height for this so as not to foul the structure to be about 40 mm. Then, from wood scraps I glued up in situ, two 1/8" W x 140 mm channels either side of the deck cut out (you can see them in the picture). The baffle itself is made from 1/8" ply and cut out to accept the speaker, which is supplied with the unit. Cut the baffle to suit the taper of the deck cut out sides, which are tapered and glue it to the baffle sides. Also, glue two stiffening pieces across the baffle edges, front and back. I stuck on a speaker cloth of thick corduroy. I found that driving the speaker with 12 V was too loud so I stuck a 250 ohm dropping resistor onto the battery and fed the generator from that (you can see it in the picture).

You can still clearly hear the chuffing from 100 metres away!

CONCLUSION

Well fellow modellers, that is the end of my story – the building of Marie Felling. She took about two years of my spare time and all the hair tearing was worth it because you certainly learn a great deal from a build of this complexity. When I finally took her to the pond she was a delight to sail and I got a real buzz out of her. The steam engine sound generator was really worth fitting as it certainly adds another dimension to the model. Later, I may fit a smoke generator in her as I think there will be sufficient space below.

If any of you readers are thinking about building a large model, do give Marie a go. If you do, I sincerely hope that my story will help you to better iron out the bumps during your build.

Please feel free to contact me via my email address, which is printed at the head of this article if you want any further information on the build and I will do my best to assist. **MMI**



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MS SAGA ROSE

GRAHAME DESCRIBES THE BUILD
OF HIS FAVOURITE CRUISE SHIP

AUTHOR: GRAHAME PENN

HISTORY

This elegant ship began her career as Sagafjord, the flagship of the Norwegian America Line. She was built near Toulon, between 1963-1965, as a dual-purpose ocean liner and cruise ship of 24,474 tons, with a passenger capacity of around 590. She had a specially strengthened steel hull to withstand the Atlantic crossings and aluminium was used to construct the entire superstructure from weather deck to the funnel.

In the early 1980s Sagafjord was transferred into the Cunard Line ownership, still retaining her name and underwent extensive rebuilding. Then in 1997 she was sold to Saga Shipping and she again underwent extensive refits at Southampton to upgrade her to a 5-star cruise ship. As Saga's new flagship, she was renamed Saga Rose, providing twelve years of reliable service, with my wife and I enjoying many cruises on her. I have always enjoyed a model making challenge so, in 2006, I decided to build a model of the ship to add to my fleet.



BUILDING THE HULL

I purchased a set of 1/192 Jacobin plans of Sagafjord, drawn by Gerald L. Y. Hitch, just prior to her transfer from Cunard to Saga, which I was able to adapt. This gave a model with a length of 39" and a beam of 5¼". I decided not to make it a working model, because it would have been too difficult to gain access to motors, batteries and R/C equipment due to the complexity of the superstructure.

I used plank on frame construction for the first stage. The wooden keel was laid down on a building board and then fitted with 4 mm birch plywood frames cut according to the drawings, allowing for the thickness of the planking. Provision was made for the bow thruster with a piece of 15 mm copper tube. Anchor housing boxes and the hawse pipes, together with the two propeller shaft tubes were fitted at this stage. The hull was then planked overall with strips of 6 mm x 1.5 mm tulipwood, pinned and glued into place with PVA woodworking glue. This resulted in a good strong basic hull, which was then given a thin coat of resin to seal the wood and provide a key for the superglue used in the next part of the construction, when 1 mm white styrene sheet was used to simulate the steel plating on the original ship.



The completed wooden framework for the hull before planking



All the planking with 6 mm x 1.5 mm tulipwood strips has been completed

On one of our cruises, I took a series of photographs of the ship's side to record the steel plate shapes and welding lines. These I transferred on to the plan and used them to cut the plates to size and shape from styrene sheet.

Holes were drilled for the various ports and the rectangular windows were cut out. The plates were then stuck on to the wooden hull with superglue. This gave a good representation of



Starting to add the styrene plates to simulate the steel plating on the original ship



The fully painted hull awaiting the addition of the nameplates, the bow thruster and the stabilisers

the ship's hull, which was painted with Halfords Red Oxide primer. Above the waterline, the hull was given several coats of Humbrol Midnight Blue to match the ship's colour scheme. Below the waterline was left Red Oxide, with a red boot topping and white waterline.

The ship's nameplates and other markings were then added. The ports were glazed using appropriate sized 0.25 mm clear PVC sheet discs, cut with a hole punch and pressed into place. Finally, stainless steel propeller shafts and a pair of bronze, four-blade propellers, supplied by Prop Shop were fitted. Support brackets for the aluminium superstructure, which is wider than the hull, were cut to shape and glued along the top of the model hull.

BUILDING THE SUPERSTRUCTURE

For materials I used white styrene sheet in various thicknesses: 1 mm for the various decks, 1.5 mm for the bulkheads between the decks and 0.75 mm for the superstructure side panels. I also used various plastic sections from the Plastruct range of plastic sections. Since very few commercially produced fittings were available at 1/192 scale, I fabricated most of them myself from white styrene. I left most of the small white fittings unpainted, thus preventing the loss of fine detail from successive coats of paint. It would have been impossible to fit individual planks for the teak decking at 1/192 scale, so I used 1/64" plywood sheet, carefully drawing in the black caulking lines with a steel rule and a fine black pen, using 1 mm graph paper as a guide for spacing. These were glued to the styrene decks with epoxy glue.

I was pleased to be able to purchase some photo-etched, nickel silver stanchions, supplied with 2, 3, 4 and 5 rails at 1/200 scale from James Lane (Display Models), which fitted the purpose nicely. The teak handrails were made from 1 mm x 0.5 mm Plastruct strip, and any curved areas were cut from 0.5 mm styrene sheet with a small circle cutter. They were painted with Humbrol Satin Brown and given a coat of gloss varnish. I found contact adhesive, applied with a cocktail stick, was the best way of attaching them to the etched stanchions.

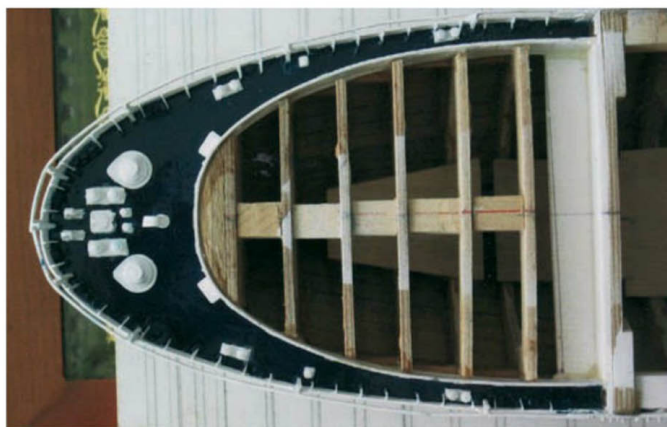
THE WEATHER OR UPPER DECK

Before this could be fitted to the wooden frames of the hull, it was necessary to construct the cable deck at the rear of the main deck below. A strip of styrene sheet, with the ports drilled out, was bent round the framework and glued into place to form the cabin walls. The surrounding styrene deck was then fitted and the various fittings such as bollards, rope guides, winches and ventilator outlets, were fabricated and installed. Everything was then painted as required. Finally the outer bulwark was cut out and fitted with its support brackets. The styrene weather deck was then cut to shape and glued to the wooden frames of the hull with epoxy glue.

The next area to be tackled was the fo'c'sle. The most difficult part was the forming of the curved and flared bulwark around the edge. A lot of trial and error was required, bending cardboard templates around the top of the hull until a satisfactory fit and



An overall view of the completed model

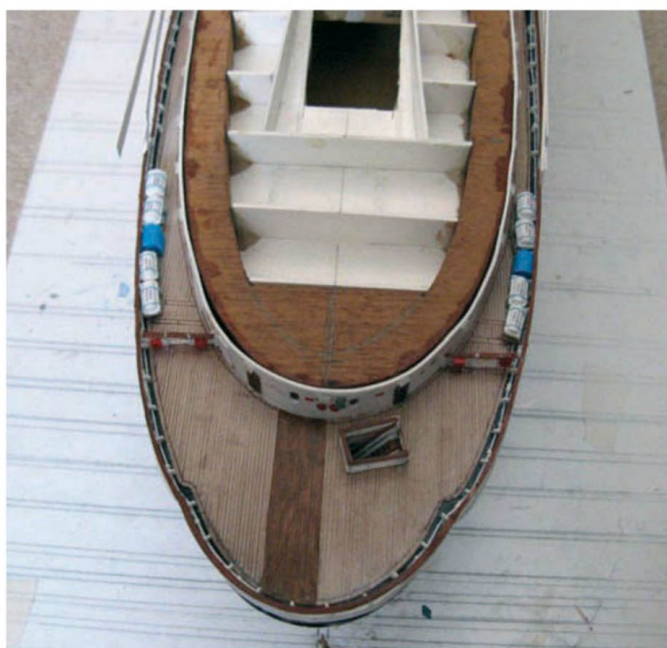


The cable deck with all the fittings installed and painted



The fully fitted forequarter with its bollards, cable capstans, anchor winches and anchor chains

shape was obtained. The template was then used to cut out the shape from 0.75 mm styrene sheet. All the openings for the hawser roller guides were cut at this stage. The strip was then glued in place and when set the supporting brackets added. Apart from the anchor chain and the anchors, which were purchased from model suppliers, I made all the other fittings myself. The deck was painted with Midnight Blue.



The after end of upper deck, showing cabins construction, life raft containers, teak deck and companion way leading down to the cable deck

In the midships area the bulkheads, supporting the next deck, were glued into place. At the after end of the deck, a space was provided for the later insertion of the swimming pool and an opening made for the companion way down to the cable deck. A wooden former was cut to the outline of the rear cabins and glued into place with epoxy glue. A styrene strip was cut to shape and the ports and doorways cut out. This was then bent round the wooden former to form the cabin walls and glued into place.

The stanchions and support brackets were glued to the bulwarks with superglue, the scuppers painted and the teak deck cut to shape and glued to the styrene deck. Finally the life raft containers were added.

VERANDA DECK

Bulkheads were added and, at the after end, an opening was marked and cut out for the swimming pool, which was constructed as a separate entity, fully painted, fitted out and installed at a later date. The lido café and lido bar were completed and the teak deck fitted. The stanchions and rails with their support brackets were added and the scuppers painted.

THE SUPERSTRUCTURE SIDE PANELS

These rise from weather deck to the promenade deck and stretch from the stern to the forward curved sections across the beam by the bridge and were made in one piece. The outline shapes were transferred from the plan on to thin card, which were cut out to form templates, from which port and starboard outlines were drawn on to the surface of 0.75 mm styrene sheet. The positions for the various ports and the larger windows were accurately marked, drilled out and filed to shape. Finally, the panels were glued in position on the port and starboard sides to the 1.5 mm bulkheads. Again thin card templates were used to cut the styrene strips for the curved panels around the forward, bridge end. When all the ports and doorways had been cut out, the panels were glued into place to the bulkheads. After painting, the ports were glazed by sticking strips of 0.25 mm PVC sheet on the inside, with quick setting epoxy glue. Finally, the styrene promenade deck was glued in place to the side panels and the lateral bulkheads below.



View of the port side, showing the installed superstructure side panels from the weather deck to the promenade deck

PROMENADE DECK

The side panels, which rise from the promenade deck to the funnel deck, were once again made in one piece. I decided it would be advantageous to make and fix the davits and boat decks to the side panels before they were glued in place. First a total of 300 parts had to be made for the davits. The side panels were laid flat on the plan and the positions for the assembled davits, together with the boat decks and the lift shafts, were marked out before being glued in position. The two panels and fittings were sprayed with Halfords gloss white and when dry, the upper surface of the boat decks and areas of the davits were picked out with Midnight Blue. The side panels were then glued in place to the bulkheads and the deck. They were then glazed from the inside as before.

The glass veranda, which is situated at the after end of the promenade deck was constructed by making a photocopy of the drawing from the plan, laying a sheet of 0.25 mm clear PVC sheet



View from the starboard side, of the newly installed davits and boatdecks on the promenade deck

over the photocopy and sticking the styrene glazing bars on to the sheet with Humbrol Clearfix. All the necessary panels were made in this way and glued together.

The next stage was to install all the other fixtures and fittings on the deck, such as stanchions and rails, the port and starboard accommodation ladders together with their associated winches, the main fire control pipework and the ventilation exhaust shafts behind the bulwarks. The drainage and other edges of the deck were painted Midnight Blue, before the teak decking was cut to shape and laid. Storage lockers for lifebelts were made and added to the deck. Finally the curved forward end of the promenade deck was constructed as on the veranda deck below.

THE BRIDGE

The complex shape of the bridge area was difficult to construct, because of the curves across the beam, together with the horizontal deck camber and the vertical elevation, which sloped inwards and outwards again. This was overcome by building an inner framework to form the shapes and then using card templates, as before, to cut the styrene strips. Some internal bridge detailing was included and the bridge wings were added on either side, with their associated fittings and glass screens to the rear. The port and starboard navigation lights were made from 2 mm clear glass beads, painted with Humbrol red or green transparent paint, before installing in the end of the bridge wings. Life raft canisters were added to the forward end of the boat decks.

The cabins at the forward end of the terraced sun deck and the terraced officers' deck under the topmost, funnel deck were constructed during the completion of the bridge.



Forward view of the completed bridge section, with the construction of the terraced officers' deck and the rear terraced sun deck behind

THE TOPMOST DECK WITH MAINMAST AND FUNNEL

The three sections of the topmost deck were cut to shape from styrene sheet and glued into place and the various fittings were made and installed on the decks.

The mainmast and deckhouse were constructed from styrene parts, with nickel silver stanchions and rails. The illuminated Saga Rose signs were made from plastic letters of the correct size and fitted on to scaffolding frameworks, made from 0.5 mm brass rod. The television camera, searchlight, floodlights, stanchions and rails, all the remaining telecommunication aerials and the ship's identification number were added.

The funnel was made from styrene parts and brass tubing for the exhaust pipes.

Floodlights and ventilation hatches, as detailed on the plan, were installed and a Midnight Blue walkway was painted on the white deck.

The two metal globes, covering the satellite communication aerials were fabricated from suitable sized wooden balls, purchased from the local craft shop. These were rubbed down with fine sandpaper, the grain filled and then given a coat of white primer. When thoroughly dry, the welded segment seams were simulated by carefully scoring the surface with a scalpel. The balls were then mounted on frameworks, constructed from styrene strip, according to the plan and my reference photographs. Finally, the finished items were lightly sprayed with gloss white. The manufacturer's labels were made by reducing my photos down to scale size on my printer. These were carefully cut out and stuck to the globes.



View of the topmost deck showing the mainmast and deckhouse, the illuminated SAGA signs, radio aerials radar scanners and the ship's identification number



Close-up of the port side showing the funnel, tenders and lifeboats installed



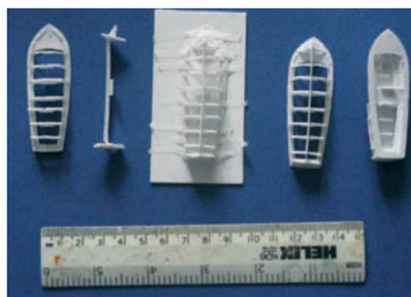
Stages in the construction of the funnel



View from above of the satellite communication domes, the shuffleboard deck and the lifeboats

The finished models were then fixed to the deck in their appropriate positions and various other fittings were added.

At the after end of the deck, a windscreen was built athwart ships, to protect the shuffleboard deck, immediately behind and at a slightly lower level. This is reached by two flights of steps up from the promenade deck. It consists of an initial, steel deck, landing leading to a raised, level teak deck, on which the shuffleboard lanes are marked out in white. It is protected from the wind by glass screens and canvas dodgers. All of these features were reproduced on the model. My teak deck was given a coat of varnish and the white markings added with a 0.2 mm technical drawing pen filled with white acrylic ink. Seating, a scoreboard, stanchions and rails, floodlights and loudspeakers were also added.



Building the tenders

BUILDING OF THE LIFEBOATS AND TENDERS

I was able to purchase some ready made, appropriate scale, hulls for the two sizes of open lifeboats from Quaycraft, which I was able to adapt. The tenders were made from scratch, from the sectional drawings

on the plan, constructing them as plank on frame models in their own right, using 0.5 mm styrene sheet throughout. Although they were only 6 cm long they were fully fitted out internally with all the seating and as much external detail as possible. The most difficult job was making the 2 mm diameter scale propellers!

FINAL DETAILS

Straight flights of stairs and companionways were purchased ready made in white styrene, at a scale of 1/200. But the left and right-hand curved flights had to be made from scratch using a jig I



View showing the veranda containing the Polaris club, the curved stairways, the lido café, the swimming pool and the decorative lighting

prepared for the purpose. Etched stanchions and rails of the correct angle were glued to the sides.

The external decorative lighting around the ship was simulated using 1.2 mm lengths of 1 mm transparent jewellery thread or beads of quick setting epoxy glue hung from fine copper wire.

The Bahamian civil ensign and other flags were purchased from BECC Model Accessories.

CONCLUSION

This has been a rewarding model, which took me nearly four years to build. I am well pleased with the end result and it resides in my hobbies room to remind me of all the happy holidays we spent on this fine ship. **MMI**



Builder and author Grahame Penn with his completed model of Saga Rose

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MV ANTARIES

Designer Jim Pottinger

A 3 sheet detailed plan of a modern fishing trawler.



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Ref: **MAR 3432**

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MV HARMONY

Designed by Hal Harrison

A semi-scale cargo ship length 770mm. beam 130mm. Balsa and card construction for single electric motor and two function RC.

Featured in:

FREE PLAN WITH MM

JULY 1997

Ref: **MAR 2570**

RRP: **£14.00/US\$18.00** + p&p/s&h



THROSTLEGARTH

Designer Jim Pottinger

Two sheet plans for a 1954 built steam powered coastal and estuary tug.

Very detailed information at 1:32nd scale length 965mm and 256mm beam

but no model construction data.

Featured in:

February 2004 MMI

Ref: **MAR 3074**

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FANATIC

Designed by Roger Clark

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Ref: **MAR 2451**

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HMS LEEDS CASTLE

Designed by Bill Dickinson.

Two sheet plans at the larger 1:72ndscale to give better model performance.

The Fishery Protection Patrol Ship built 1981 at Hall Russell. Model length

845mm by 120mm

beam. No model

construction data.

Ref: **MAR 2697**

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TURTLE DOVE

Designed by Richard Ellis

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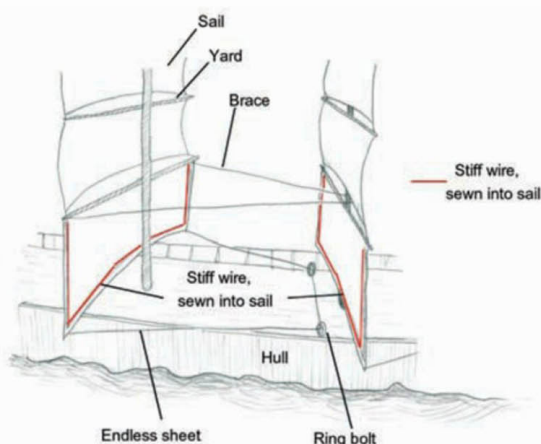
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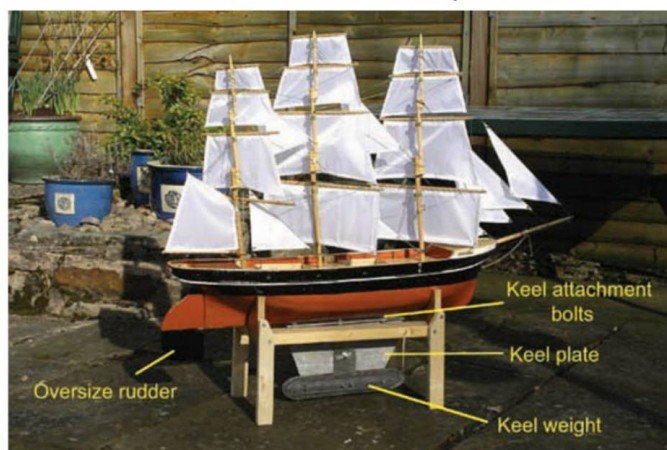
HOW DO YOU GET IT TO SAIL INTO THE WIND?

Lots of passers-by comment when they see model boats sailing on a pond, and one of the questions often asked of me is the one above. Sometimes I can answer at length, sometimes not, but, at any time, it's like trying to describe a spiral staircase, without using your hands! If I try to describe the theory while someone is 'having a go' with one of my boats, it's even more difficult! So, I'm going to try here, to describe what happens, what you have to think about to do it, and, also, how much fun it is.

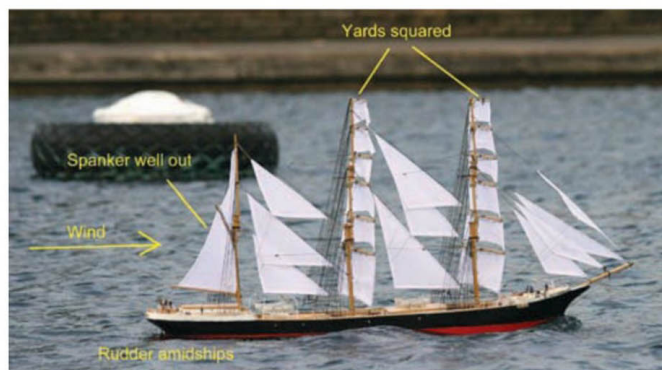
I've used pictures of my boats, with text on them, to help illustrate what's happening, along with descriptions in the text of the article, to back that up. I emphasise that the techniques used are suitable for models. They are based on the real thing, but the antics that you can use on a model would dismast a real sailing ship! I've also not gone into the ways in which I operate my yards in any detail, merely showing the minimum necessary to aid understanding. I apologise, in advance, to anyone reading this who is a professional square rigger sailor, I'm not, so I'm talking about my models on a pond, with a touch of reality gleaned from books, to add some authenticity.



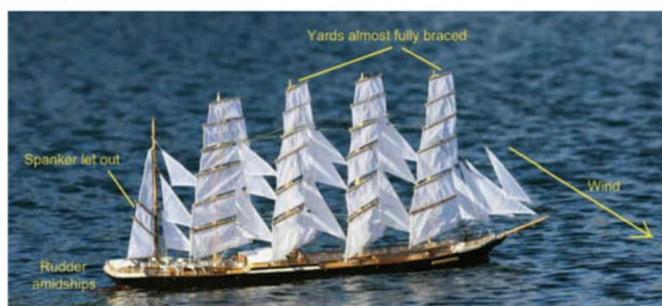
Brace, endless sheet and stiff wire, all the necessities for square sail control in a model, see the text for an explanation



The removable, and adjustable, sailing keel, and the oversize rudder, both indispensable to my sailing models of square riggers



Running, with the wind from astern, or on the quarter, is the simplest sailing case. The yards are squared, and the only effect to counter is yawing from one side of the course to the other. This is a barque, the model on which I can let out the jibs, lifting the bows, as seen here



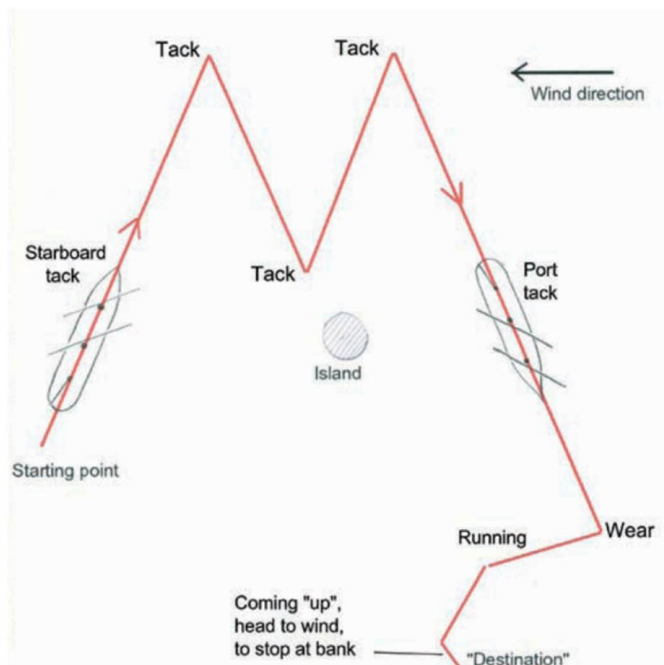
Beating. The five-masted barque, sailing with the wind abeam. In this case, as with sailing close hauled, it is often possible to sail hands off

BASICS

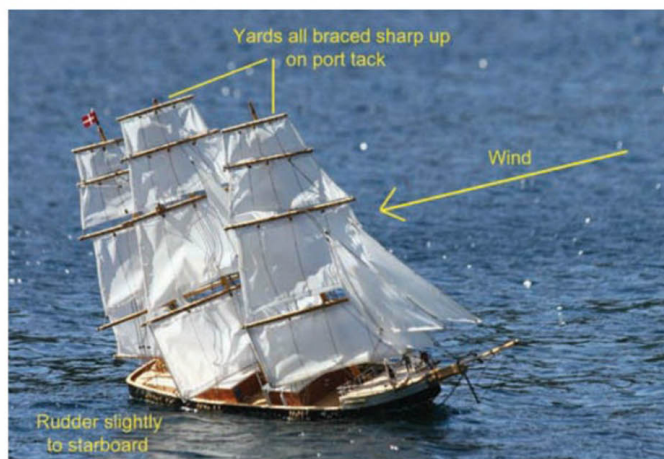
The idea is to apply the wind to the after side of the sails for most of the time, in order to make the hull move forward through the water. If you can get the wind to act on the after side, the hull will move forward, even if the wind comes from somewhat in front of the boat, because the hull is pointed at the forward end, and will want to move in that direction. If the wind comes from astern, the situation is obvious; with the yards squared (i.e. across the ship) she will move forward. If the wind comes from one side (a beam wind), and you swing the yards to 45 deg to the hull, so that the wind strikes the after side of the sails, she will also move forward. In essence, that's it, what follows is a description of the refinements on that basic premise.

Another thing to understand is that it is necessary for the square sails (the ones set on yards across the ship), to be able to take, and use, the wind from both astern and ahead. The reasons for this will be explained as we come to them, for the moment it will only be necessary to describe the way in which the courses are rigged, to permit this.

The courses are the lowest square sails on each mast, and, because of that, they do not have a yard beneath them. As all the other sails have a yard above and below them, they are fully supported, and can take the wind from either side, but the courses



The square pond on which I sail my boats, complete with 1 m diameter island. The course shown is that necessary to sail from the lee shore, back to a destination to windward. The difficulties of beating, when you can only manage 65 deg to the wind, are apparent



This is the full rigger, sailing close hauled on a windy day, and I'm watching out for the wind to get around the fore part of the square sails, catching them aback. It's nearly time to reduce sail

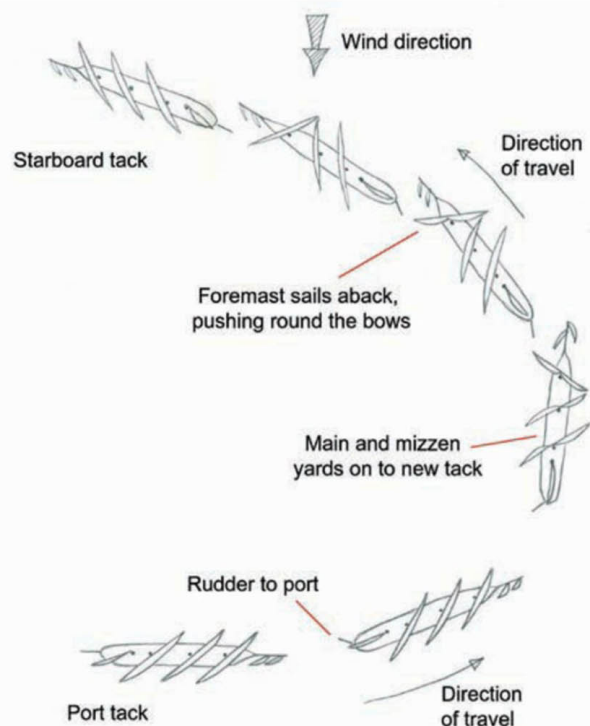
cannot, without assistance. On real ships, the bottom corners of the courses were attached to lines that could be moved, and fastened down, to allow the courses to use the wind from ahead or astern. As I have no crew on a model, I have to do it differently.

To allow me to take the wind from astern, the bottom corners of my courses have a line, called an endless sheet, attached from one bottom corner to the other, running through ring bolts, set into the deck, just in front of the next mast astern (see picture). This sheet will hold the sail back, into the wind, no matter what angle it is swung to. In the opposite case, to allow the course to use the wind from ahead, I simply sew stiff wire into its edge, down one side, across the bottom, and up the other. This will prevent the sail from simply wrapping itself around the mast, when the wind comes from in front (again see picture).

Along the way, I've mentioned swinging the yards. That means rotating them about their particular mast, to allow the wind to strike the sails from the desired side. On real ships, and on my models, this rotation is achieved by pulling on braces, attached to the ends of the yards. How they are operated is not the subject of this piece,

but you can see the braces in the picture, to give you an idea of the run of the lines.

Besides the square sails on my models, there are 'fore' and 'aft' sails too. These are the jibs, set between the bowsprit and the fore mast; the staysails, set between the masts; the spanker, the lowest sail on the aftermost mast; and the gaff topsail (or gaff upper and lower topsails, if there are more than one) set above the spanker. These sails do provide motive power, as in a yacht, but the real 'engines' are the square sails. The fore and afters provide 'balance' to the rig, the idea being that the forces acting along the length of the vessel are even, from bow to stern. This is important during tacking, when I shall describe some ways of manipulating the spanker (and sometimes the jibs), but, because these sails are set all the time on my models, it is possible to take their effect as read, designed in by the people who built the original ships, on which my models are based. It is as well to remember balance though, as it is this property that allows the rudder to operate efficiently. If the model were to be out of balance, say with too much sail at the stern, she would not steer properly.



This is a four-masted barque tacking from port to starboard tack. It will be apparent that the ship is at her most vulnerable as she crosses the eye of the wind



The barque, going about from the starboard to the port tack. The main mast yards are on the new tack, and those on the fore mast are pushing round the bows, before they too are put on the new tack. Rudder to starboard gives the clue as to the direction of the turn

Talking of steering brings me to the final basic: keel and rudder design. I've found it necessary to make my rudders oversize, as, on a small pond, it is inevitable that most of the time is spent avoiding other boats, and steering away from other obstructions, such as the side of the pond! Use of a larger than scale rudder ensures predictable, effective steering. Likewise, I've found that I need adjustable, detachable sailing keels on my boats, so that I have sufficient stabilising force, to counteract the pressure of the wind on the sails. The weight on the keel is attached to a plate, to help the model 'grip' the water, and not make too much leeway, when sailing.

All the above can seem to make for a daunting prospect, but do remember that, if you embark on the building of a model sailing ship, lots of things will already have been decided for you. The designer of the original vessel will have laid down the hull shape, and the sail and rigging plan. Provided you build the model to the proportions of the real thing, she will sail!

SAILING SQUARE RIGGER MODELS

I'm going to cover all the aspects that I can think of. I shall split the subject into headings, covering specific aspects of sailing, including wind direction and strength, the consequent setting of the sails and rudder, and also, and possibly most importantly, the things that are on my mind as I sail the boat, things like the anticipation required and the kinds of 'fallbacks' that I may need, in case things don't go to plan. So, to begin with, I'll look at 'running'.



The real thing, this is the four-masted barque, Moshulu, then the largest sailing ship in the world, hove to for her pilot, in 1939. Her main yards are aback, while the rest take the wind from astern, and various other sails are in the process of being furled, to reduce her speed. You can see her pitching uneasily in the sea. Sadly, she is now a floating restaurant in Philadelphia, a shadow of her former self

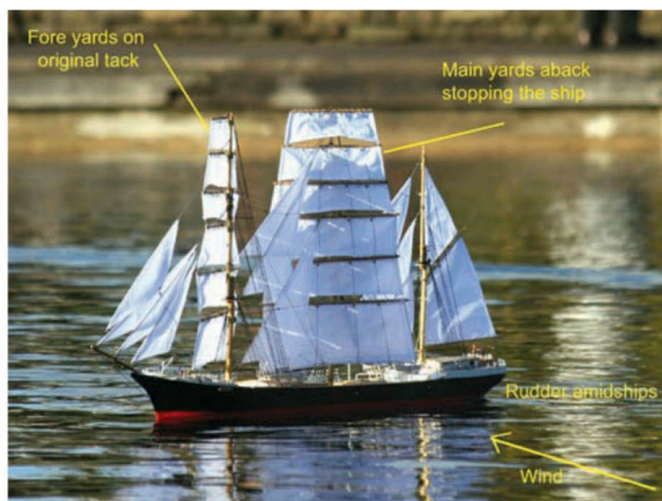
great seas, capable of swamping even the biggest sailing ship, but, for me, on the pond, this is the easiest condition in which to sail.

The yards are almost squared, and the wind is taken slightly on the quarter, so that the square sails do not mask one another, and therefore I get the maximum pushing power out of the wind. The model will start to really go, if there is a good breeze; she'll put her bows down, and try to dive into the waves. On one of my boats I can let out the jibs, and this is a good time to do just that, as it will assist the bows to lift a little more. The spanker is let out, often as far as it will go, to get all the driving power I can from it, but this can add to the boat's tendency to yaw, meaning that I'll have to keep a close eye on the course steered, correcting the steering as necessary. If I am not careful, and let her 'come up' into the wind (turn, to point toward it), she'll stop, and I'll then have to get her under way again. In the real thing, allowing her to come up like that could easily have her dismasted and overwhelmed. When running, however, I can steer any way I like, and can avoid other boats in just the same way that a powered boat can.

When I run, down the pond, like this, it isn't too long before I run out of room, and have to turn away from the lee shore, which will involve a turn towards the wind, and then a beat, back up the pond, which is the next situation I'll consider.

RUNNING

When sailing ships took the old sailing ship routes around the Earth they circumnavigated the globe in the high latitudes of the Southern Ocean, south of Africa, New Zealand and South America, where the westerly winds blow, right around the world, with no landmass to interrupt them. They used the westerlies as a fair wind, and thus sailed east, in their expression, 'running the easting down'. That involves sailing in the obvious, childlike way, with the wind from astern. For them it was no simple task, because the Southern Ocean builds up



The yards set up for heaving to, to stop for her pilot. The main mast sails are aback, trying to push the ship astern, while those on the fore mast are still taking the wind from aft, and pushing ahead. Thus the ship will stop, and only make leeway. The rudder is set to try and keep her head up to the wind



All aback – the wind has caught the sails from ahead on the four-masted barque, and our model has stopped. She will now start to make sternway. With the rudder hard to port, as she goes astern, her bows will turn away from the wind, finally allowing the yards to be squared, thus allowing the sails to take the wind from behind again, resuming forward progress

BEATING

As I approach the edge of the pond, I'll move the rudder hard to port, and start to turn away from the bank (the direction could just as easily be to starboard). As I start the turn, I'll pull in the spanker, better to have the wind push the stern away, and assist in the turn to port. If I'm sailing a boat with control of the jibs, this is the time to let them out for the opposite reason, to allow the bows to come towards the wind more easily. As the model makes the turn, and starts to show her port side to the wind, I will brace round the yards, to put them all on the port tack, that is with their port yardarms moved forward, to allow the wind to stay on their after sides. I will turn until the boat is at about 90 deg to the angle of the wind, then I will put the rudder amidships, and let out the spanker a little, to gain a little more push from the wind.

I am now making progress across the wind, and the vessel, in this state is probably at her best, both in looks, and in the ease with which she can be sailed. It is possible now to sail 'hands off', and just enjoy the beauty of a sailing ship, one of man's most beautiful industrial creations. The reason I can let go now is that those who made the original vessel sited those masts and sails in such a way that the ship is in balance, with the forces along her length equalised. She will respond well to her rudder, it being possible to either run her 'off', away from the wind, or to bring her 'up' towards it, with relative

ease. Now is the time to consider the next move, as, at the moment, she is not sailing back up the pond, to any significant degree. To do that I will have to bring her closer to the wind, to gain as much ground, into the wind, as I can. I now have to sail 'close hauled'.

SAILING CLOSE HAULED

Imagine for a moment, a large sailing ship, as late as the 1930s, emerging, around the north of Scotland, from the North Sea into the Atlantic, bound for Australia, by way of the Cape of Good Hope. The wind is directly from the west, as it often is in the North Atlantic, and our vessel is therefore on the port tack, trying to make as much westing as she can, in order to get out into the Atlantic, ready to turn south. With the wind from the west, the best course she'll make is about NNW, so, you'll see, she will be going in the wrong direction. The reason for that is that square riggers will only point up to about 65 deg to the wind. It will be apparent that she must turn, to get the wind on the other side of the ship, because, by the same token, with the wind from the west, on the other tack, she can sail due south with ease. The manoeuvre required is 'going about', either by tacking, or wearing, and we shall consider both, for the model, later in this piece, but, for the moment, I just want to show that, when sailing close hauled, more progress can be made on one tack, than on the other, depending on position in the pond, and wind direction. To illustrate this point for the model, see the course steered in the pond diagram, it will be apparent that the model will make more ground back up the pond, on one tack than on the other.

So, to remain with the model on the pond, I now have to bring her as close to the wind as I can, in order to try and get back up the pond as quickly as possible, before I run out of room at the next bank. All I have to do is to make sure that the yards are braced round as far as possible, 'on the backstays' to use the old terminology, that the spanker is pulled in (to push the stern away from the wind, and thus bring the bows as close to it as possible) and to steer the boat to port, to bring her as close to the wind as I dare. If I judge things correctly, I'll start to make progress, still across the wind, but more up the pond. I say if because I'm trying to go as close as possible to the wind at the boat, and I am on the bank, maybe many yards away. To help me judge the wind at the boat I use the spanker, in its 'let out' state, to show me the wind direction at the boat, I then know, unless the wind veers, where it is coming from (you could also use a pennant for this). If I turn too close to the wind, it will start to get around to the fore part of the square sails, and, if this happens, the boat will stop, and start to go astern, total failure! Therefore, it becomes a matter of pride not to get 'in stays' like this, and thus becomes a very absorbing occupation; you'll not have many pond-side conversations when you sail like this!

The upshot of this kind of concentration is that I am on the rudder stick, watching every move, as the boat moves across the pond. Inevitably, space will again become a problem, as the model nears the next bank, so I will now be preparing for the most difficult move that I will regularly make, when sailing a square rigger model, tacking.

TACKING

Reference to the pond diagram will show that there is a zigzag course to be steered, to get back up the pond. At the end of every zig or zag, technically called 'boards', there is a sharp turn, which will allow the model to take the wind from the opposite side. It is these sharp turns that are achieved by 'going about', tacking, or wearing round, on to the other tack. Tacking is the more difficult manoeuvre for the model boat captain, and it is this that I'll describe now; you may find it helpful to consult the other diagram, showing tacking in detail.

Imagine that I am continuing from the situation described above, and am close hauled, on the port tack, (on the pond diagram, that is the situation seen in the courses from top left to bottom right). As I come towards the point at which I want to go about, I will allow her to turn ever so slightly away from the wind, to maintain good speed, and keep momentum. I will pull in the spanker, so that, when I start to turn towards the wind, it will push round the stern, to assist the



Idling along, running downwind. This is easy sailing!



Fine sailing with the five-masted barque, beating on the starboard tack. You can do this hands off, but be ready for the next move – it won't be long before you have to make it

turn. Now I am ready to put the helm over, hard to port, and begin to turn into the wind. The model's momentum will keep her going, as she turns towards the wind, and, as soon as her bows go across the eye of the wind, I'll put all the yards, except those on the fore mast, on to the new tack, in this case, starboard. Whether I'm sailing a two, three, four, or even five-masted vessel it is the same drill, all the square rigged masts except the fore mast, go to the new tack, as she crosses the eye of the wind. Now the fore mast sails are 'taken aback', and will push round the bows, to finally get her across the wind, while the rest of the square sails will hold her from going backwards.



Going about with the five-masted barque. It's the same process as with a smaller vessel, with the main, middle and mizzen mast yards on the new tack, while the fore mast sails push round the bows. The main difference is that the extra length makes it more difficult

Her momentum still keeping her going, I'll continue with the turn to port, her helm still hard over, and, as the outcome of the turn begins to look assured, I'll now swing the yards on the fore mast on to the new tack, to enable her to start to pick up speed, now on the starboard tack, and put the rudder amidships. As she picks up speed, I'll let out the spanker a little, to get her back to the fastest speed she can do in the conditions. If the model in use is the one with the adjustable jibs, then I'll let them out as the boat approaches the eye of the wind, and pull them back in again, as she goes past it, all to assist in swinging the ship from one tack to the other. It is in this manoeuvre especially, that the balance of the ship is important, as

it is this good balance that allows her to respond well to her rudder, even when the wind does not favour her.

Lots of things need to be just right, in order to successfully perform this operation. I'll need to accurately understand where the eye of the wind is, at the boat, so that I swing the yards at the correct moments, and I'll need to have the rudder just where it is required at all the key stages. If I don't get it right, or, if the wind veers at the wrong moment, the vessel will get 'in stays', able neither to turn one way nor the other, and then start to sail astern! If you look at the pond picture, you'll see that this will make a mess of any attempt to sail back up the pond, so it's important to do it right. Another look at the picture will show you that, with this prevailing wind, being on one tack makes more progress up the pond than being on the other, so I'll need to keep that in mind when choosing where to go about, as I will also have to do when considering the island, and other boats. It's never boring!

All my models are of square riggers that were built after 1880, and are, therefore, relatively fine lined. I'm no expert, but I understand that on vessels with bows that were more 'bluff', e.g. galleons, it was quite likely that they would start to go astern during tacking, and that they were regularly steered, when this happened, by putting the helm the opposite way, to get their heads across the wind, before being able to resume progress on the new tack. You'll see the techniques that I use in this situation in the following section, on 'oddballs', where I look at sailing astern.

Going about by tacking is the most efficient way of getting back up the pond, as it loses virtually no ground, but, if the wind is very strong, or variable, I can also go about by wearing, and that is what I'll look at next.

WEARING SHIP

Tacking involves turning into the wind, wearing ship is to go the other way, and turn away from the wind, and then turn back into it, on the other tack. In detail, it goes like this. As in the previous section, I'm coming to a point at which I need to turn around, to get the wind on to the other side, to make another board back up the pond. This alternative way of doing it involves turning away from the wind, and, as I do so, gradually 'squaring' the yards, in effect keeping them at 90 deg to the wind, as I turn the ship, firstly away from the wind, and then, gradually back towards it, until I am 'sharp up' on the new tack. As I turn further away from the wind, I also let out the spanker, to gain some more impetus, but pull it back again, as I come back close to the wind, on the new tack. This method is certain, as there is no crossing the eye of the wind. It will work every time, but it does lose ground in the battle to get back up the pond, probably 3 m or so, so it makes the task that much more difficult. It is of great assistance, when turning away from the wind, to start to 'square' the yards as soon as possible, so that the sails at the after end of the boat do not hinder the process, by allowing the wind to hold the stern, preventing it from coming towards the wind, as the vessel turns away from it.

The real ships went about by both methods, but they only tacked in light winds, as, in heavier weather, there was a good chance of dismasting the ship as they crossed the eye of the wind. Thus, wearing was usually done under reduced sail. On a real ship, wearing could lose the ship several miles, so there also had to be plenty of sea room, to be able to do it. If a sailing ship was caught close to a lee shore, and could not tack, to get away, she surely would not be able to wear round, for lack of room, and that was often the reason for shipwreck.

HEAVING TO

Real sailing ships had to be able to stop, to pick up a pilot, put out a boat, etc. The word 'stop' is a misnomer, what happened was that the ship had to lose way, to allow, for instance, a boat to come close, or alongside. The process would start with sail being reduced, to lose speed. When the ship was virtually at a standstill, her main yards would be 'backed', swung round from one tack to the other, to get the wind on to the 'wrong' side of the sails on that mast. That would stop the ship from making further headway, and,



This is a model near to her limit. Nine sails have been removed, and she's beating up the pond. Soon the water will be lapping over the gunwales, but it's great fun meantime



This is the brig with her maximum five sails removed. Not long after this, I sailed her into the side of the pond, breaking the jibboom!

because the main yards were aback, and those on the other square rigged masts were not, the ship would virtually stop, only moving slowly to leeward. The time spent 'hove to' was relatively short, so I don't know exactly what would happen were a ship to spend hours like that, for instance in a bay. In practice the manoeuvre was sufficiently effective to allow the collection of a pilot, for example.

In really heavy weather, out in the ocean, sailing ships were also hove to, if the state of the wind and sea made it impossible to continue, but that is a manoeuvre designed to deal with different circumstances. It involved the ship having very little sail set, and bringing her up to the wind, to ride out extreme conditions, head to wind. It is not a condition which one encounters when sailing models, so I cannot comment on all the technicalities involved.

On my models, heaving to is not an operation that is required at all often. In my experience it is a manoeuvre to try, just to see if it works. Sad to say, my experience is that it doesn't, in a scale sense. Whenever I have hove to, whether it be with a two, three or four-masted square rigger, the boat usually 'falls off' to leeward, usually going slightly forwards because on only two of my boats can I back only the main mast yards, and by then the stop has failed!

On that rather downbeat note, I've come to the oddball section, where I'll describe some manoeuvres that are based on the real thing, but that can be done more spectacularly with a model, mainly because there aren't any lives at stake, nor is a model likely to founder, as the real thing would certainly have done!

ODDBALLS

Above, I've briefly described the process of slowing down, and stopping a real square rigger, and you'll have gathered that it



The brig again, the water blown 'flat' by the high wind – by this time, only the brig and me were around

was a gradual business. On a model, it is possible to perform an emergency stop, which, if tried full size, would have dismayed the vessel concerned. If you imagine one of my boats sailing along, to windward, with her yards round on to the backstays, and suddenly another model crosses my bows, such that a collision is imminent, I can simply put all the yards round on to the other tack, take the wind from in front of the sails, and she will almost stop dead, just about as fast as a powered model would, if the motor was put astern. It is the same result that comes if the wind veers right round, to involuntarily take the sails 'all aback' (see picture), and, when it has happened, it leads on to the necessity of using the next oddball, sailing astern.

Having put myself into the situation where the wind is bearing on the sails from ahead, I can resolve the position in a number of ways. The model will sail astern, and, if the rudder is manipulated properly, I can do some surprising things. If you imagine the wind in the all aback picture, coming from the port side, on to the fore part of the sails, pushing her astern, if I put the rudder hard to starboard, she will tend to sail, more or less, straight backwards. If, on the other hand, I put the rudder hard to port, she will turn stern to wind, and, in effect, start a three point turn, which I can complete by squaring the yards, at the appropriate moment, and starting to sail away again, this time with the wind from astern! In this example, I've landed myself in this plight by accident, but, if your boat is by the side of the pond, facing in to the bank, and you want to sail away, you can deliberately sail backwards, away from the shore, turn as above, square the yards, and then sail away. If you ever build a square rigger yourself, make sure you've got an audience, then try it; I guarantee they'll be impressed, especially if they're yachtsmen, whose boats aren't blessed with this ability!



The four-masted barque with ten sails removed, sailing in the winter sunshine. Later, on this boisterous day, she was caught full aback

WEATHERING

No, this isn't about paint jobs on model boats, it's about passing an object, when travelling to windward, on its 'weather side', that is, the side that is facing the wind. On the real thing it could be beating out of the Irish Sea, southbound against a westerly wind, without bumping into Cornwall, or making a westward rounding of Cape Horn, against the prevailing winds. There was even an occasion when a large four-masted barque was on passage from the UK to Cape Horn, and found herself too far to the west, when approaching the extreme easterly tip of Brazil, Cape San Roque. The passage past South America to the Horn was, literally, a coastal passage, and the ships ran along, perhaps 200 miles from the east coast of South America. This unfortunate ship then, had to make some easting, to get herself back, to the east of Cape San Roque. Wind was in short supply, currents there are unfavourable, and the upshot was that she failed, and had to turn west and then north, back to the middle of the North Atlantic in the latitude of Florida, before she could turn east and then south, in order to have another go. It took about a month!

The consequences, and interest, to me, of weathering anything are not quite so striking, but they do, nonetheless, provide everything, from frustration to satisfaction to the square rigger model sailor.

You'll have seen, on my picture of our pond, that it has an island. It's an island that's big enough to provide a good obstacle, but small enough to readily sail around, without it taking ages. Nevertheless, when I'm beating back, up the pond, it sits there, balefully, ready to frustrate my efforts to go where I want to. It is easy to sail down our pond, which is why the word doesn't appear much here, I can, for instance, sail the length of it, down wind, in 30 seconds, but it can sometimes take 15 minutes to beat back up, often to the amusement of my fellow sailors. The island then starts to loom large, for, if I miss weathering it, and have to sail to its lee side, I'll often have to beat away and then towards it several times before I can get myself back into a position to have another go. Of course, there are other, sublime days, when the sun shines, the wind whips across the pond at 20 mph plus, and I can sail right up to the eye of the wind, and scoot past the island's weather side at a fine rate, getting quickly back to my starting point. That's when I get just a touch of the exhilaration that sailing the real thing well must have provided for their captains.

RIGS, AND SAIL CARRYING

You'll see from the pictures that I have a selection of square riggers available to me. They all have different rigs, and all the rigs have their idiosyncrasies, which affect the ways in which they sail. I will name a few of the rigs here, because people often ask by the water which rig is which, but, before I do, I'll just say a word about sail carrying. It is imperative that I have the ability to remove some sail, when the wind is strong. I have boats at 1/40, 1/80 and 1/116 scale, and they all have their limits in terms of the strength of wind in which they can still sail. For the 1/40 and 1/80 it is probably about 25 mph maximum, for the 1/116, it is about 15 mph maximum, but that only applies if I remove some sails. Depending on the boat I can remove from five, to thirteen sails, per boat, so, if you build one, please bear that in mind.

As for the rigs, well here goes:

Brig Two masts, both square rigged

Brigantine Two masts, fore square rigged, aftermost fore and aft

Barque Three, four or five masts, aftermost fore and aft, rest square rigged

Barquentine Three, four, five or six masts, fore mast square rigged, rest fore and aft

Ship (or full rigger) Three, four or five masts, all square rigged. The three-masted full rigger is the only vessel properly called a 'ship'

In my boats, briefly, their characteristics are as follows:

Brig Extremely tractable, and handy in all circumstances, will perform any manoeuvre well

Ship Handy, though not as much so as the brig, and has to be watched more, when sailing with the wind

Barque With three masts, she is as handy as the brig, but with four and five masts she starts to become a handful, due to extra length making it more difficult to go about. That also means that the big barques can be the most rewarding to sail, and they are definitely the ultimate sailing ship

AFTERTHOUGHT

I write this, comfortable in the knowledge that most of you who read it, will never meet me. However, if you ever come across a square rigger, sailing on a pond, look around the bank, and, if you see a figure, pensive beyond what you'd normally expect of model boaters, perhaps with a look of concern, even fear, upon his face, or leaning this way and that, as if to persuade the wind, or the gods, to do his bidding, come up and have a word, it'll probably be me! Only, don't expect much in the way of conversation until the boat is on the bank, as you'll know from the above that the brain may be elsewhere!

MMI



Part of the museum's narrow boat collection awaiting restoration

I visited the show on the first day, 3rd March. I started my visit at the display of the Burton & District MBC. It seemed very fitting that in this year of Royal events that I should see the model of the Royal Barge – this 1/24th scale model was kit built and was exhibited by John Gregory. The full size barge was built by Vosper in 1928 and had seen service on many of the Royal vessels including the yacht Britannia. The next model to catch my eye was that of the French fishing vessel Audrey-H

MEETING POINT

REPORTS OF EVENTS HELD OVER THE PAST FEW MONTHS

ELLESMERE PORT MODEL BOAT SHOW 2012, BY MALC SLATER

Early March 2012, 3rd and 4th, all roads led to the National Boat Museum at Ellesmere Port, Cheshire. The museum is situated at the end of the Shropshire Union Canal and runs alongside the very busy Manchester Ship Canal. The museum has a heritage boatyard where the restoration of its historic fleet of boats are restored and repaired, in dock at the moment receiving attention is the National Coal Board's barge No 337. Having embarked on a model narrow boat build myself I was interested to see inside one of the narrow boat cabins. It is amazing just how the boatman and his family could live in such a short space let alone bring up a family.

The museum has hosted the model boat show for many years past, and for many the show is possibly the first of the season's big events for the model boat enthusiast. The layout of the show for 2012 followed past years with the displays housed in the many of the museum's buildings. The trade element of the show was housed within the island warehouse.

at 1/10th scale – the model was exhibited by Moira Hawkins. The vessel started life as a shop bought knick-knack, which was converted to power with many additions added along the way.

On the Liverpool Model Boat Club's display was a fine model of one of the Lake Windermere steamers, namely Princess of the Lake. The model constructed to 1/12th scale by Mike Riley was scratch-built using mahogany from an old gate post and timber salvaged from old school desks, the model gives recycling a whole new meaning.

Pride of place on the Southport Model Boat Club's display was a scratch-built model of the Isle of Mann Steam Packet Company's vessel TSS Monas Isle. The model has been scratch-built by member Peter Iddon to 1/72nd scale and is powered by two Graupner 500E motors – the model also features a plank on frame hull, which has a GPS coating both inside and out.

Those who live on Merseyside will I am sure know the Mersey Mammoth. The Mammoth is a large self-propelled crane barge, which operates in and around the Liverpool docks system and sometimes in other west coast ports. A fine example of the full size vessel was being exhibited in the models for judging section at the show.

Also in for judging was a diorama by Gordon Brooks which featured the ship Sagamore. The full size Sagamore was the only whaleback ship to be built in England having been built in 1893 by William Doxford and Son at their Sunderland shipyard. Seen on



Full size vessels and model ships sailing together above the locks



The large model freighter Hudson River in the model dock complex

the display of the Runcorn and District Scale Model Boats was a delightful trio of small boats, which included a Norfolk Wherry, an American day boat and another small offshore vessel, each model had been produced using materials to hand.

Ron Davis, a member of the New Brighton MBC, displayed his model of Condor Ferries' twin hulled ferry namely Condor 9 – the model is from an old Graupner kit to which Ron has added some extra detailing parts. It was not only boats on display, the model boat press often publishes free plans with their magazines – one such published plan was for a lighthouse and a finished model on a small diorama was on display at the show. The lighthouse model was based on one that could be found on the West Coast of America.



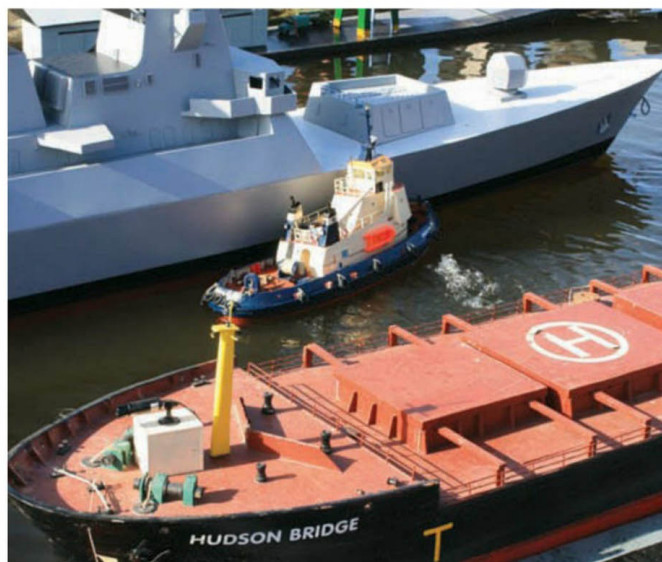
Don Morris (Left) and Ron Davis, both members of the New Brighton Model Boat Club, alongside Ron's model ferry Condor 9



In the section for judging was this large-scale model of the crane/work barge Mersey Mammoth, they worked across the Mersey in the Liverpool Docks Complex and beyond



The Whaleback freighter Sagamore in its dry dock diorama setting



One of the many tugs on the outside sailing area helps one of the naval ships into its berth in the model docks complex



Model tug towing on the Shropshire Union Canal at Ellesmere Port

Outside and within the canal lock was the model dockyard scene, this ever-popular feature had many tugs busying about as well as large ships including naval vessels. Each large ship had its bevy of tugs all jockeying for position in docking the ships. However all this changed when the museum's own full size trip boat Centaur returned into the basin after completing one of the visitor trips along the canal.

Several of the tugs went alongside the barge and docked the barge to the quayside without any help from the barge's skipper.



The Isle of Mann Steam Packet Company's ferry Monas Isle built to 1/72 scale and exhibited by Peter Iddon of the Southport Model Boat Club

SOUTH WEST MODEL ENGINEERING EXHIBITION, 31ST MARCH TO 1ST APRIL, BY BARRIE STEVENS

Now in its fourth year this exhibition is held at the Royal Bath & West Showground near Shepton Mallet and to coin a well-used phrase, was the best we have attended on this site! Much thought had gone into displaying each of the specialties in different halls with one each for maritime models, cars and lorries, model railways and one for indoor model flying. At the top of the showground was the area for outside model flying with a minibus service taking the less able (or less fit!) modellers from the main complex to the flying field.



James Bowden from the Ilfracombe & District MBC with his magnificent HMS Exmouth based on a Dean's Marine hull

The first day was very busy and I did not manage to escape from the Traplet stand until late in the afternoon but talking to modellers the feedback was that most visitors enjoyed the exhibition which according to the figures published after the event, was just under 10,000 over the two days – some achievement!



An impressive underwater exploratory scene from the support ship Toisa Polarix by Andy Wheatley and Bill Greaves from West Swindon Models



There was just enough wind and space inside the covered portable pond to have yacht races

For the larger scale model railways the showground is the permanent home of the East Somerset Society of Model & Experimental Engineers where they ran a passenger service over the weekend around their track. Operational model boats were accommodated outside in a portable pool under a marquee organised by SWAMBC (South West Association of Model Boat Clubs) this proved very successful and a constant display of models could be seen sailing throughout the day. There was even enough wind inside the marquee (with the sides removed) to allow yacht racing to take place. Also outside was a cordoned off area for model hovercraft and tanks with a small pond for the public 'Have A Go' boats.



On the Sedgemoor MBC stand was Malcolm Franks model with a novelty honey bear called Peggy Ann, also a Team Sedgemoor Sea Jet waiting for the next display



Mike Sheppard from Pembroke adjusting his model of the Beast; one of the first mechanical rowing machines



Merle Smith from the Exeter & District MBC with her diorama of life underwater

show and the all important point, when is next year's event... 6th and 7th April 2013. **MMI**



Local club the Shepton Mallet Drifters MBC with one of the largest displays in the Maritime Hall

Traders were also in attendance in each hall with specialist traders in their respective halls, it was good to see a large number of the regular marine model traders doing a good trade. Inside the Showings Pavilion there was a first floor balcony where many teams of war game enthusiasts were battling each other's wits with their board game battles.

Some of the local model boat club members were seen secretly participating in driving model lorries around the impressive road layout organised by the R/C Trucking Club – there was reputedly 150+ model trucks and earth movers.

Even with many people worrying about fuel costs the attendance was the highest we have seen with one of MMI's readers coming all the way from Banff in the North of Scotland, was this a record for distance? Over 150 clubs and traders were present and there was certainly something for everyone to see and for the young at heart there were plenty of Daleks, Dr Who, Star Wars and many other sci-fi characters walking around causing entertainment. Congratulations to all the organisers who were involved in the build up and knock down of the show.

Summing up an excellent

VIEW FROM THE BRIDGE

The stretch of water between the UK mainland and the Isle of Wight, known as the Solent, hosts one of the largest selection and numbers of full size commercial and naval vessels in the UK. As well as full size commercial vessels the Solent also hosts many leisure craft and ferries both to the European mainland and to the Isle of Wight. Many modellers are inspired to build models of full size vessels after either seeing them in the flesh or seeing a picture of them. Hopefully we can bring the reader pictures of shipping in the Solent to maybe inspire them to build a model of a full size vessel. We are indebted to Wightlink for giving permission for these pictures to be taken from the bridges of their ferries operating from Portsmouth to the Isle of Wight.

Images taken by Captain P. Anthony



HEBRIDEAN PRINCESS (ABOVE)

Making quite a rare visit to the South Coast while on a series of late summer cruises in the English Channel is the Hebridean Princess. She is seen here in the early morning of 30th August 2011 entering Portsmouth's Bar Channel inbound for the Cruise Terminal.

Operated by Hebridean Island Cruises and owned by the All Leisure Group, Hebridean Princess started life in 1964 as Caledonian MacBrayne's side-loading car ferry Columba and was built by Hall Russel & Company in Aberdeen.

She was sold by CalMac in 1988 and converted into a luxury cruise ship following her purchase by Leisure and Marine Holdings. She has had the honour of being twice chartered by HM Queen Elizabeth II for a family holiday around the Scottish Isles, once in July 2006 and again last year.

Hebridean Princess is registered in Glasgow, is 72 metres long, has a beam of 14 metres, a gross tonnage of 2112 tons and has a maximum speed of 14.5 knots. She can accommodate 50 guests and has 30 cabins, 10 of them designed for single travellers. She carries a crew of 38.

Viewed from the Bridge of St Faith.



GLADAN (ABOVE)

The Swedish Navy's Sail Training Ship Gladan (The Kite) entering Portsmouth Harbour on 24th August 2011. She is a steel-hulled, two-masted schooner and was built at the Naval Dockyard in Stockholm in 1947. She has a length of 34.4 metres, a sail area of 512 square metres and displaces 225 tons. She has an auxiliary 120 hp(m) diesel engine driving one propeller, a crew of 16 and can accommodate 28 cadets. Gladan carries the sail number S 01 and her sistership Falken (The Falcon) is S 02.

Viewed from the Bridge of St Clare.

MT MINIATURES

ROBIN LOOKS AT THE RANGE OF NAVAL WARSHIPS FROM MT MINIATURES

Over the last couple of years I have had the opportunity and pleasure I may say of reviewing and building their models as they were released. All their models represent warships of the Royal Navy from the 1950s and the range just seems to get larger as the months go by. The models are all in 1/700 scale and come packed in plastic bags containing all the parts. In each pack is the main hull complete with superstructure moulded in resin with a bag of white metal fittings. Included is etched brass fret, decals, assembly guide and a colour picture of the completed model. The bag of white metal fittings contain all the parts needed to build the model such as the armament, tower parts of the superstructure, ship's boats, cranes, etc. and in some cases a helicopter. The etched fret holds the ship's railings, aerials, mast tops and helicopter blades to further enhance the detail of the model. The resin Leander Class model's hull and superstructure sections are cast differently so it's not just a case of the same part for each of the models. Each model is available in kit form or fully assembled and painted, the fully assembled models come with their own display case and base; so if you find it difficult to work with such a small scale you can still collect these models to add to your collection for an extra charge. The display cases and bases are available separately from MT Miniatures.

All are waterline models so finishing your model with a water effect base is not a problem. The resin castings of the hull complete



Other colours being applied, the model is attached to a block of wood using Blu-Tack to aid handling



This is the resin casting of HMS Whitby – detail like this is standard on all models



HMS Plymouth assembled ready for painting



The model was spray-painted using an aerosol can in grey, this was the main base colour of the model; this technique was used on all models

with superstructure are very good and crisply detailed. There is a small amount of flash on some of the resin parts that needs to be removed and only need the minimum of preparation before painting (don't forget to wear a mask when sanding resin parts as the dust can be harmful if inhaled). The white metal fittings do need the removal of excess flash from around the seams of the moulding but this is normal with this type of metal fitting. This is easily removed with a fine flat needle file; if you undercoat these pieces first you can see what has to be removed more easily but work very slowly. Remember you cannot put back what you should not have filed away!



All kits come packed like this

Once all parts have been cleaned I sprayed the parts with an undercoat, these parts I attached to a block of wood using Blu-Tack to hold the pieces in place as I sprayed them. I then completely painted the hull and deck, once this was dry most of the white metal fittings were fixed in place on the painted resin section, these were attached using superglue. These parts were now painted in their appropriate colours. A colour

picture of the finished model comes with each kit, but the colours can also be found from many sources including books, magazines and the Internet. Etched parts are now added, these should be carefully removed from the fret using a sharp craft knife on a hard surface such as a ceramic tile or glass. Any rough edges should be removed with a fine flat file very gently so not to distort the parts. Many modellers paint the etched parts before fitting but I have painted them after they had been fixed in place with a spot of superglue.

The assembly guide of all the models is straightforward; they are of an exploded view with arrows pointing to where each piece is to be located. This also includes directions for the decals.

After I had finished assembling and painting the model I usually dry brush the complete model with white paint to highlight the model's raised detail and to give the model a slightly weathered appearance. This is my own preference, others like their models to look as if they had just been painted; bright and brand new looking. The decals are now added to complete the model; these need careful trimming and are attached after soaking in warm water for 40-60 seconds. I use Humbrol Decal Fix to help slide them into position and it also softens the decal so it fits over any contours or raised areas of the model.

These basic building instructions I have given I used for all the models in the MT Miniatures' range, so I hope they will be of help to other modellers.



MT Miniatures' flagship model, HMS Victorious



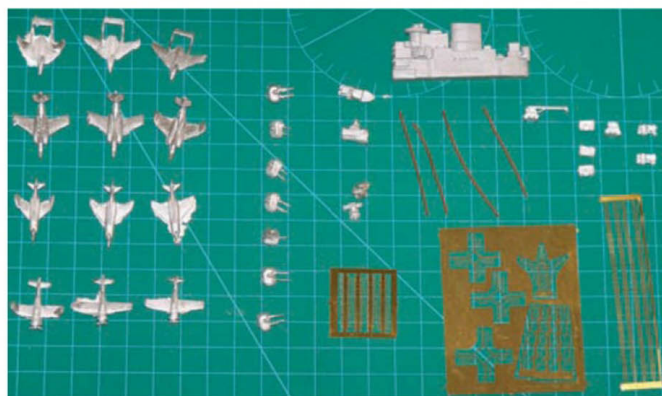
Matthew Tarrant – the man behind MT Miniatures – with a model of Victorious in the company's own style display case and base

The aircraft carrier HMS Victorious was a wonderful model to build and paint. The resin hull and flight deck are moulded in one completed piece 33.5 cm in length and is surprisingly heavy; the deck bridge island is moulded separately for this model. The detail of this moulding is very good, with moulded dinghies along the sides of the carrier and the flight deck has recess lines for the flight elevators and it really stands

out. The bag of metal fittings that comes with this kit contains the carrier's anti-aircraft guns, ship's boats, crane and other little fittings. Also within the bag are twelve aircraft to go on the flight deck, some with folded wings and deck vehicles to make this a very busy flight deck when finished. The detail of the etched parts are well defined, they include parts to make a well detailed cage type mast aerial; many other detailed parts are also on the fret to help further enhance the detail of the model.



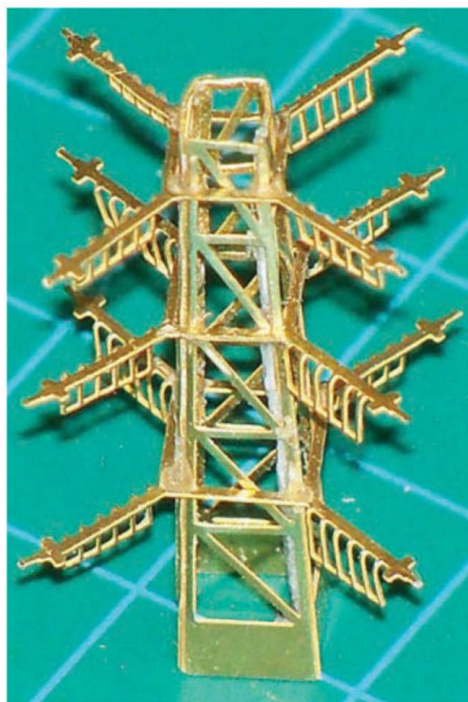
The well moulded and detailed flight deck



These are all the parts to complete the Victorious – the flash is easily removed from the white metal parts

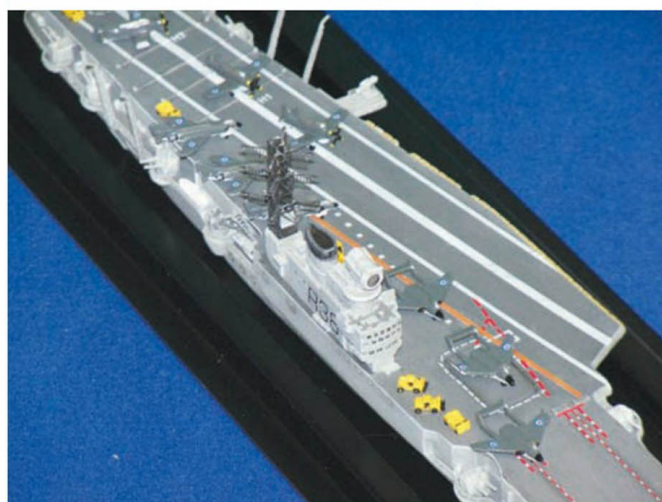


ABOVE: This is the detail beneath the angled flight deck



LEFT: The etched mast aerial array; this type of detail is typical for all models in their range

BELOW: Another image of the completed model; the deck decals come with the kit





The finished model of HMS Oberon



The submarine is completely cast in white metal

One of the latest additions to the MT range is a model of submarine HMS Oberon, an 'O' Class attack/patrol class vessel, dating from the mid 1950s. This model is entirely cast in white metal, the hull and conning tower is in one piece, with separate white metal parts for the antennas and periscopes, also included are decals for any one of the thirteen 'O' class submarines

that were produced for the Royal Navy. This is their first model of a Royal Navy submarine but dare I say it probably not be the last.

All the images I have taken, are of the models I have assembled and painted, two of them – HMS Endurance and HMS Leander (F109) – were the first ones I received for review and have appeared in separate articles as full build reviews. HMS Endurance was in MMI February 2011 and HMS Leander in MMI December 2010; these two models are mounted on bases I made myself.



This is the first MT Miniatures model I built, HMS Leander



This is a really nice and unusual model – HMS Endurance

Well done to MT Miniatures as I think many modellers welcome the addition of more Royal Navy Post War – Modern warships as very often this era is often neglected by other makers. Since I wrote this article two more models have been added to the range – HMS Fearless and HMS Bristol – I expect there will be many more to follow.

I would like to say thank you to Matthew Tarrant – the man behind MT Miniatures – for supplying all the review models; further details of all their models can be found on their website at:

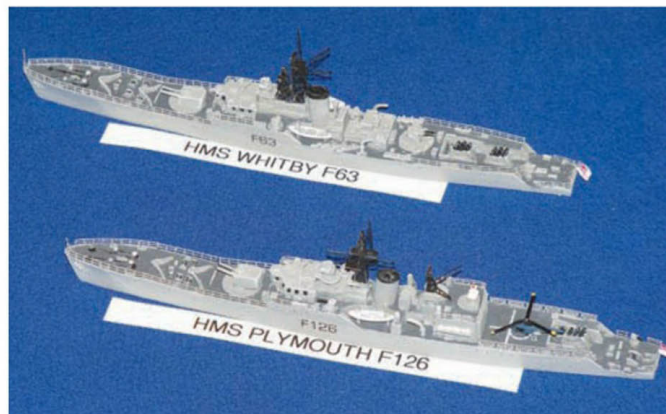
www.mtminiatures.com **MMI**



They all look terrific lined up



These three are all Leander Class frigates



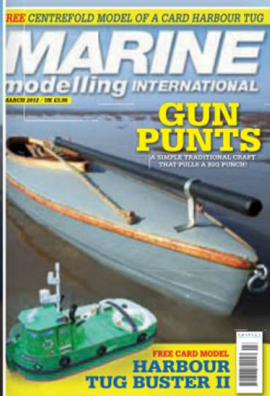
A close-up image of HMS Whitby and Plymouth



The latest additions – HMS Fearless and HMS Bristol

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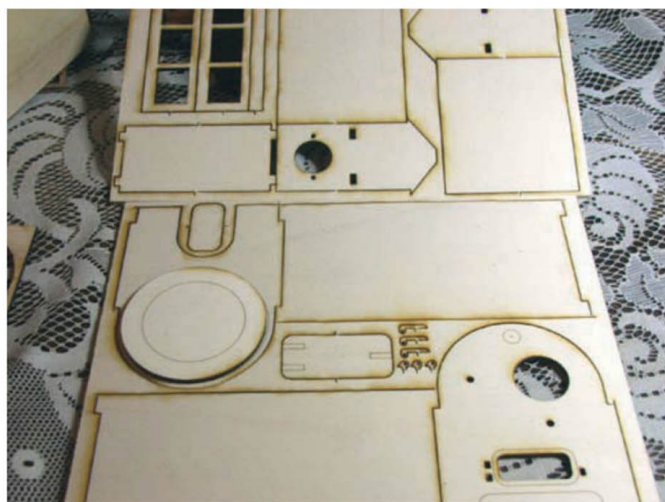
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Boiler and engine in the course of assembly



Engine casing with a dummy engine installed



Completed painted dummy engine and boiler with pressure valve and funnel

DUMMY STEAM BOILER AND ENGINE UNIT

For the past few months Waverley Models/Mike Mayhew has been designing a dummy boiler and engine unit for the Steammaster smoke generator unit. The kit is laser cut and comes complete with funnel, safety valve, steam control valve and opening fire door. The fully detailed boiler is lagged in pine. The engine box can be veneered in mahogany/teak and has opening glass tops to reveal a compound engine top. Below is fitted an MFA 940D51 electric motor which will turn a 45 mm dia steam prop.



Unpainted boiler showing fire door and water gauge

Waverley has a steam launch at 49" by 9.5" designed for the above. It will have laser cut cabin details cut in 3 mm ply and designed to be veneered in teak etc. The windows will be in 3 mm perspex laser cut and etched. For those who cannot afford the Steammaster unit, the boiler fits over 2 x 6 V 4 mAh battery with ease.

For further details and prices contact Steammaster, Tel: 0800 9700154 or Waverley Models, Tel: 01275 546772

LATEST RELEASE FROM MACS MOULDINGS 1/12TH SCALE DECK CRANE

The kit has 38 resin pieces, brass rod for the hydraulic pipes and black tubing for the hoses. It can be made folded or open. It is supplied unpainted. Code is M300 and price is £25.00 each.

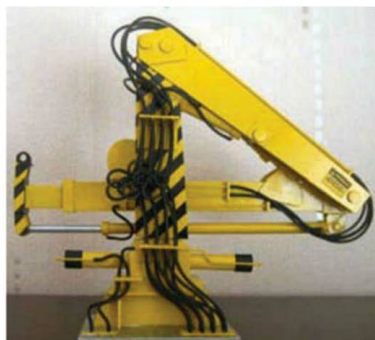


The crane can be made folded or open, painted blue

The blue crane shows how it can be built in either the open or folded position, and the yellow crane just shows how it can be painted and decorated to look different from the blue one. No

stickers are included with the kit and the deck plate shown is also not included.

Further details from Macs Mouldings, Tel: 01795 580521 or www.macs mouldings.co.uk **MMI**



The crane in the folded position painted yellow showing the pipework



No stickers are included with the 38-part kit



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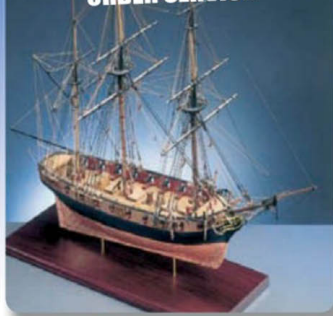
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