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MARINE

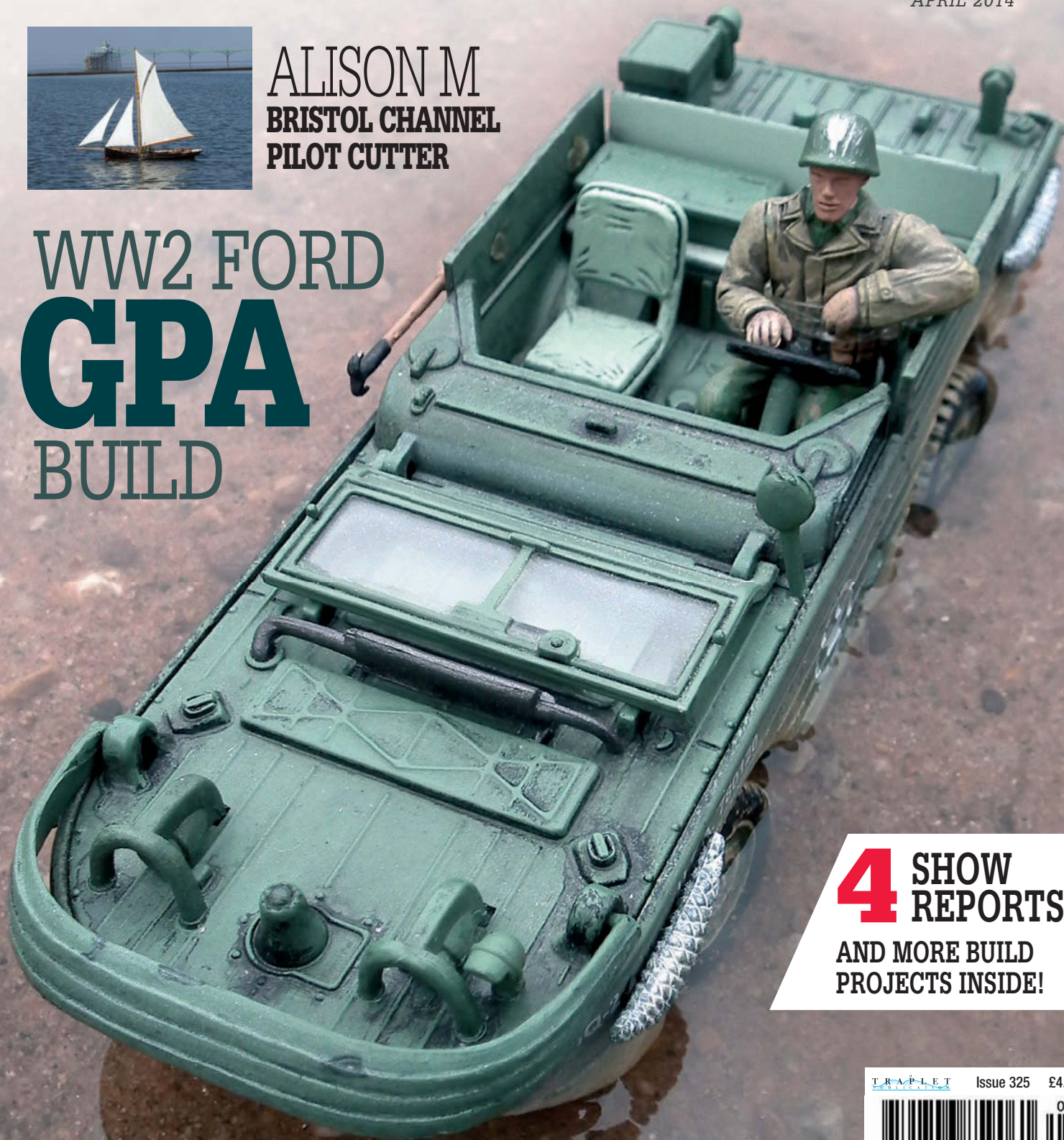
modelling INTERNATIONAL

APRIL 2014



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APRIL 2014 – ISSUE 325



COVER STORY

FORD GPA (GENERAL PURPOSE AMPHIBIAN)

Is it a land based vehicle or a boat? This amphibious vehicle was built for action in WW2 and was developed in the US for use in Europe with over 12,000 built in just over one year. This operational model was built by Theo Alberdienst who solved all the problems associated with building a working scale model. Please note that the driver and vehicle on the front cover is prepared for military action but changes for civilian use in the article!

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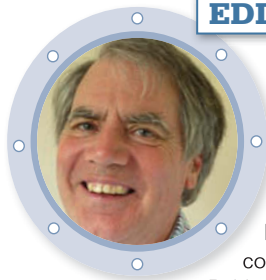
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Picton in South Island, New Zealand



MESSAGE FROM THE ENGINE ROOM

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.

HI EVERYONE,

One thing about helping to edit MMI is that I now take every opportunity to photograph and make notes on every craft I see on the water. There was no exception during our visit to New Zealand with my wife having to wait patiently while I ventured into dock areas to get a better photo. The diversity of craft was quite amazing, ranging from huge wood carriers to the local fishing fleet. It is no wonder that our marine modelling hobby attracts so many participants.

Talking of fishing fleets, the South Island of New Zealand has a very prosperous fishing industry. Being rather out on its own the fishing is not hindered by territorial waters or fishing quotas, having the whole Pacific Ocean to navigate. In Timaru, Canterbury, the fleet is made up of a number of fairly small fishing boats that regularly return laden with fish. The quality of the catch is clearly indicated by the flock of gulls flying around the returning boat. It was great to see the fishing industry flourishing while ensuring sustainable fish stocks.

The MMI Visit to Picton is my first article in which I give information on some of the interesting craft I managed to get pictures of during our holiday. I hope to complete more articles on the South Island of New Zealand over the next few months as they may inspire some new models.

Staying in the Far East, our free plan this month is of a 1:20 scale model of a Singapore Pilot Boat. On a similar theme we have the first of a three-part article on the construction of a 1:12 scale model of a Bristol Channel Pilot Cutter called Alison M.

Taking a completely different tack, the article on the Ford GPA outlines the history behind this amphibious craft and gives details of the construction of a fully operational 1:5 scale model. We also feature the story of two sister four-masted barques called Hans and Kurt giving their history from construction to the present day. Adding further variety, Tony Hill explains how to get a waterskier to perform realistically behind a model boat and Tony Feist describes how he scratch-built a 1:12 scale model of the RAF Seaplane Tender 1600.

Among the regular articles we have a simple introduction to LED lights in Airwaves, the use of ultrasonic cleaners in Powerplug, a report on the displays at the MYA AGM in Sail Free, and reminisce about the early days of marine I/C engines in Part 8 of Vintage Chatter. Overall, a very varied read for all marine modelling enthusiasts.

Happy modelling,

Chris Saunders *MMI*

Returning home with a good catch



MARINE modelling INTERNATIONAL

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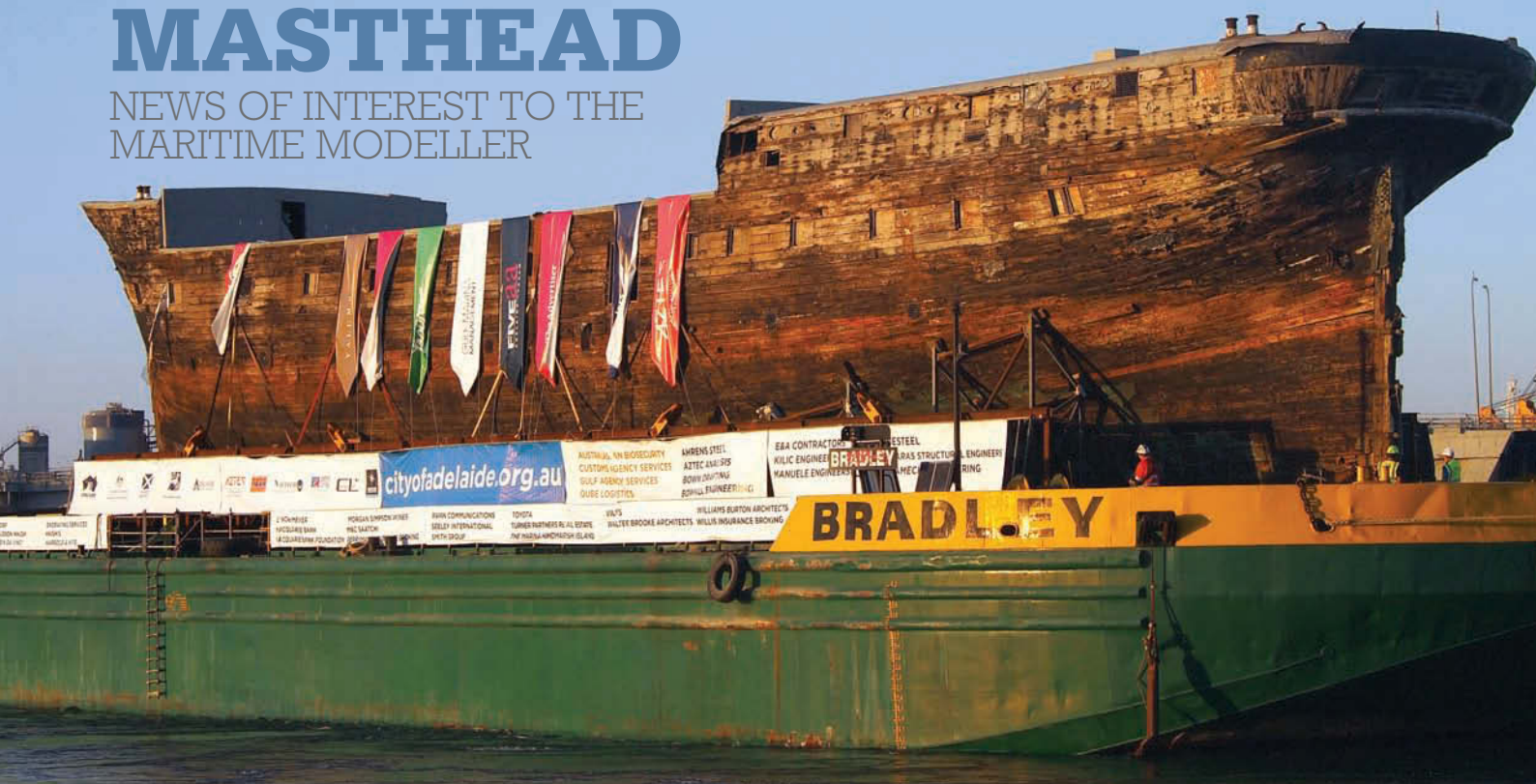
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MASTHEAD

NEWS OF INTEREST TO THE
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CLIPPER SHIP CITY OF ADELAIDE RETURNS TO AUSTRALIA

After a three month voyage from Scotland to Adelaide, the (full size) hull of the Sunderland built clipper City of Adelaide has safely arrived at her home named port awaiting restoration. The ship sank in Glasgow on the Clyde in 1991, where she remained for a year. The Clipper Ship City of Adelaide charity has been working to achieve her return to Australia for some time and after the voyage from Scotland as deck cargo on the heavy lift ship MV Palanpur she was transferred to a barge for a short trip to Dock 1 at Port Adelaide where she will hopefully be made into a museum. The cost of repairs has been estimated as £10 million. A ceremony will be held in May, to celebrate the clipper's 150th anniversary.

NATIONAL MARITIME MUSEUM

A new exhibition is to run from 16th April 2014 until 4th January 2016 to be called 'Guiding Lights: 500 years of Trinity House and Safety at Sea'.

Coinciding with the 500 year anniversary of Trinity House, the gallery displays 70 rarely seen objects from Trinity House and the museum's own collection, telling stories of the heroic and the extraordinary from throughout the organisation's history as well as looking to its future.

Dangerous waters flow around our coastline, concealing shallow rocks and treacherous sandbanks. London can be particularly difficult to approach by boat with the fast-flowing twists and turns of the Thames Estuary often shrouded in fog and mist. In 1514, Henry VIII granted a charter to a fraternity of London mariners who became the Corporation of Trinity House, charged with improving the safety of navigation on the River Thames. Later in the 16th century their remit expanded to setting up beacons and seamarks to help ships avoid danger. Since then, Trinity House has looked after pilotage, buoys, beacons and light vessels around some of the British coastline and has become the General Lighthouse Authority for England, Wales and the Channel Islands. The work of Trinity House over the last 500 years has prevented countless shipwrecks and immense loss of life, and its employees have shown great skill, bravery and endurance. While Trinity House's aims have remained constant its methods of achieving them have changed dramatically as new technology is adopted and developed.

For further details contact: Royal Museums Greenwich, National Maritime Museum, Royal Observatory Greenwich, The Queen's House, Cutty Sark Greenwich, London SE10 9NF. Tel: +44 (0) 208 312 6789. For the latest exhibition information, events, news and transport information visit www.rmg.co.uk

PROPOSED NEW CLUB IN WHITCHURCH (UK)

A new model boat club is currently in the process of setting up near Whitchurch in Shropshire under the name of Dearnford Model Boat Club. A suitable lake has been located, known as Dearnford Lake in Tilstock Road, which is privately owned and has good facilities like parking, toilets and cafe etc.

Any boating modellers interested in further details or would like to join please contact Dave Forrester at Dearnford Model Boat Club, c/o 19 Marlcroft, Wem, Shropshire, SY45AN, telephone 07581 158067 or visit www.dearnfordmodelboatclub.com/



INTERNATIONAL RADIO SAILING ASSOCIATION UPDATE

Approaches have been made to organisations that might usefully become members of IRSA, so far sadly with disappointing outcomes. This situation probably arising from misunderstood communications from IRSA and also from within the organisations themselves.

The establishment of a forum at: www.rudiosailing.org/ which is open to all our accredited DNMs, has not prompted many comments, good or bad, during the last year. This suggests that all is well received.

The IRSA Executive Committee members are volunteers and contribute hours of work that is unseen and mostly unappreciated by the radio sailing fraternity at large. IRSA is essentially an organisation with some 30 to 35 member nations and it is the Executive Committee's primary responsibility to communicate with these members. We are now in the final approach to the 2014 GA. Various milestones involving submitting motions and nominating candidates for the next Executive Committee may be completed by the time you read this text. However, you can keep in touch with what is happening before, during and after the GA by clicking on General Assembly 2014 on the IRSA website: www.rudiosailing.org **MMI**

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DIARY DATES

EVENT DATES FOR YOUR DIARY

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 either by Email mmi@traplet.com or post to MMI Editor, Traplet Publications Ltd, Traplet House, Pendragon Close, Malvern. Worcestershire, WR14 1GA. We need the Date, Venue, Organiser/who to contact and crucially an Email/Website address and/or a telephone number, a post code would be useful for Sat Nav's. A full listing of events for the year can be found on www.marinemodelmagazine.com we do need at least 8 weeks' notice to include in the printed magazine.

APRIL 2014

MMI DIARY DATES

APRIL 5

The 9th South West Ship Show

The venue will once again be Parish Wharf Leisure Centre, Harbour Road, Portishead, BS20 7DD. 10 am to 4 pm. For further information contact 01275 846178 or www.coastalshipping.co.uk

APRIL 5/6

The National Model Boat Show

In the centre of the country for all. Hermitage Centre, Coalville. Leicestershire. LE67 5EU. Saturday 10 am to 5 pm, Sunday 10 am to 4 pm. Club displays, private exhibitors, bring & buy, live steam engines, live rail on site, Trade Stands. There is a lake to sail on and an outdoor pool. Contact for further details 01606 891999.

APRIL 6

Dolphin Model Boat Club

All meetings are at Orpington Pond just off of Kent Road by the A224 Cray Avenue BR5 4. 10 am start. There will be a £2 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, Tel: 01689 834896

APRIL 6

Tug Towing & Scale Competitions also Leisure Sailing

Balne Moor MBC, Kingfisher Pond. Start 1030. Refreshments available. Contact Peter Newton (Sec.), Tel: 01977 791825

APRIL 12

Dolphin Model Boat Club Night Sail

All meetings are at Orpington Pond just off of Kent Road by the A224 Cray Avenue BR5 4. 7 pm start. There will be a £2 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, Tel: 01689 834896

APRIL 13

Model Engineering Exhibition

At the Monageer National School near Enniscorthy, Co. Wexford, Republic of Ireland. This is now the premier Irish exhibition with over 100 modellers. A large display of Boats together with the full range of modelling including: Die cast, Aircraft, Steam, Dolls houses, Trains etc. and trade stands will be at the show. For more details contact Fred Crampton txt mob (00353) 86 1060515 or phone (00353) 53 9366863 or Email: fcrampton@iol.ie

APRIL 13

Edinburgh Model Boat Club

Fast electric and I/C. Inverleith Pond. All are welcome, start time 12 noon. Contact david.jack5@btopenworld.com

APRIL 20

Bury Metro Marine Modelling Society.

Warship Day. The Club is situated off the A56 Walmersley Road Bury take the Royal Avenue road and turn into the car park. For those with Satellite Navigation the postcode is BL9 6NG. For more information visit www.bmmmsuk.yolasite.com

APRIL 20/21

St. Joseph's Model Railway and Transport Exhibition

Venue: Wexford Town, Republic of Ireland. Mainly trains with die cast and boats. Contact Donal Fallon, (00353) 87 9630257

APRIL 26

North Devon Marine Modellers Association

We are holding a Model show in Braunton Parish Hall, Braunton, North Devon EX33 2ES. From 10 am till 4 pm, for more information contact Simon Orrell on 07709956651. Website: www.ndmma.co.uk/ All welcome

APRIL 26/27

Spalding Model Engineering & Hobbies Show

Springfields Events Centre, Camel Gate, Spalding, Lincolnshire, PE12 6ET. Sat 9.30 am – 5.30 pm, Sun 9.30 am – 4.30 pm. Admission: £6 (Adults), £5 (Concessions), £2 (Under 16), Free (Under 5). Favourable rates for groups. For more information Email: spaldingshow@gmail.com Keep up to date through: www.spaldingshow.com

APRIL 26 to MAY 3

Thornwick Bay Autumn Model and Craft Week

A week to enjoy doing model boating, flying, tanks, crafts etc. Venue Thornwick Bay Holiday Centre, 4 miles north of Bridlington. For accommodation Tel: 01262 850369. Modellers can contact Jim Womer (evenings only), Tel: 01423 862971 or Email: jwomer@totalise.co.uk

APRIL 27

Dolphin Model Boat Club

All meetings are at Orpington Pond just off of Kent Road by the A224 Cray Avenue BR5 4. 10 am start. There will be a £2 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

APRIL 27

Kirklees MBC Steam Open Day combined with Mountfleet Models Open Day

The event is primarily for steam models and Mountfleet models but you are welcome to attend with any other type of model except I/C and high performance fast electric. 10 am to approx 3.30 pm at Wilton Park, Bradford Road, Birstall, Batley, WF17 8JH. Free car park, refreshments. Valid boiler certificates where required and boiler inspections carried out on the day. Competition for best Mountfleet Model. If you have a query on your boiler can you contact Stan on 0113 2675790 prior to the event.

MAY 2014

MMI DIARY DATES

MAY 3/4

South West Model Engineering, Model Making & Hobbies Exhibition

Royal Bath and West Showground, Shepton Mallet, Somerset, BA4 6QN. Sat 10 am to 6 pm, Sun 10 am to 5 pm. Contacts: Model Clubs etc. Email: nigel@swmee.co.uk Traders Tel: 0117 9071000 and speak to Martin. Website: www.swmee.co.uk **MMI**

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SAILFREE

CHRIS JACKSON LOOKS AT THE RADIO SAILBOAT WORLD

AUTHOR: CHRIS JACKSON  GREAT BRITAIN
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The morning of the MYA AGM, held in November annually, has for some years been given over to a gathering of many of the specialist traders on whom radio control model sailboat racing depends and the 2013 event was very popular with over 100 visitors making the most of this opportunity to talk directly to many of the names they normally only get to talk to on the telephone or, nowadays, via Email or even a website. According to the MYA there were a total of fourteen exhibitors, if you include the promotional stands for the Bottleboat, Footy and Marblehead classes, and we spent some time checking out their stands for items old and new!

BOTTLEBOATS

Since the creation of this unique design by Roger Stollery as part of a major competition for recycled items, sponsored by the Millennium celebrations the class has held a special niche interest that depends very much on the availability of the central moulding that accepts the fizzy drink bottles which gives the boat both its name and distinctive appearance.

Roger Stollery was on hand to tell us that kits and complete boats are now available from Trevor Jenkins in West Kirby (Email: trev@wirralmarine.co.uk) and also from Mark Barton at Waldringham Boatyard (Tel: 01473 736260, Email: mark@waldringfieldboatyard.co.uk) or you can use Roger's mouldings, patterns, jigs and copious instructions (Tel: 01483 421801).

CATSAILS

A name new to your scribe, although gaining plenty of plaudits from customers over the past year or so, Nigel Brown was on hand with samples of his sails and accessories. Nigel started his sailmaking career with much larger sailboats, cutting his way through a lot of sailcloth to make suits of sails for America's Cup boats and many other classes and has now turned his hand to

IOM and smaller classes including MicroMagic, RG65 and even vane A and 36 spinnakers. He sells online and has an excellent website:

www.catsails.co.uk

that has clear images of the sails and accessories such as transmitter covers and rig and sail-bags he produces. He is based in Locks Heath, Southampton, (Mobile number: 07884407871) and sails at Gosport.

Catsails offer some very neat sails, most of which appear to be based on a scrim cloth and with many colour options for their trim

CM YACHTS

Mike Clifton has been offering a wide range of items from his base in Oakley, Bedfordshire for a number of years and has for some time been the UK agent for Jeff Byerley who is in Australia. Among the Byerley designs there are Cockatoo 08, Mad Max and Cheinz all of which have top class results to back their credentials. A year or two back Phillip Playle came to an arrangement under which the hulls he moulds would be marketed by CM which would allow him to concentrate on the very time-consuming work of moulding and assembling of them. The three recent IOM designs from Dave Hollom, Arrival, Transition and Departure are among the top UK designs and are listed in the CM Yachts online catalogue. More recently CM Yachts has taken on the UK distribution of MX Yachts, which is based in Thailand and produces boats to the designs of Frank Russell. On the stand Mike Clifton had examples of three IOM designs, and also an RG65 design named Goth.

For more details go to www.cmyachts.co.uk

FOOTY CLASS

The Footy class had the largest number of new registrations last year in any UK class and the class association has a very lively and informative website at www.sailfootyuk.com The class has announced a programme of open events for the 2014 season and this includes a first important date on 2nd February for the Fred's Toephy event at Guildford, a UK Nationals at Cotswold MSC based in the Waterpark Lakes northwest of Swindon on 10th May and a weekend event on 26th/27th July for the Gold Cup which traditionally moves to different countries in Europe and is likely to benefit from this at the Furzeton Lakes, Milton Keynes. There has been some concern that the success of the very fine carbon fibre hull designs have been dominating events to the detriment of individual efforts in other materials and the stand had information about a dedicated trophy for timber boats for the coming year.



This Footy was designed and built in timber by Charles Detriche in Toulouse. One of a number he has completed. Note the unusual foresail arrangement, just the sort of originality the class should seek to encourage

GRAPHITE CREATIVE

John Tushingham and Liz, his wife and skipper in her own right, have moved on from being only top competitors and making their own sails and rigs to offering a range of specialist items to others. This started with the Micro Magic class when John developed some very high grade rig parts including a replacement gooseneck and then went on to offer sails in a range of different sizes to suit all weather conditions. These have travelled to many countries, no doubt partly due to John's high placing in many international MM events. He also offers sails for the popular IOM class. He then became one of the small group which helped to develop the Joysway Dragonforce which has become a bestseller in standard form. The Dragonforce Class Rules allow a number of upgrades and minor changes, including two reduced size and area rigs and these can be ordered direct, along with deck patches and a pack of decals to give your boat an individual look.

For more details contact Graphite Creative, 70 Bolling Road, Ilkley, W Yorks., LS29 8QQ, Tel: 01943 816808, or Email: john@graphitecreative.co.uk

HOUSEMARTIN SAILS

A few years ago Martin Roberts was offering a very wide range of items across vane and R/C classes, starting from sail-making and going on to complete boats. Almost a victim of his own success at both forms of competition the volume became too much and so he decided to concentrate on the items that he does best. He now offers specialist rig kits and sails, a full range of fittings and championship winning equipment at affordable prices to quote his own words!



Martin Roberts sailed this Chienz design in to second place at this year's IOM Nationals, naturally equipped with Housemartin sails

Housemartin Sails are based at 121 Temple Road, Birkenhead, Wirral, CH42 9JZ. Tel: 0151 609 1339 or Email: andrea@housemartinsails.co.uk



This brand new RMG deck mounted on-off switch and battery state reader was on the RC Winches stand at the MYA Trade Show

RCWINCHES.COM

Small but concentrated in a niche market is one way to go if you want to keep a modest level of administration and this supplier concentrates on the RMG range of high grade winches, their additional items such as switches and winch drums and transmitter covers and sailbags. On this display we were shown an example of the very

latest RMG deck mounted switch, quite different from the one we reviewed back in the June 2013 Sail Free column. This one has a simple mounting in a 20 mm diameter hole, into which the top half is inserted and held by a screw threaded plastic nut rather similar in action to a typical UK household light shade holder. The electronics are all contained underneath the circular disc and there is a simple press button to operate the on-off switch and an LED to show battery state.

For more information on these items telephone 07799887088, visit: www.rcwinches.com or Email: rcwinch@btinternet.com

RC YACHTS – SWANLEY

Mike Weston has been at the centre of the Micro Magic action since racing started in the UK for this class and he also operates a small fleet that is used by the MYA at major shows, although not at the Boat Show in London this January where the usual pool has been omitted. He has also been developing a 'race-ready' version so that purchasers can start off with a competitive boat rather than need to modify a standard kit. The poor delivery situation since the takeover of Graupner has caused him plenty of headaches so the advent of the Joysway Dragonforce has been a very welcome thing. Not only does he stock the standard boat kits but a range of upgrades, spare hulls and short fins and even a plastic carry-box with internal foam beds for all components.

Check out their website at www.rcyachts.co.uk or telephone 01322 666363.



RC Yachts (Mike Weston) shared a large display with GraphiteCreative (John Tushingham) and had this replacement Dragonforce hull and a very professional travel case for these boats on display

MARBLEHEAD CLASS

The stand at the MYA Trade Show was designed to show off the range of options available and was not a trading stand in itself. There were examples of a number of hulls from Graham Bantock, Brad Gibson and Roger Stollery and a loop tape running a copy of our DVD Marvellous Marbleheads which has a lot of action photography taken at the last Worlds in Fleetwood. We covered this class in the last Sail Free column and by the time you read this there will be quite a few people looking forward to the upcoming Worlds in Gouda, Holland.

MPPI PETER

Peter Popham is a very experienced radio sailor and member of the Three Rivers RYC that sails at Bury Lake, Ruislip. He has developed a small business that offers a transmitter cover, sail bags and so on. The transmitter cover is fully waterproof, lined, has a clear plastic front panel and grommets to provide a hole for the aerial. It is available in four colours, wine red, royal blue, dark red and navy blue. The sail bags are to suit different classes.

For more information contact Peter at Tel: 01442 213982, Mob: 07736 152192 or Email: m.popham@sky.com

PJ SAILS

Peter and Lesley Wiles have been offering a wide range of model yacht kits, hulls, sails and accessories for many years and can be relied upon to provide top class products and practical advice across most classes. With an established list of hull mouldings to suit most classes from 36R up to A class, and a wide range of existing fittings and sail making, the last year has seen the introduction of some new own brand pulley blocks, boom cursors, ball joint detachable turnbuckles and so on. They are also the makers of the original Transmitt for which they purchased the manufacturing rights from M and M Enterprises some time ago.

They have an online catalogue at www.pjsails.co.uk which is a facsimile of their A5 size, 36-page printed item. Contactable also by Tel: 01202 744101 or Email: peter.wiles4@ntlworld.com

are designed and produced in Australia by Rob Guyatt. Over the years the range of winches has grown to cover all sizes of radio sailboats and a number of accessories have been added. The spiral drum which solves the problem of tangling cord in the hull and the battery status reader have been followed by the deck mounted switch we reviewed in June 2013. Bill Green was on hand at the show and their stand also had a modern glass fibre moulded R36 hull, one of their active fleet at the Bournville club showing that this class is by no means down and out!

Smartwinch UK also operate a repair service for customers and they have a very good website which has full data and excellent images at www.smartwinchuk.co.uk and can also be contacted by Tel: 0121 705 4478.

TAYLOR MADE YACHTS

Taylor Made Yachts consists of a team of two people, the designer John Taylor and the builder of his designs, Damian



Peter Wiles (aka PJ Sails) is a keen supporter of the Radio A class with his current boat, a Sweet Mk.9, equipped with all his own brand sails and fittings (Sail number 59)

ROBOT YACHTS

This supplier started with the Robot IOM design which Tony Edwards sailed to great effect in top events, moulded by his son James who had studied the subject and set himself up at his home in Sherborne, Dorset. They then moved on to the early Britpop hulls, only three if I remember correctly, and when this design became the number one design of choice Robot Yachts had their hands full coping with their order book. Alongside the IOM class Robot started to mould the RG65 design from Mark Dicks, and on their stand in Bournville they were showing a prototype hull from Brad Gibson based on his Marblehead Grunge which is as yet not in production but was producing plenty of interest!

To make contact go to their website: www.robotyachts.co.uk, Email: info@robotyachts.co.uk or Tel: 01935 507968.

SMARTWINCH UK

Bill Green and Neil Rothwell started this small company a number of years ago to provide UK and European skippers with an easily accessible contact point for the world famous RMG winches, which

Ackroyd. Their ethos as written on John's website is, "A creation by two people with a passion for radio sailing. The mix of design, build and enthusiasm produces an affordable, competitive product for all ages and abilities to enjoy." This ethos is echoed throughout John's website, because both are not interested in making Rolls-Royces and then having to charge extravagant prices. Both John and Damian produce yachts in their spare time despite both having full time professions. They teamed up two years ago as John had completed an IOM and a Marblehead yacht design. Damian had previously experimented with moulding practices and was looking to progress further. Therefore, teaming up together became a natural move to make.

John's first design was the Pixel (Marblehead), narrower than most modern marblehead yachts but equally as fast. The hull incorporates a chine running from the transom and along the hull line. The Pixel has featured in both the UK radio and vane sailing Championships. In 2013 Pixel, sailed by David Bell won the UK (Vane) Championships at Fleetwood. A fantastic achievement for David, but equally for Taylor Made Yachts, as this was the first championship winning yacht



Taylor Made Yachts had examples of both their production hulls at the show, this one the Marblehead design named Pixel

design after only two years together as a team.

The launch of the Shiraz (IOM) design last January is John's second design to be produced by Damian. This design has been continually improved both in build quality and sailing performance over the last 12 months with subtle changes bit by bit and now is seen to be a finished product. Featuring in the UK and World Championships, the Shiraz is considered to be the alternative to other (IOM) designs, from the more established suppliers.

To learn more about the Pixel and the Shiraz yachts please go to



The Shiraz IOM design was also on the Taylor Made stand and John Taylor also sailed this boat in the recent IOM Worlds in Israel

their website: www.taylormadeyachts.com which also has details of a new IOM design for home builders.

CONCLUSIONS

As you can see there was plenty to browse at the MYA Trade Show although there are other significant outlets that were not present. For those not able to get to the event we hope this report will provide a welcome summary of the people, companies and products that were there. **MMI**

 GREAT BRITAIN

2014 GAMES 1

AUTHOR: ROGER STOLLERY

ORGANISED BY GUILDFORD MODEL YACHT CLUB AT ABBEY MEADS LAKE, 22ND FEBRUARY

After two postponements, one because of weed at Poole and another due to floods in Chertsey, GMYC's determination to sail the Games 1 event finally paid off in near-perfect wind and weather conditions. The lake looked magnificent with the high water level just a foot below the top of the bank, which is normally 8 feet above the water level. The west-south-west light to moderate winds allowed an 800 m windward/leeward course with a leeward gate with competitors on the southern control area, giving some entertaining fast planing runs with rudders showing at times. With the recent frustration of not being able to sail, the competitors, representing six clubs, really enjoyed this open event, with the warm sunshine being an added bonus.

John Shorrock from Reading won the first race with his new modified and swing rigged Quark, which was very fast off the wind. Hugh McAdoo then took the next two races with his Prime Number before letting John come back to win Race 4. Martin Crysell then took Race 5 also sailing a Prime Number, which left the lunchtime leader board showing Hugh with 8, Martin 9 and John 11 points.

After lunch, Roger Stollery got his Crazy Tube Free going to win Race 6, but then let Hugh win the next. Not to be outdone John put in another win in Race 8, but let Roger back to win Race 9, with Terry Rensch sailing another Quark second. Roger prevented Hugh from winning the next three races by taking Race 11 and then went on to win Races 13 and 14.

Martin and Hugh each won one of the final two races to make it a very close finish to the event with just 3 points covering the medal places! There had already been some amazingly close finishes,

where the whole fleet managed to get across the finishing line within a few seconds. The event was sailed in the most sporting manner with no penalty turns outstanding and was thoroughly enjoyed by all.

RESULTS

1st Roger Stollery, Guildford, Crazy Tube Free, 27
2nd Hugh McAdoo, Guildford, Prime Number, 29
3rd Martin Crysell, Guildford, Prime Number, 30 **MMI**



Hugh's (16) port tack start worked on this occasion!

WATERLINES

SOVIET/RUSSIAN AIRCRAFT CARRIERS: KELVIN CONCLUDES THE STORY OF NINE AIRCRAFT CARRIERS

AUTHOR: KELVIN HOLMES  GREAT BRITAIN
khwaterlines@btinternet.com

The first Soviet aircraft carrier with a full-length flight deck, the Riga, was laid down in April 1982 and launched on 5th December 1985 as the Leonid Brezhnev, a name she had actually carried from November 1982. Just five days after the launch, the same shipyard began work on a sister-ship again with the name Riga. At 67,000 tons full load the Leonid Brezhnev was the largest ever Soviet warship. Still clinging to the missile cruiser role she carried 12 anti-ship SS-N-19s (an improved version of the SS-N-12) and 24 anti-air SA-N-9s (192 reloads) plus a new point defence system which combined two 30 mm Gatling guns and an SA-N-11.



Admiral Kuznetsov, the first Soviet/Russian carrier with a full length flight deck



Mountford's Admiral Kuznetsov is the only currently available 1/1250 model, pictured here with a Kilo class SSK



The Chinese Liaoning is the former Russian Varyag

was launched in December 1988 but work ceased in 1992 and she passed incomplete into Ukrainian hands and then on to the Chinese in 2000, departing the Black Sea the following year. Just over ten years were to pass before she was completed for the Chinese Navy as the Liaoning operating the Chinese built Shenyang J-15 fighter, a copy of a Su-33 prototype acquired from the Ukraine in 2001. This aircraft has been severely criticised in the Chinese press due to limited range and lack of payload.

Meanwhile, back in the USSR (couldn't resist – please see MMI Nov 2000 or look out for this August's) plans were in hand during the 1980s for a nuclear powered aircraft carrier and shortly after the

New aircraft far superior to the old Yak-38 Forger were planned and included navalised versions of the Su-27 Flanker, Su-25 Frogfoot and later the MiG-29 Fulcrum, plus of course the Ka-27 Helix helicopter with a theoretical maximum capacity of 16 helicopters and 36 jets. The latter figure must have assumed a mix of large and small types, there being far less space for the large Flanker of which a mere 20 production airframes were built. The Su-25 Frogfoot was developed as a shipboard trainer and has been seen onboard, however, only ten were built and all are believed to be non-operational. After two prototypes the navalised MiG-29K Fulcrum was abandoned in 1991 to be revitalised in the late 1990s for the Indian Navy.

In 1987 Leonid Brezhnev was renamed the Tbilisi then in 1990 the Admiral Kuznetsov. To date the only aircraft operated regularly have been the Flanker E (re-designated Su-33) and Helix. The second hull, by then renamed the Varyag,



Coastline's 1/1250 model of PD-50 floating drydock accommodates a scratch-built Tbilisi (later re-named Admiral Kuznetsov)



Su-25 Frogfoot twin seat trainer on the Kuznetsov; of four bought by the Russian Navy just one survives



Su-33 Flanker prepares for launch; what a wonderful colour scheme

As of early 2014 just the Admiral Kuznetsov remains in service operating typically about six S-33s (and a similar number of helicopters including ASW, AEW and SAR types). The ship is overdue for refit and reportedly this will commence soon, probably taking her out of service for the rest of the decade. With the MiG-29K now being procured by the Indian Navy, the decision was taken to replace the aging Su-33s on Admiral Kuznetsov with MiG-29Ks, the first four of which were delivered in late 2013. Twenty MiG-29Ks have been ordered and should be operational by the time her refit is complete. The Flankers were not a great success



CM-KR 1/1250 model of Admiral Kuznetsov with Cap Aero's Flankers



Another view of the Admiral Kuznetsov

Riga went down the ways in late 1988 work began on the estimated 85,000 ton Ul'yanovsk. Armament would have been 16 SSMs type SS-N-19 (with NATO codename aptly of 'Shipwreck') plus eight combined Gatling/SAM systems and a pair of ASW launchers. This would have been the first Russian carrier to be equipped with steam catapults but with experience limited to a land based prototype catapult at their Crimean training field, the Russians had never taken a carrier catapult to sea. Air group was specified as 20 MiG-29, 25 Su-33, 20 Ka-27 and in a new development for the Russians eight Yak-44E, an airborne early warning (AEW) and control type similar to the USN's E2C Hawkeye. The carrier project was cancelled at 20% (some sources say 40%) complete in January 1991 and an un-named planned second vessel was never laid down. Scrapping began on 4th February 1992 and was completed by the end of October 1992. The Yak-44E, which never progressed beyond the mock-up stage, was also abandoned.



MiG-29K Fulcrum landing on INS Vikramaditya is also a twin seater and is still carrying Russian red stars (Indian Navy)



Albatros 1/250 Liaoning; the Flankers also by Albatros are available separately (photo courtesy Antics who have stock)

having never been observed to leave Kuznetsov's ski jump with any underwing ordnance or other stores; they just couldn't lift a useful load and get off the ramp. Wear and tear and accidents have reduced the small total bought to a dozen or, probably, now less and the most ever carried on a 'deployment' by the carrier was six, a further limitation being the number of pilots qualified for deck flying at sea which has never been more than 17. The ship has been observed with tactical numbers 111 and more recently 063.

WATERLINE MODELS IN 1/1250

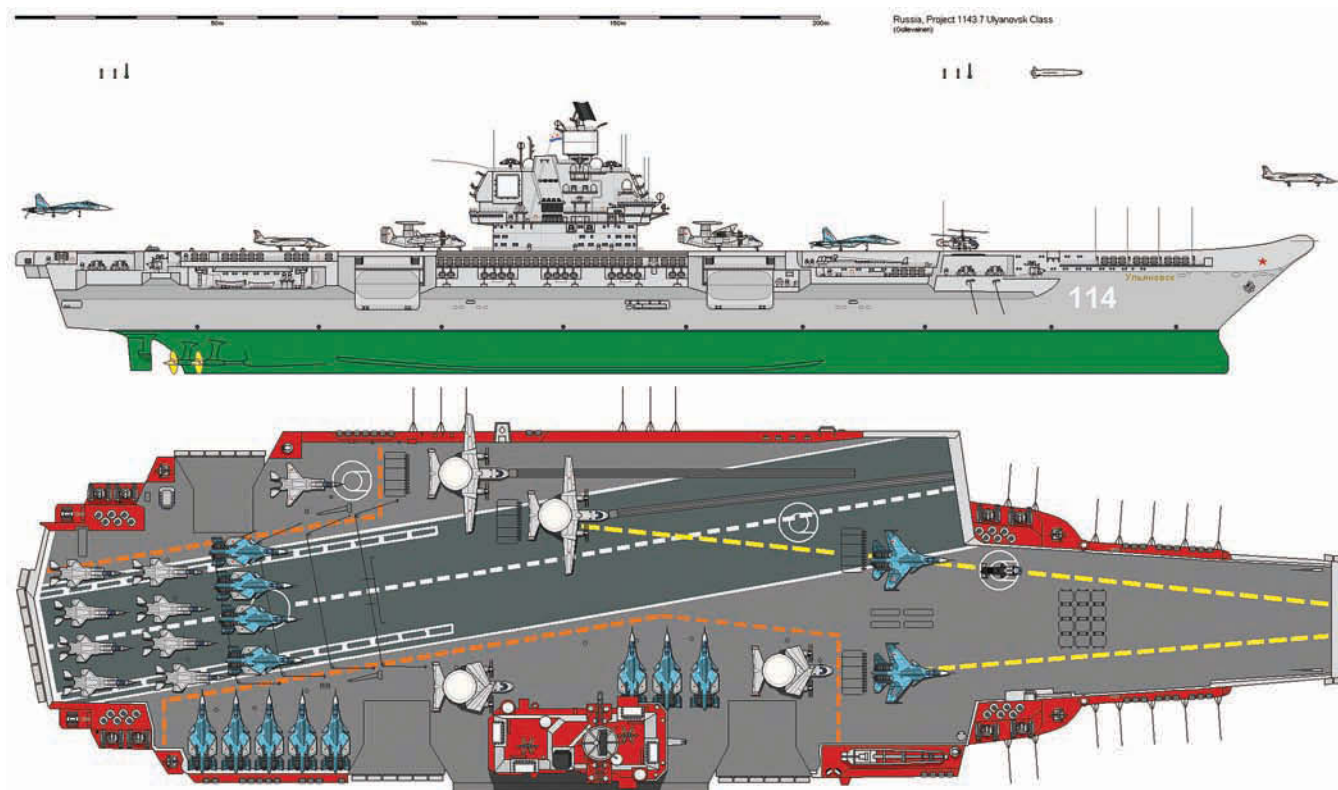
As can be seen from the table, both Trident and Delphin produced models of the Kiev and Moskva classes, with the Delphins re-issued by Hansa. All of these are long gone leaving Skytrex's Kiev the only option; the reborn Skytrex 2013 Ltd do intend to re-issue the model in resin. It is a good representation and can also be used for those two conversions mentioned last month.

Argos's Baku is currently available as is Albatros K's Liaoning (former Varyag). After many years with no Tbilisi/Kuznetsov which prompted the writer to scratch-build one, we were then presented with two: CM-Ps (not currently available but could be re-issued as CM is very active) and lastly Mountford's which can be bought assembled and painted or as a kit. The latter includes three each of Su-33 and Su-25, one Ka-27 and full deck and recognition pennant number decals. Very latest/imminent is Mountford's Ul'yanovsk for which a representative air group is available.

CM-P also produced the Su-27 (CM-P 1020a) and MiG-29 (CM-P 1020b) but of better quality is Cap Aero's range (see www.magisttermilitum), which includes all the aircraft types mentioned above.

For the ultimate in harbour dioramas Coastlines (via www.shipmodels.co.uk) have produced a model of PD-50 and it does not take too much work to create a lower hull for an aircraft carrier. **MMI**

BELOW: Cancelled Russian aircraft carrier Ul'yanovsk, soon to be a Mountford 1/1250 model (Source: Internet)



Ship	Completed	1/1250 Model	As In	Notes
Moskva	1967	Delphin D64 (re-issued by Hansa as S400)	1969	
Leningrad	1968	Trident Alpha (Ta) 90	1969	
Kiev	1975	D142, Hansa S399, Ta200, Skytrex R1728	1976	Skytrex was a kit
Minsk	1978	(Can be represented by any of above)		
Novorossiysk	1982	None		See MMI Feb 1986
Baku	1988	Argos AS-R02	1991	See MMI Sep 1989
Kuznetsov	1990	CM-P 1020, Mountford MM252P or K	1991	MM252 Painted or Kit
Varyag	2012	ALK 5009 is Liaoning	2012	Ship completed by China
Ul'yanovsk	- -	Mountford MM tbd (due Feb/March)		Ship scrapped incomplete 1992

Soviet/Russian Carriers – Ships and 1/1250 Waterline Models



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CONTACT BRYAN SMITH 01909 564385

MOTOR TUG LOWGARTH

Scale 1:32
Length 950mm
Beam 270mm



The original vessel was built by Richards Shipbuilders at Lowestoft and launched in 1965 as a development of the Plumgarth/Avongarth class. The success of her design led to a further four ships of almost identical design.

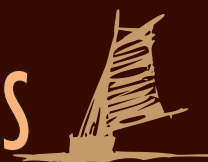
She was powered by a 7 cylinder oil engine built by Ruston & Horsby, to a single fixed pitch propeller operating with a Kort steerable nozzle.

Following sale by Cory and a number of years moored on the River Weaver she was purchased by Rigg Shipping and converted for coastal towing.

Latterly Lowgarth was sold to Fendercare and now operates in Nigeria carrying the name Charles Plane.

Kit comes complete with brass propeller and shaft

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POWERPLUG

OUR I/C BOAT MAN LOOKS AT TECHNIQUES OF USING AN ULTRASONIC CLEANER ON POWER CRAFT PARTS

AUTHOR: RICK EYRICH reyrich99@gmail.com



When the time comes to clean/refurbish any small engine parts on your I/C hull a household grade ultrasonic cleaner can be used to remove any grit or varnished fuel residue in or on their make up

For any mechanic in my age bracket, there have been many, many instances where something that was badly rusted, corroded or gummed up with debris ended up on my workbench that had to be torn down, cleaned and reassembled to its original, fully working condition. The majority of these items were victims of neglect and/or being left in the rear of a shed, barn or garage for a long period of time and this is about the worst thing anybody can do to a piece of machinery. This rebuilding process would usually involve removing rusty screws that could break off at any time, fighting the hardened gaskets and rubber seals with scrapers and hoping that no parts would suddenly fly away into another area of the shop. Then, once you did manage to get into the 'guts' of the machine, every one of its components looked and smelled so bad even the shop cat or dog would run out the door! Now knowing the full extent of the gizmo's grime levels you would now attempt to clean its components enough to get them all working correctly as a single unit.

In general, this meant using a series of very potent solvents that required the use of extra thick gloves and a full face mask to avoid contact with the cleaning solutions. Usable in a well-ventilated shop area these solvents could still create a strong and lingering odour; plus, this aroma would end up on your clothes, skin and up your sinuses. If you were very lucky, after only a single round of solvent flushing, the parts in question could be inspected and reassembled; but, in the case of a smaller carburettor that had several tiny fuel passageways in its make up, a second or third dunking in the 'stew' was commonplace to de-clog the openings. For the average modeller this type of cleaning isn't really an option; so, taking a bunch of parts to be cleaned by a shop means a big drop in the hobby budget. Now jump ahead 20 plus years when your scribe was looking on his trusty Compac PC and happened to run across an online discussion on cleaning old dirt bike Mikuni brand carburettors.

Within the first few posts, the discussion quickly brought up the

use of an ultrasonic cleaning machine to help remove years of old varnished fuel from the carb's inner spaces. Having no prior knowledge of these units (I've led a sheltered life), I then spent some more time reading up on ultrasonic cleaners. First introduced for industry level cleaning jobs in the middle part of the last century ultrasonic cleaners became available for household usage in the 1970s and '80s. Using high frequency waves to create tiny bubbles, these bubbles penetrate the part in need of cleaning via whatever liquid that was present inside the cleaner's main tub. Anything from plain water to strong solvents can be used in the ultrasonic cleaner and these machines are capable of cleaning everything from fine jewellery to firearms. For my purposes, I wanted to try out one of these machines on some normal I/C boat components without the need to stink up my house, myself or anything 'She Who Must Be Obeyed' could come in to contact with. Luckily for your scribe, SWMBO was aware of my attentions and gave me an ultrasonic cleaning machine for my birthday!

UNIT LAYOUT AND USAGE

Nestled inside its shipping container my cleaner was a unit sold here in the States by Harbor Freight Tools, which is a popular retailer of power and hand tools. This type of tool seller is becoming very commonplace on both the Internet and in regular storefront locations, and my ultrasonic cleaner was actually listed in Harbor Freight's housewares/kitchen section. Made up of a plastic outer housing with what appears to be a stainless steel 2.5 litre inner tank that holds your parts, the unit also has a clear lid and a separate inner tray for the tub. Designed to run with either cold or heated water by the unit's built-in element the cleaner features a multiple time setting circuit to suit your component's crud removing level. A basic, paper, owner's guide came with the machine and after reading it a couple of times I decided to do some simple cleaning with it before tackling a serious I/C boat chore like cleaning a gummed up gas boat carburettor.



Made up of a plastic outer case with a steel inner tub this ultrasonic cleaner has a built-in timer and a heating feature that is useful for removing old fuel, rust and even baked-on castor oil off I/C boat engine components



Multiple time cycles are used on the ultrasonic cleaner and you have the option of doing cleaning with either cold or hot water



To keep parts off the metal tub's bottom surface a plastic tray comes with the machine; plus, you can make up a simple hanger to suspend your component inside the tub's cleaning solution



Any number of household cleaners and solvents can be used; however, even plain water with only a few drops of dish washing liquid can clean many very dirty parts



Regular white vinegar is another popular sonic cleaning agent and for extra heavy grime a nylon bristle brush and/or monofilament fishing line/leader will help you clear loose debris from small openings

Since it was a brand new cleaner, some of my wife Karren's jewellery items in need of some refreshing were placed in the tank followed by some bottled water and a couple of drops of some regular washing-up liquid. Using the machine's three-minute cleaning setting, the unit was started, and with cold water in the tub you could actually see the jewellery's outer surfaces begin to shine up in the water/soap solution. Once the cleaning cycle was finished the jewellery was removed from the unit and rinsed off with tap water then allowed to air-dry on a soft cotton towel. Overall, this single-cycle cleaning did just as good a job as when they'd been cleaned by a jewellery shop; so, Karren was happy – good first attempt! For the second test cleaning, a slightly nasty nitro carburettor from a friend's aircraft was chosen, as it had recently suffered a crash that saw the entire nose of the plane being pushed into a sand hole. Wanting to clear away the grit without damaging the carb housing it was put in the cleaner's tub with a water and citrus based cleaning solution.

Again, a single three-minute run cycle was done to the carburettor and once removed/rinsed there was no sign of any remaining dirt, grit, grass or leftover nitro fuel residue anywhere on the carb body. Following a complete flush of the carburettor's internals with denatured alcohol the unit was remounted on the engine and the aircraft was once again ready for the flying field. Happy with the results we'll now overview the cleaning of a Walbro carburettor that had been left with fuel in it for over two years.

Pre-soaking a really gunked up carburettor or engine part in a citrus based household cleaner will help loosen the built up gunk and speed up the chore's overall workbench time



Over time a small marine nitro engine/carburettor assembly can get clogged up with old fuel, especially fuel that uses castor oil as a lubricant; so, a couple of cleaning cycles may be necessary to remove all the residue

WALBRO FLUSH

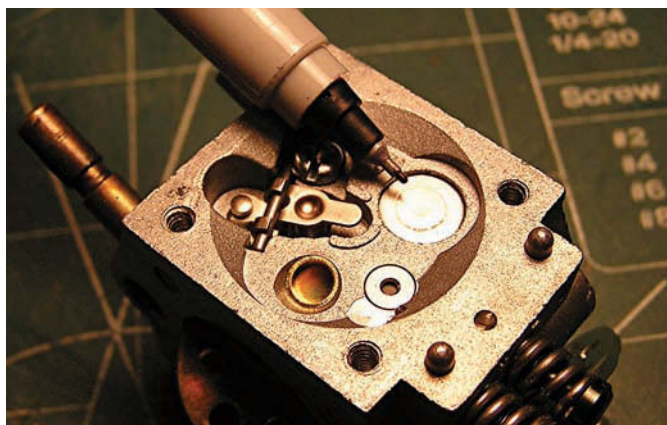
Outwardly clean our test Walbro internal spaces were coated with a lot of varnished fuel mix; so, the entire carburettor would have to be disassembled prior to its run through the ultrasonic cleaner. Depending on the amount of built-up gunk inside the fuel mixer, its sealing plates, mixture needles and all of its metering parts had to be removed; plus, the Walbro's welch plugs which cover its internal fuel passageways, had to come off as well. Located on the metering side of the unit's main housing, these small round brass or aluminium plugs will demand a small punch or chisel to loosen them from their openings as they are a press fit in their recessed holes. These plugs will be unusable once they are detached from the carb body which means that the boater will have to invest in a complete carburettor rebuild kit once the Walbro is cleaned and ready for reassembly. Now that everything was removed out of the carb body

the ultrasonic cleaner was set up with bottled water and a cap full of a regular degreasing liquid.

NOTE: The reason I use bottled water in my cleaner is because my tap water has a fair amount of iron in its make up and could counteract the cleaning process.

Set up with the unit's heat option turned on, the carburettor body received a three-minute cleaning cycle; then, it was noted that the amount of varnish on the Walbro would demand a second 'run' in the cleaner. After another three minutes, the bulk of the old fuel build-up had been removed and the carb body was removed from the tub and allowed to cool to room temperature. Using a soft nylon bristle brush (an old toothbrush will work) the entire carb was scrubbed under the tap and then was given a quick blast of 'canned' air. Allowed to air-dry for a couple of hours, the test carburettor was now clean and could be refurbished with a rebuild





Small plugs cover the Walbro's smaller fuel passageways and they may have to be removed when cleaning the main carb body after which new plugs will have to be installed as the carb is reassembled

kit. In the event your carburettor doesn't come clean after even a couple of runs in your ultrasonic cleaner it's possible to either use a bit more degreaser solvent in the tub or do a pre-soak of the component before you actually use the cleaner unit. Again, your citrus based cleaner or degreaser, placed in a disposable bowl will create the soaking medium and once you're ready the component can be moved to the ultrasonic machine as is.

FUTURE CLEANING IDEAS

In talking/reading with some folks who regularly use an ultrasonic cleaner, a host of different solvents are usable on most metal or

plastic parts on your boat. Regular white vinegar is a very popular solvent for these machines and can be used as a pre-cleaner before switching to a citrus based cleaner. Suspending your part via a home made hanger in the tub is sometimes done so that its entire outer surfaces can receive the cleaner's high frequency waves and give you a clean part in fewer run cycles. One trick for clearing away loosened gunk from any small openings on your components is to use a short length of regular monofilament fishing line or leader material to run through the small holes as this round, smooth line won't scratch the openings like a metal wire would. Dealing with the really small parts you'll find in a boat's carburettor, etc. you might also want to contain them in a fine mesh bag when cleaning them in the machine. Finally, once you're finished doing any cleaning chores with your ultrasonic cleaner, it too will need to be thoroughly cleaned to prevent any problems when you're ready to tackle another project.

CLOSING COMMENTS

Like any workbench tool, I'm sure there is a lot more interesting information to help the modeller use this kind of cleaning unit on marine craft components. So far I've only done a few cleanings with my unit; however, there has to be a whole host of as yet unknown uses for this machine including pieces on any number of boat types. Fast electric motors and ESCs, scale hull fittings and other hardware related to your vessel could be cleaned/restored by one of these machines. If you've already done some ultrasonic work in your shed, garage, etc. please feel free to Email me your successes (and failures) via the online address on the column's masthead.

Looking to next month's Powerplug column, we'll be discussing the use of wheeled carts at I/C boat races; plus, you'll be seeing a ready-made cart that began its life as a beach wagon switched to an I/C hull carrier. Talk to you next month! **MMI**

TRICK OF THE MONTH

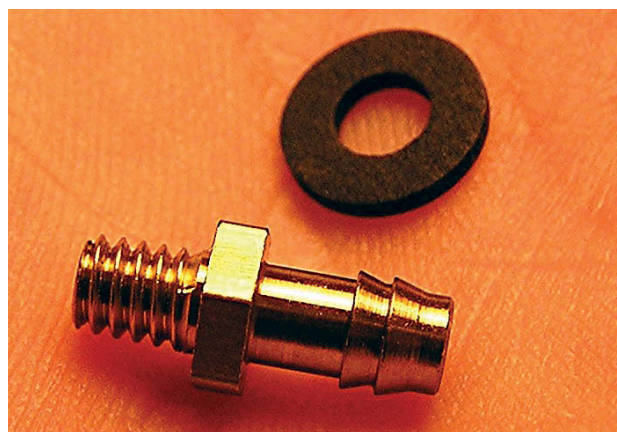
On those nitro/petrol marine craft that are designed with either open engine bays or are fitted with air scoop equipped canopies, you can greatly reduce any engine rust/corrosion worries by wiping down the power plant and pipe with a water displacement lubricant. Although the majority of these compounds come in aerosol cans applying them in a spray will put the lube all over your vessel; so, that's why you should put the water displacement liquid on a rag and then wipe down the engine/pipe. A light coat is all that's necessary to protect the metal surfaces and whenever you've finished running your power craft another quick wipe is always a good idea.



A quick wipe down with a water displacement lubricant can prevent rust or corrosion on your boat's engine or exhaust pipe especially if your hull design uses an open engine bay/scoop air inlet canopy layout

TIP OF THE MONTH

One of the first things you'll have to do when adding an aftermarket tuned pipe to your nitro-engined hull will be to install the pressure fitting to the pipe body which will provide pressure to your onboard fuel system. Normally a small threaded brass nipple, this pressure fitting comes with a fibre sealing gasket; but, due to the curved surface on the average aluminium or steel-bodied nitro exhaust pipe, the gasket might not seal like it should. To avoid this glitch, adding a dab of JB Weld epoxy around the fitting pipe junction will create a good secondary seal that will ensure that plenty of exhaust pressure flows to the boat's fuel system. I use the slow-set/cure JB Weld compound as I believe it flows more smoothly around the fitting, gasket and the pipe surface and if possible, I cover the majority of the area to further seal the brass nipple to the pipe body.



Sealed with a high temperature epoxy like JB Weld, this exhaust's pressure fitting won't leak and compromise the boat's fuel system flow speed

AIRWAVES

SIMPLIFYING THE MYSTERIES OF LIGHT EMITTING DIODES

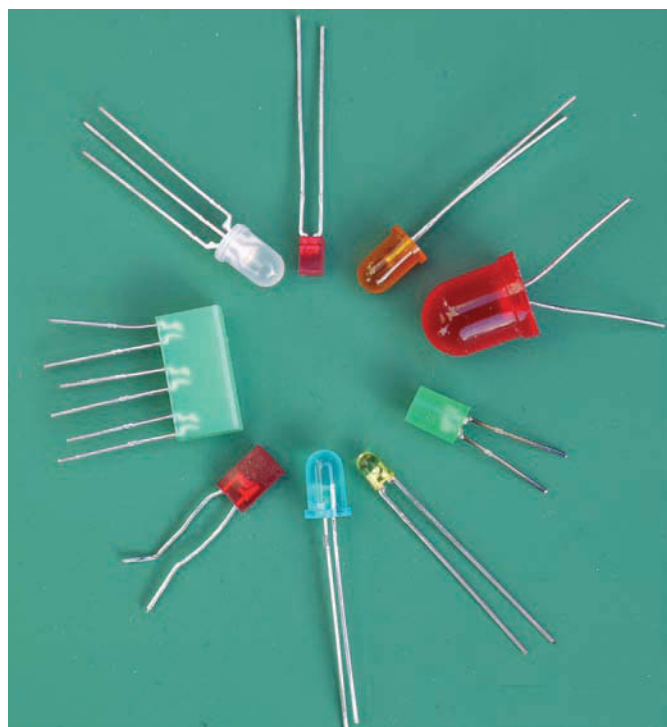
AUTHOR: CHRIS SAUNDERS  GREAT BRITAIN

Many of my fellow boat modellers often ask me to help set up their lighting systems, particularly when they are trying to use LEDs. They are quite confident with electrical circuits but are mystified by the seemingly more complex installation of LEDs. What I will try to do in this article is simplify the use of these very efficient light sources as much as possible.

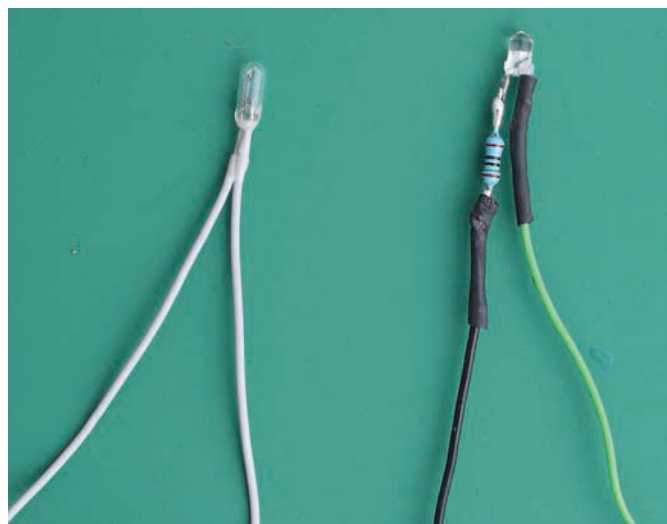
WHY USE LEDs AT ALL?

I think the best way to answer this is to make a list of the advantages LEDs have over filament bulbs. LEDs:

- Are available in the full spectrum of visible colours (and beyond)
- Are available in a wide range of sizes from 3 mm to 10 mm



A few of the different sizes, colours and shapes available



A 'pea' bulb and a 3 mm LED for comparison, note the use of heat-shrink tubing to insulate the legs of the LED

commonly but bigger and smaller are available

- Are available in a range of shapes including domed, cylindrical and square
- Are very efficient and so draw little current for their brightness (increasing battery life)
- Are robust and very difficult to physically damage (no glass to break)
- Are relatively cheap to buy
- Do not get hot when in use and so can be used safely in a confined space
- Have rigid wire legs making them self-supporting in remote locations
- Have a very long life if used within their specifications
- Can be switched on and off regularly without effecting their lifespan (can be used in flashing circuits)

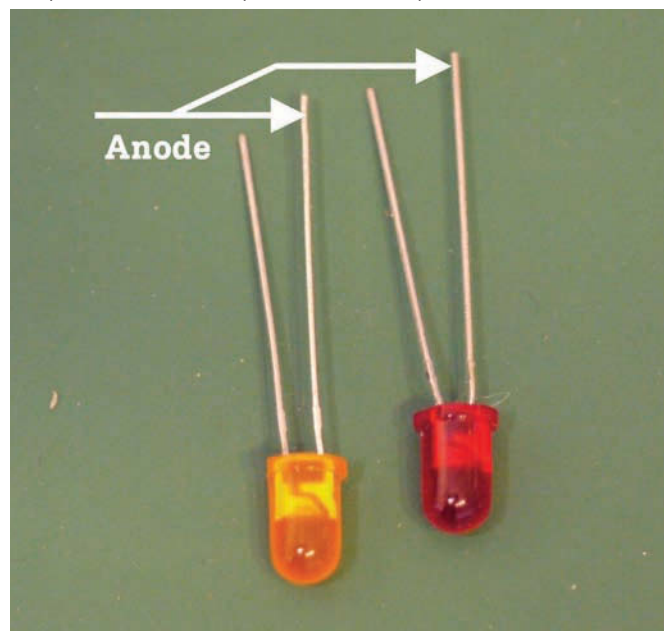
WHICH WAY AROUND DO I CONNECT THE LED?

The LED is a special diode and so only allows current to flow in one direction. So the correct leg or terminal must be connected to the positive and negative power supply. On diagrams these legs are named 'a' (anode) and 'k' (cathode) – the 'a' is ALWAYS connected to the positive side of the power supply while the 'k' is ALWAYS connected to the negative side. There are a few easy ways to determine which leg is which:

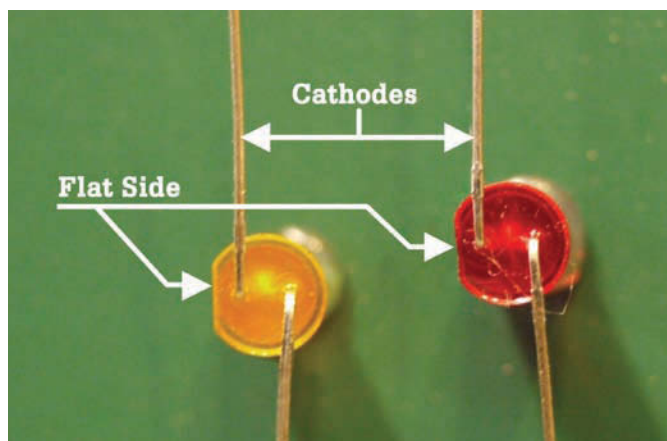
- New LEDs have the 'a' (anode) leg longer than the 'k' (cathode) leg
- Round LEDs usually have a slight flattening of the lower part of the bulb adjacent to the 'k' (cathode)
- Electronic specialist catalogues usually give diagrams identifying the cathode

WHAT VOLTAGES DO LEDS WORK ON?

Here I am going to make a comparison with ordinary tungsten filament bulbs. If the bulb is rated at 3 V then it should be powered by a 3 V power supply. Should you choose to connect it to a 6 V supply then it won't last long, burning out due to too much heat. LEDs are similar in that they have very specific working voltages. If connected directly to too high a voltage the diode breaks down and the LED stops working. Unlike the ordinary bulb the voltages for the LEDs are determined by the colour they emit. Generally speaking the lowest voltages are associated with red LEDs and then rise through the spectrum towards blue and violet. This is basically because the blue and violet photons are more energetic than the red photons (higher frequency) and so require more energy in the



The longest leg is the 'a' (anode) and goes toward the positive side of the power supply



The 'k' (cathode) is usually marked by a flat in the circumference of the LED

electrical current (voltage) to emit them. This relationship is not, however, clear to see in data sheets as very different methods of construction are used to produce the different colours in the same LED range.

So the voltage drop for any particular LED is predetermined by its construction and is unlikely to be of a value convenient for the power supply. We need to know this value before considering how to use the LED in a circuit. When you purchase your LEDs you should check the data sheet to see what the stated forward voltage is, or ask your supplier for this data. Again electronic supplier's catalogues, both in paper form and online, give this figure clearly. The usual range is between 2.0 V and 4.5 V and is usually identified as V_f and called working voltage or typical voltage.

While looking at the data for your LED it is also important to identify the forward current (I_f) value. This can be given in a number of ways but is always stated in mA (1/1000ths of an Ampere). A typical value would be between 20 mA and 50 mA.

To overcome some of these issues some manufacturers now supply LEDs of specific common voltages like 5 V, 6 V or 12 V. This is a good move but rather limits the choice of size, shape and colour. The most common LEDs are still the ones with the non-standard voltages dictated by their construction.

HOW DO I GET THE CORRECT VOLTAGE AND CURRENT FOR MY LED?

The answer is simple, by using a resistor. This is a very cheap device (costing pence), which reduces the voltage to the LED and determines the current flowing through it. The only thing to determine is the value of the resistor needed as there are a huge range available varying from a fraction of an Ohm (the unit of resistance) up to many millions of Ohms. This is where I need to do a bit of mathematics. I can already hear many of you shuddering at the thought of calculations so I shall make every effort to make it simple and foolproof.

Stage 1: You need to decide on the power supply voltage you are going to use for lighting on your boat. This may be a 7.2 V NiMH, 6 V lead acid, 4.8 V dry cell battery pack or a 12 V accumulator; any voltage above the voltage of your LED. To clarify this; for a red port LED with a working voltage of 2.2 V a 12 V accumulator would be fine but a single NiMH cell at 1.2 V would not be sufficient. For this article let us say we are using a 6 V sealed lead-acid battery.

Stage 2: Subtract the working voltage of your LED from the battery voltage. In this case I am using a red LED with a typical voltage (V_f) of 2.2 V and a forward current of 20 mA. So I subtract 2.2 V from my 6 V to give 3.8 V, which is the voltage I need to drop across the resistor. I will call this the Resistor Voltage Drop.

Stage 3: We now have all the data needed to calculate the resistor value using the well-known equation for Ohms Law. For this calculation the best form for the equation is as follows:

Resistance = Resistor Voltage Drop (V) ÷ forward current of the LED (A)

Or

Resistance = Resistor Voltage Drop in volts ÷ by the forward current of the LED in Amperes

In our case this is simply: Resistance = 3.8 V ÷ 20 mA

Care is needed here as we have a mixture of units and so the mA must be converted into Amperes by dividing by 1000 (see above). If this is confusing then trust me that the correct answer is obtained by multiplying the last equation by 1000 and ignoring the units:

Resistance = (3.8 ÷ 20) × 1000 (note: you must do the division first and then multiply by 1000)

Resistance = 190 Ohms

DATA BOX

Typical data sheets for a red and orange LED – the values selected for calculations are in RED.

LED 5 mm Red

Bulb Size: T-1 3/4 (5 mm)

LED Colour: Red

Luminous Intensity: 11cd

Viewing Angle: 20°

Forward Current I_f : 20 mA

Forward Voltage: 2.2 V

LED Mounting: Through Hole

Lens Shape: Round

Wavelength Typ: 625 nm

LED 5 mm Orange

LED Size: 5 mm/T-1 3/4

Colour: Orange

Typ Luminous Intensity: 4.3mcd

Viewing Angle: 68°

Forward Current: 30 mA

Lens Shape: Round

No. of Pins: 2

Current I_f Luminous Intensity: 10 mA

Max Current I_f : 30 mA

Max PIV: 5 V

Typ Voltage V_f : 2.1 V

Typ Wavelength: 635 nm

SO WHICH VALUE RESISTOR DO I SELECT?

If we attached a 190 Ohm resistor to one of the LED's legs and wired it to the 6 V battery the lamp would be at the correct brightness. Unfortunately resistors are only readily available at certain values, so we need to select the nearest from the list available. Again any electronic supply magazine or online website will give a list of the values in each resistor range. I usually use metal film resistors of 0.6 W, as these are small and capable of carrying the currents involved. In this range 180 Ohm, 200 Ohm and 220 Ohm resistors are available. Erring on the side of caution, use the 200 Ohm resistor for normal brightness and the 220 Ohm if the lamp needs dimming. You would need to look at more data if tempted to use the 180 Ohm resistor as this would over-brighten the LED and could exceed the maximum current/voltage values which would result in reduced life or destruction of the LED.

So have a go with these LEDs and see how straightforward their use is once you have conquered the bit of maths. Also remember, if the lamp is too bright for your model it can be dimmed simply by using a LARGER resistance. **MMI**

VINTAGE CHATTER! PART 8

VINTAGE INTERNAL COMBUSTION

AUTHOR: DAVID WIGGINS  GREAT BRITAIN

THE 'THREE HUNDRED THOUSAND' ENGINE

Last month I rather sketchily detailed some of the early electric propulsion choices that were available to the boat modeller of the pre and post war era here in Britain. It is only logical, therefore, that I should follow up and introduce readers to the rather obvious alternative available to the post war model power boat fan – ignoring steam and clockwork propulsion for now if I may – to detail vintage internal combustion engines.

I begin this month with the famous, and now very collectable, products of Messrs Electronic Developments Surrey Ltd aka E.D. The company's radio orientated name notwithstanding, founder Jack Ballard set about employing the then well-known tethered hydroplane racer Basil Miles to design a small range of miniature, compression ignition (CI), engines to sit alongside, and compliment, the firm's radio equipment line as an alternative profit generator. I'm sure he must have been fully aware that radio alone would not secure his firm's survival c1950 when the first sets were beyond the financial reach of most.

THE EARLY MINIATURE DIESEL IN BRITAIN

Miniature CI or (not entirely accurately) diesel engines had been designed on the continent during the 1930s, the first, by popular consensus, being the Dyno. Their advantages, compared to the heavy spark ignition two-strokes previously employed in powered model aircraft as well as in tethered race cars and in boats, were lighter weight and a total lack of spark coil, condenser and battery ignition gear all of which were regarded as both heavy and troublesome. Using a small diesel instead all one needed was a can of 'special' fuel containing equal parts paraffin, oil and ether and one was 'away'. I'm not at all sure in which year Mr Miles first began to design E.D.'s engines but it is certain that the well regarded rear disc induction/twin ball raced ('BB' in the parlance of the time), 2.46 cc Racer (pictured, and costing 96 shillings and 10 pence in water cooled form by 1961), is his work as were the smaller 1.49 cc Fury and larger 5 cc Miles Special.



Two versions of the Racer diesel designed by Basil Miles for E.D. – the air-cooled item is a late 1950s engine, the marine version being much later

E.D. ENGINES



BABY

46 cc. E.D. BABY 57/5
46 cc. MARINE E.D. BABY 73/2



PEP

3 cc. E.D. PEP 43/3
3 cc. MARINE E.D. PEP 59/-



BEE

1 cc. E.D. BEE 56/3
1 cc. MARINE E.D. BEE 70/10



HORNET

1.46 cc. HORNET 57/5
1.46 cc. MARINE HORNET 74/1



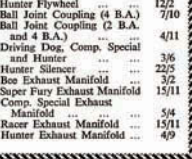
SUPER FURY

1.49 cc. SUPER FURY 79/6
1.49 cc. MARINE SUPER FURY 96/10



COMP. SPECIAL

2 cc. COMP. SPECIAL 66/1
2 cc. MARINE COMP. SPECIAL 85/2



HUNTER

3.46 cc. E.D. HUNTER 82/3
3.46 cc. MARINE HUNTER 108/7



RACER

2.46 cc. E.D. RACER 82/7
2.46 cc. MARINE E.D. RACER 96/10

E.D. MARINE ACCESSORIES

Baby Flywheel	7/7
Pep Flywheel	11/5
Bee and Hornet Flywheel and Universal Joint	12/2
Super Fury Flywheel	12/2
Comp. Special Flywheel	12/2
Comp. Special Flywheel Tapered Insert	3/2
Racer Flywheel	11/5
Hunter Flywheel	12/2
Ball Joint Coupling (4 B.A. and 4 B.A.)	7/10
Ball Joint Coupling (2 B.A. and 4 B.A.)	4/11
Driving Dog, Comp. Special and Hunter	3/6
Hunter Silencer	22/5
Box Exhaust Manifold	3/2
Super Fury Exhaust Manifold	15/11
Comp. Special Exhaust Manifold	5/4
Racer Exhaust Manifold	15/11
Hunter Exhaust Manifold	4/9

E.D. Engines	Katka's Kits
	Free Flight Control Line
Baby	Cross 120 Pep Super Cruiser Lucombe Silencer Sucker Mile Southerner Mile Sole
Pep	Halo Sucker Mile Pepster
Bee	Phantom Mile Joker
Hornet	Phantom Champion Gaulle Skyscraper 26
Super Fury	Phantom Champion Gaulle Skyscraper
Comp. Special	Phantom Champion Gaulle Skyscraper
Racer	Phantom Champion Gaulle Skyscraper
Hunter	Phantom Champion Gaulle Skyscraper

The table above and those on pages 49 and 50 indicate engines which are of a suitable engine capacity for K.K. kits. It is important to note, however, that when constructing the model it may be necessary to alter the spacing of the engine bearers to suit the engine being used.

The E.D. diesel range as it stood by 1961 a decade after starting out

AND LATER VERSIONS OF EARLY CLASSICS DISCUSSED

Both the Racer and Miles Special proved to have especially great longevity in boats. Many years after the latter was introduced it was entirely re-engineered by others as a specialist, large marine diesel, firstly renamed the Viking and then as the Sea Lion, but by then one could hardly recognise Mr Miles 5 cc Special as his work. Similar revisions were made to his Racer and to the good old 'three forty six' or Hunter and, as a result, all three lasted a very long time indeed on the model market. Speaking as a long time user of E.D. products, I prefer an early example any time.

The later engines had their good points (modern R/C throttles with good idling and easy to plumb exhausts among them), but they substituted cheaper metals for the brass used in Miles 1950s marine

engine, employing aluminium for the water jackets and manifolds, and steel for the flywheels. These were not good choices giving rise to erosion and collapse inside the water jackets, and rust on the flywheels when operated on salt or even brackish lakes. Aluminium water jackets in particular needed annual replacement if one ran on seawater, as I was obliged to do. Further down the line still nylon replaced metal on the carburettor bodies. These were very 'iffy' items indeed, with a propensity for loosening while the engine was running, as one could not reliably tighten the retaining grub screws onto 'slippery' soft nylon. One often recovered a 'dead' model to find the carb' lying in the bilges.

A complete redesign was also carried out on the, by then rather elderly, 3.46 cc Hunter; reborn as an all-new engine called the Sea Otter. This was one of very few genuinely 'marine' (as opposed to an adapted aero engine), diesels ever to be placed on the UK market. The Mk.I Otter, with its cast carburettor, integral forward drive coupling and solid brass flywheel, was a very well received British made product at a time (the 1960s). Demand for such engines was still quite high but, again, the makers soon cheapened manufacture rather to the detriment of what had been a very satisfactory, medium sized, easy to start, utility diesel. I used a Mk.I Otter for some years and was very happy with the engine which was given regular maintenance and an annual water jacket and gasket replacement. The later models were definitely nothing like as nicely made.

Ballard, Redlich and Miles were energetic in promoting both their radio gear and engines. An early PR stunt involved the 1951 crossing of the English Channel by a 4.5 cc diesel powered and multi-channel reed controlled boat. Easily Britain's leading R/C design engineer at that time, Mr George Honnest-Redlich, authored books and pamphlets on radio control which promoted the take up of radio control and improved E.D. company sales and standing by so doing. Without a shadow of a doubt George Redlich was the leading R/C designer in post war Britain especially, of the very first multi-channel, vibrating reed-relay sets.

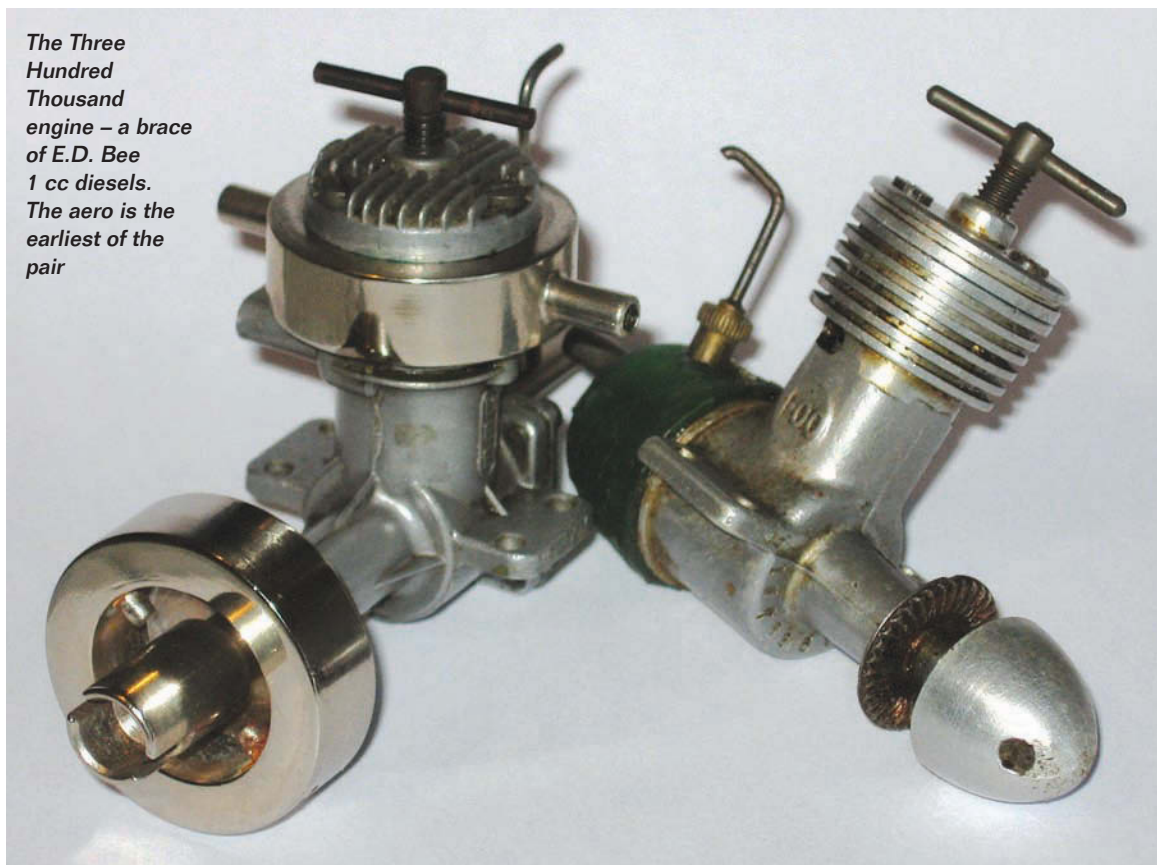
Immediately post-war, and in Britain alone, E.D. Ltd, though probably the biggest seller, did not have the model diesel market all to themselves, other early makers included Mills, AMCO, ETA, Elfin, Allbon and FROG, the latter in particular offering an extended range of engines of good reputation.

FINDING ONE SUITED TO A BOAT IN THE EARLY DAYS

One way in which the E.D. concern cemented its lead was in going out of its way to make its aero engines attractive to the marine customer – an almost unheard of level of consideration then. To this end they manufactured a nicely turned out line of brass water jackets, flywheels and couplings for their engines and, later, they offered silencers and/or exhaust manifold sets.

Most other makers simply couldn't be bothered, the post war marine market being so small and the aircraft market so relatively prosperous. Hence, if you'd (say), purchased a Mills (a nice if rather slow revving side-port induction engine famous for its easy starting) for a boat then you'd have needed to either shop around small independent makers in order to locate such essential items or make them for yourself. The Mills being such a popular brand c1950 there were such gadgets on

The Three Hundred Thousand engine – a brace of E.D. Bee 1 cc diesels. The aero is the earliest of the pair



BEFORE GOING BACK TO THE EARLY DAYS

Going back to E.D.'s earliest days their very first engine range had been simply named as Mk.I, Mk.II, Mk.III, Mk.IV etc. These engines, later revised, were given more appealing 'names' and made in very large numbers including the 1 cc Bee, 1.46 cc Hornet (to be featured later on in this series), 2 cc Penny Slot and Competition Special duo and the 3.46 cc Hunter. It was the Bee – then the company's smallest and best selling engine (in the days before the 0.46 cc Baby had been designed) that the company advertised as 'the three Hundred Thousand Engine' – having sold that number of this popular little diesel alone. Heaven only knows how many 1 cc engines E.D. eventually manufactured especially if one adds the later 1 cc Cadet/marine Seagull/duo as well.

the market but that was far from the case for all brands.

Later on, if/as this series progresses, I plan to look at some much bigger examples of the British model marine engine genre but, next month, I am moving back to early single channel radio control in order to feature a remarkable leading edge E.D. product from the year 1957. Until then, I'll say goodbye for now. **MMI**

SCALE SCENE

IAN REVISITS HIS ARTICLE ON GLUES AND GLUING

AUTHOR: IAN WILLIAMS  GREAT BRITAIN
electro-marine@talktalk.net

In Scale Scene in the October, November and December 2013 editions of MMI, I wrote a three-part article on choosing and using different glues for modelling. In these articles I mentioned a UK adhesive manufacturing firm called Starloc Adhesives. They have now (very generously) sent me a selection of their products and I am going to revisit my previous articles, but this time actually using Starloc's products instead of just suggesting their suitability. I thought it only fair to you that as I was recommending the products I should show you the results of some tests I made.

As Starloc sent me such a large selection and I don't intend this article to stretch over more than one month, I shall only select a few items to test and talk about.

As you can see from the main photo, not only was there a large quantity of adhesives, but quite a few different types as well. So as I remember talking about gluing disparate materials together, I decided to show you the four types shown in one of the photos. Namely the odourless cyano, the rubber reinforced cyano, the canopy bond and the super aliphatic adhesive. For this article I have ignored the different types of epoxy resin adhesives, as some of these will be tested over in the Livewires column next month. As you may be aware, I write Livewires as well as this one and next month will see the detailing of a Mono 1 class racing boat build. The various epoxies and different cyanos will be used

during the build, so if you are still interested in them have a read of the column next month!

Unfortunately, Starloc didn't send me the one product I really wanted to test, the Special Plastic Primer. This prepares the surface of 'unbondable' plastics such as PTFE, silicone etc. so that they can be glued. I have ordered some, so will test later and let you know the results in a future column.

STICKING ODD THINGS TOGETHER

Having decided to pick four adhesives and really put them through the ringer, I needed to devise some tests. What I came up with was not spectacular, but turned out to be good comparison tests and to my mind more than proved the effectiveness of these products.



The four adhesives used in the tests. L to R: Super Aliphatic, Odourless Cyano, Canopy Bond, Flexycyano



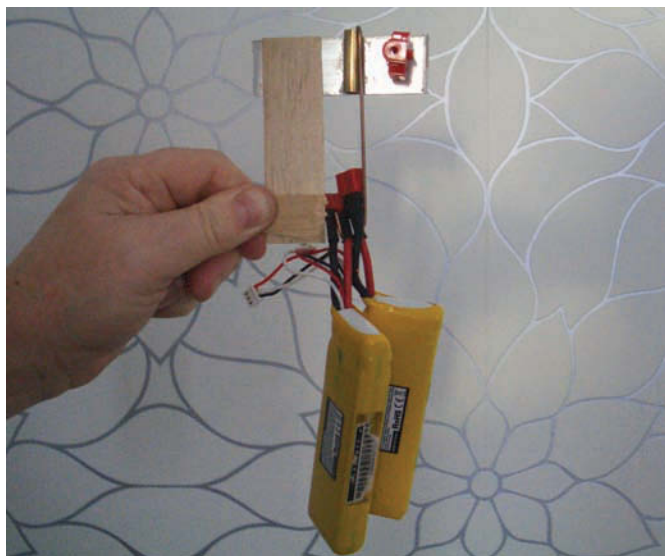
Large collection of adhesives kindly provided by Starloc Adhesives

RUBBERY SUPERGLUE

First off I decided to try the Flexycyano. This is a rubber-reinforced cyanoacrylate adhesive which is claimed to stick almost any surface. Starloc say:

"Super strength and impact resistant to give high impact bonds on almost any surface. Bonds all metals, plastics, wood, GRP, rubber, carbon fibre, glass, stone, leather etc."

That sounds great, but you and I know that many adhesives work well in ideal conditions. However, in my experience this isn't always the case in many modelling situations where conditions can be less than ideal.

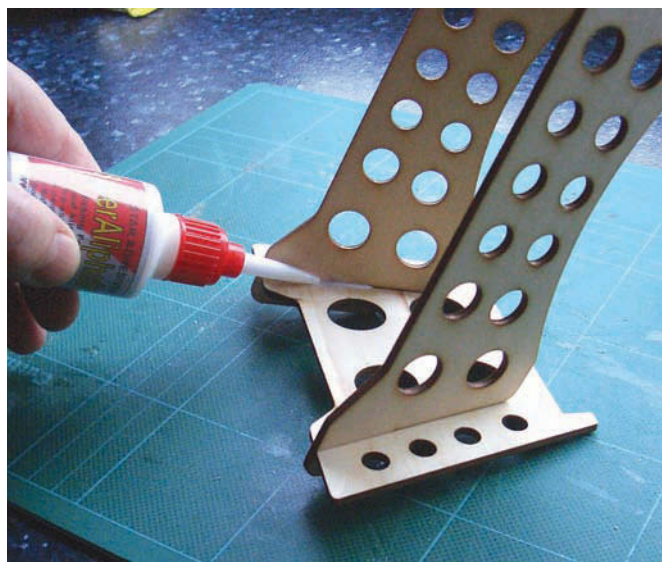


Test Strip 1: aluminium strip with plastic, metal and wood. That glue joint on the brass tube is supporting quite a weight! So is the balsa to balsa joint (see text)

So, I decided to produce one test piece using old scrap material I had lying around. The basis of the piece was a section of old aluminium flat bar. Although there was no loose dirt on it, it was none too clean having been in the scrap box for years. Using the Flexycyano, I glued a piece of unknown hard plastic material from an old child's toy, a piece of brass tube and a strip of balsa. To top things off I then glued a small scrap of balsa onto the balsa strip. Note that none of the balsa had been sealed in any way. I have to say that everything stuck perfectly and I think the photo tells you everything you need to know about the success of the test!



Test Strip 2: with clear plastic tube (see text)



Gluing pre-assembled wooden boat stand with Super Aliphatic adhesive

WOOD GLUE

I was curious about the Super Aliphatic adhesive as the instructions say to use to glue pre-assembled parts. Most wood glues I've used over the years have needed to be spread on at least one of the parts and often clamped together. This Super Aliphatic is a wicking formula, so will run like a thin cyano and soak into the parts being joined. Nor apparently is it limited to gluing wood as they say it will glue plastics, metal foils etc. Well I tried it on an old laser cut boat stand I'd had lying around for ages and it worked perfectly, as advertised. Nothing more to say there.

CLEAR VISION

I was keen to try the Canopy Bond as getting glazing for windows, portholes etc. to adhere without showing signs of the glue can be very problematic. Superglue works quickly, but will invariably 'fog' the clear plastic you use. Many modellers will use whatever clear sheet they can get their hands on. Often this will be from some kind of packaging and most times you don't even know what kind of plastic it is and as the Canopy Bond is designed mainly for vac-formed model aircraft canopies I wondered how it would cope with the average model boat material! For this reason I also wanted to test the Instatite Odourless Cyano which doesn't cause fogging and can be used to stick expanded polystyrene foam to wood and plastic without melting the foam like normal cyanos.

I chose a clear plastic tube of unknown type and some strips of clear styrene sheet. The strip stuck with the odourless cyano is nearest the black stopper, the strip glued with the canopy bond is next and lastly to top things off a strip of balsa! The Canopy Bond worked fine, but after two hours there was still a little white showing, as the adhesive had not fully cured. However, as I said the tube could have been formed from anything.

The Odourless Cyano was brilliant, the joint was clear, no fogging and it only took a few seconds to bond and it also did a perfect job on the balsa. So I think for model boat windows and portholes etc., where you haven't got a clue what kind of clear plastic you are using, the adhesive of choice would be the Odourless Cyano.

Well that's it for this month. See you all next time.

MMI

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PLASTIC KIT SCENE

ROBIN LOOKS AT SOME NEW PLASTIC KITS AND FIGURE SETS

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

This month I have some items from two companies I have not reviewed in this article before.

FLYHAWK MODEL

SMS Derfflinger 1916

Model No.: FH1300

Scale: 1/700

Length: 30.0 cm

Beam: 4.8 cm

Parts: 271 – plastic and etched

SMS Derfflinger's keel was laid in 1912 and was launched in July 1914, entering service with the German fleet in November of that year. She was one of the most powerful battlecruisers to see action during the First World War. Armed with eight 30.5 cm main guns mounted in four turrets, twelve 15 cm single secondary guns and four 8.8 cm anti-aircraft guns, her top speed was 25.8 knots – very fast for ships of this period.

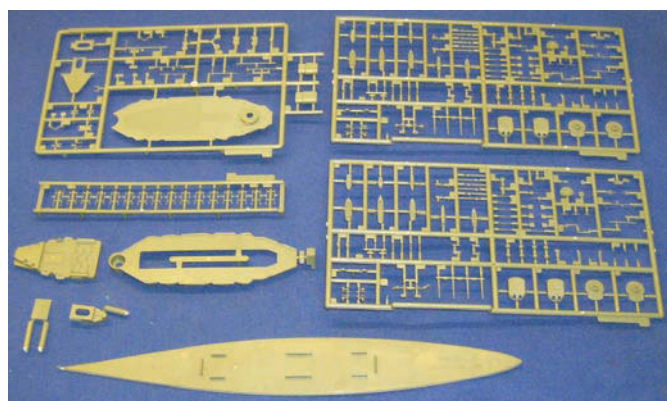
In November 1914 she was one of the warships that took part in the bombardment of the English coastal towns of Scarborough, Hartlepool and Whitby along the North Sea. In January 1915 Derfflinger was in action in the Dogger Bank engagement along with several other German warships under the command of Admiral Hipper. During this action Derfflinger was hit, but still managed to score hits on HMS Lion, this put the British fleet in disarray and



Flyhawk SMS Derfflinger 1916

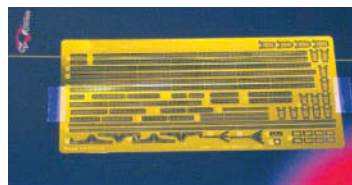


All parts come well packed



Some of the many well-detailed parts

the German fleet escaped back to their home base. 31st May saw her in action during the Battle of Jutland, a battle in which several British capital warships were sunk partly from salvos fired from the Derfflinger. She was also hit herself by over twenty larger calibre shells which caused flooding, but her design and efforts by her crew saved the ship and she managed to return home with the rest of the German fleet. When the War ended she was



The etched fret is included with the kit



Decals and metal weight



The well produced painting guide

with the German fleet that surrendered and sent to Scapa Flow, but in June 1919 together with most of the interned German warships she was scuttled and sunk by her own crew. Flyhawk models are produced in China and this is the first time I have had the opportunity to review a model from them. Most of the products that they produce are aftermarket etched accessory sets to add extra detail to models from other companies, but they have now started producing complete model kits themselves. The model of the Derfflinger is well designed and a very detailed waterline model. It is injection moulded in grey plastic with photo-etched brass fittings to enhance the detail. It also comes with a metal weight to attach to the inside of the hull base to add that extra feel to the model in this scale; this practice has been used by several other makers of small 1/700 scale warships for many years. A lovely detailed set of decals also comes with

the kit, the instructions are first class and easy to follow and come complete with full colour painting and marking guide. All parts come well packed, each sprue is packed in its own plastic wrapper and then all sprues are packed in a large plastic sealable bag so there is no chance of the parts being damaged in transit. The box itself has a great picture of the Derfflinger in action and at full speed, on the reverse of the box are details and the history of the warship.

It is great to see a release of a plastic warship of this period.

Normally they are only found cast in resin, which does affect the price of these types of kits. I hope that there will be more kits, like this, from Flyhawk in the future; if I do hear of any more I will give details in the PKS article when I have them.

Many thanks to Freetime Hobbies for supplying the review model, further details can be found by visiting: www.flyhawkmodel.com and www.freetimehobbies.com

NORTH STAR MODELS

This company is based in Russia, and is yet another company I have not seen before. They also produce aftermarket upgrades for model warships and for military vehicles, aircraft and figures.



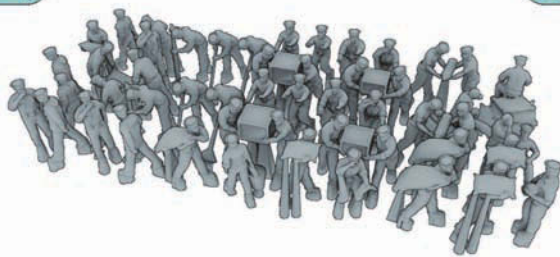
NSA350507
German WW2 72 figures in action set 1

North Star German Set 1 (courtesy North Star)



NSA350508
US NAVY 77 figures in working positions set 2

North Star US Navy Set 2 (courtesy North Star)



NSA350510
US NAVY 52 figures in working positions set 3

North Star US Navy Set 3 (courtesy North Star)

My attention was drawn to this company when I saw packs of crew figures on their website.

German Kriegsmarine WW2 Figures in Action (Set 1)

Model No.: NSA-350507

Scale: 1/350

Parts: 72 figures

US Navy WW2 Figures in Working Positions (Set 2)

Model No.: NSA-350508

Scale: 1/350

Parts: 77 figures

US Navy WW2 Figures in Working Positions (Set 3)

Model No.: NSA-350510

Scale: 1/350

Parts: 52 figures

German Kriegsmarine WW2 Figures in Action (Set 3)

Model No.: NSA-350511

Scale: 1/350

Parts: 52 figures

I have only given details of these four sets but there are more sets listed on their website. These crew figures are quite incredibly well detailed for their extremely minute size. Each figure is approximately 6 mm in height; they are cast in resin in one block of between 52 and 77 figures. The working figures are in various poses such as carrying boxes, shells and sacks, even a sailor sat resting on a pile of sacks! The action set has officer figures with peaked caps some represented with binoculars, all the figures are full bodied not semi flat as some figures of this scale are from other makers. The sets are classed as WW2 but in this scale they could be used for other periods. They need to be carefully removed from the base ensuring that the feet are not cut off by mistake, painting will need a keen eye or better still a good magnifying glass and a small brush with a steady hand. I love adding crew figures to my models as this helps to give the ship character instead of looking at an empty, lifeless deck.

More information and details of all sets can be found by visiting the North Star website at: www.northstarmodels.com

ZVEZDA

Spanish Ship San Martin

Model No.: 6502

Scale: 1/350

Length: 16 cm



ФЛАГМАН НЕПОБЕДИМОЙ АРМАДЫ
Галеон «Сан-Мартин»

6502



«San Martin»
FLAGSHIP OF THE ARMADA INVINCIBLE

Zvezda 1/350 scale Spanish flagship San Martin (courtesy Zvezda)

The San Martin was the flagship of the Spanish Armada in 1588 for the invasion of England.

The model is small but detailed and can be assembled without the use of glue, as all parts will just clip together. All parts come on five sprues in three different colours so there would be no need for painting although this would add to its appearance. Some well-detailed, coloured decals are included for the sails. Also, the model can be built as either full hull or waterline. This model follows on from the model of HMS Revenge (model No. 6500) that was released at the end of 2013. These models can be used in conjunction with a game that Zvezda intends to release sometime this year; when I have any details of this game it will be mentioned in one of my PKS articles.

More information and details of the complete Zvezda range of kits can be found by visiting: www.zvezda.org.ru **MMI**

MEETING POINT

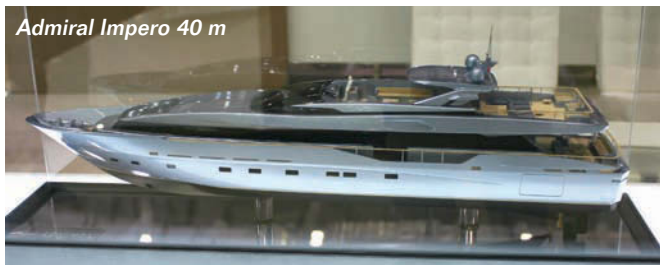
REPORTS ON EVENTS THAT HAVE
RECENTLY TAKEN PLACE

LONDON INTERNATIONAL BOAT SHOW, 4TH TO 12TH JANUARY 2014, BY PATRICK BONIFACE

The London International Boat Show 2014 was held at London's Excel Centre from Saturday 4th January to Sunday 12th January. Hidden amongst the gleaming yachts, motor cruisers, dinghies and narrow boats were an assortment of model boats. Usually found under glass cabinets on the stands of the major boat building companies many of these models were precision crafted and were built to scale representing the full scale craft alongside which many of them were positioned.

Unfortunately this year's London International Boat Show, unlike that of last year, did not have model boats on display on the large indoor water sports pool. But, there was still plenty to interest model boat enthusiasts at the show surrounded, as they were by the brightest, shiniest and, occasionally, the most expensive of multi-million pound watercraft in the world today.

Admiral Impero 40 m



Pershing 92



Pearl 65



Beautiful boat on the Pershing stand

LONDON MODEL ENGINEERING EXHIBITION, 17TH TO 19TH JANUARY 2014, BY PATRICK BONIFACE

Held over the weekend of 17th-19th January, the London Model Engineering Exhibition celebrated its 18th anniversary in style. The exhibition was, once again, staged at the historic Alexandra Palace in North London and the setting is suitably majestic for such a large and important model engineering exhibition.

This event has, over the last two decades, become regarded as one of the United Kingdom's most prestigious and well-attended events drawing in thousands of modellers of all ages from across London and the southeast of England. The grand setting of Alexandra Palace provided plenty of space for model planes and helicopters, trains, tanks and cars as well as, of course, model boats. Unlike other shows of this stature the London Model Engineering Exhibition does not, sadly, have any models on water, but this is a small distraction from an otherwise wonderful show.



General shot of the exhibition



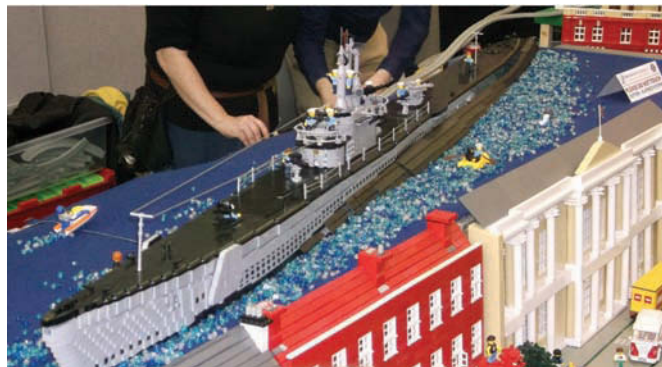
Bill Cocking's Fairmile C Q328



Colin Vass and his magnificent 1/72 scale HMS Warspite built over 16 years



Arthur Ridley of the Hanwell and District Model Society presented Sheila, a Thames Steam Yacht



Gary Davis built this German U-Boat out of LEGO



General shot of the exhibition



Alec Bliss with two of his models on display, the Clyde Pilot boat Cumbræ and the trawler Antjeii



Mark Wiltshire with his model of the S class submarine HMS Snapper

Amongst the clubs and organisations represented at the London Model Engineering Exhibition this year were Victoria Model Steam Boat Club, The Surface Warship Association, Moorhen Model Boat Club, Model Power Boat Association, Luton and District Model Boat Club, High Wycombe Model Engineering Club Ltd, Eastleigh and District Model Boat Club, Blackheath Model Power Boat Club and the Association of Model Barge Owners. Each had a rich and varied display of stunning model boats, but the one vessel that certainly drew the most attention was the magnificent 1/72 scale model of the Royal Navy battleship HMS Warspite modelled, over the last 16 years, by Colin Vass. On a much smaller scale another nice model was shown by Hilary Breeze. His model of Fairmile C Type MGB number 317 had a very personal touch as the real life Royal Navy vessel – between 1943 and 1944 – was commanded by Hilary's father, Neville Breeze.



USS Lassen



The very busy Traplet stand



Peter Revill of the Surface Warship Association alongside his kit of the RN tug Envoy



Philip Bellamy with his model of a Fairmile D



The winners of the Society Shield, Moorhen Model Boat Club

51 clubs, societies and displays attended the exhibition and competed to win the prestigious Society Shield, which is voted for by the clubs and societies themselves. The winner was Moorhen Model Boat Club followed by Tamiya Truckin in second place and St Albans & District Model Engineering Society third place.

Every year this event tries to reach out and expand its audience and this year proved to be no exception with lots of demonstrations and ways to get involved. It is particularly encouraging the number of children who were present at the show and let's hope that their enthusiasm continues to grow for modelling in general and model boats in particular.



Hilary Breeze holding a model of Fairmile C Type MGB number 317. The real life boat was between 1943-1944 commanded by Hilary's father, Neville Breeze



Chris Deith presenting the shield to Allan Storrar, Chairman of Moorhen Model Boat Club

FRED'S BIG TOEPHY REPORT, 7TH FEBRUARY 2014, BY ROGER STOLLEY

Abbey Meads, Guildford Model Yacht Club's sailing water, looked magnificent for this event as the high water level allowed boats to be launched from the third step down from the top, without the need for a launching platform.

It was a really good sailing day and race officers Martin Crysell and Hugh McAdoo made a superb job of running the event. They managed to fit in 16 races over a simple 50 metre windward/leeward course with a windward spreader and leeward gate. The wind was variable in direction for the most of the day but the speed was relatively steady at 8 or 9 miles an hour with occasional holes and gusts.

At lunchtime those involved in running the Footy Gold Cup on 26th-27th July at Two Islands RYC, Milton Keynes, had an informal meeting to review progress since the inaugural meeting. This international event attracts the best Footy sailors from all over Europe and so Sail Footy UK is hoping there will be a big UK entry.

The sailing course was reset after lunch by Hugh McAdoo due to the change in the wind, having extended the length and only a single lap. The final scores revealed a tie for first place with Rob Vice taking Fred's Big Toephy on count back (having just one more win than Roger Stollery). Sail Footy UK have also introduced a prize to encourage the less experienced sailors. This is open to anyone who has not been in the top three positions for the last two years, this time the prize was won by Alan Viney. Martin Crysell and Hugh McAdoo received thanks from everyone attending for running another good event.

The rubber dingy rescue boat went out on a number of occasions to help sort out technical problems, mainly through boats being over canvased. All of these problems were solved at the pond side and all competitors sailed in every race. In the gusty conditions the Ice design with its great power is able to absorb some of the impact of these gusts, whereas the narrower and longer Slim design needs to change to a smaller rig earlier and then suffers in the light conditions. The Slim boats are beautifully moulded in carbon fibre by Peter Jackson and they were very fast on occasion. These two designs are powered by swing rigs, which dominated the racing. Scott Wallis with his narrow Randger design, measured on the 'double diagonal' in the Footy box, was the first boat using a balanced Una rig.

Results: 1st Rob Vice, Guildford, Ice, 22; 2nd Roger Stollery, Guildford, Ice, 22; 3rd Peter Jackson, Abington Park, Slim, 43.



Rob Vice receiving his prize from Martin Crysell



Rob Vice's boat 41 and Roger Stollery's boat 17

The fleet manoeuvring before the start



LEFT: Peter Jackson's Slim boat 30 setting out for the start

ROYAL NAVY FLEET AIR ARM MUSEUM MODEL SHOW, 15TH FEBRUARY 2014, BY BARRIE STEVENS

Despite a very wet Somerset it had very little affect on this show, with the usual large number of visitors, traders and exhibitors attending. The Fleet Air Arm Museum is an ideal location for this model show with many exhibitors and traders located under the wings of full size vintage aircraft. The majority of the exhibitors display small static models and dioramas but there was an active display of impressive operational R/C model aircraft outside on the runway when the weather permitted for around 90 minutes by the BMFA (British Model Flying Association).

Maritime clubs were well represented from many parts of the UK including, Edinburgh Model Club, Cardiff Marine Modellers, North Devon Marine Modellers Association, Portsmouth & District MBC, Portsmouth MB Display Team, Surface Warship Association, Shepton Mallet Drifters MBC, Cwmbran Modelling Society and Weymouth & Portland MBC. It was very encouraging to see the efforts made by many of the marine club exhibitors with their displays like the Portsmouth Model Boat Display Team where they used the under table area to display an underwater scene of a U-Boat under attack.

The newest formed club in the southwest was the North Devon

Marine Modellers Association and this show was the first of their public displays. The club is based near Braunton in north Devon and they have a private lake they can operate on but the number of members is restricted. Some of their members utilise modern technology for controlling models using an iPad or iPhone. This could be the start of the future control of models with the advantages of utilising onboard cameras and microphones. We have seen this technology used on model aircraft but not on maritime models. Hopefully in the future we may be able to bring readers further details of this technology in MMI.

Also on the NMNNA stand they were demonstrating 3-D printing which captured the attention of many exhibitors and visitors, this could well be the future for prototype model making?

One aspect of this show which always sees a large following is the Airfix Family Workshops, where a room is allocated for the building of plastic kits with advice and help on hand for the newcomer to the world of plastic kit construction. With a large selection of plastic kit traders exhibiting their wares a tussle was always around them with modellers looking for any vintage and different kits available.

An excellent show and with the museum having new displays like the Battle of The Atlantic and WWI commemorations it is a good day out for visitors and for exhibitors. **MMI**



Cardiff Marine Modellers' display under the wing of Concorde, the club was awarded the Best Club Stand



A unique low draught flat bottom Buoy Layer on the Cwmbran Marine Modellers stand



One of the excellent maritime dioramas on display, this one of a RAF Air Sea Rescue by Tony Cooke who collected the Best Airfix award



Regular visitors to the show from the Edinburgh Model Club, David Jack and Douglas Salmon



The latest club to be formed in the southwest making their first appearance on the show circuit North Devon Marine Modellers Association. L to R: Roger Moore, Simon Orrell, Harry Thorne, Tony Jewell, Rodney Houlford and Matt Beaman



Weymouth & Portland MBC members with some of their fine models



The rain eased up in the afternoon for the BMFA to start their model flying display



Some of the 'orange' crew manning the Portsmouth Model Boat Display Team stand



The Surface Warship Association's large display in the Swordfish Centre



A wide selection of members' models on the Shepton Mallet Drifters MBC stand, L to R: Verd Redwood, Pam Rodda, Maurice Edwards, Ivan Rodda, Steve Jackson, Robin Trott, Mike Perkins and Mrs S



A stunning model by Mark Cable of IPJN Japanese Battleship Mikasa 1905 which was awarded a Bronze in the Ships and Waterborne Vessels class

Alison M, a 1/12th scale model of a Bristol Channel Pilot Cutter

AUTHOR: JOHN DAVIES

ALISON M – PART 1

IN THIS FIRST OF A THREE PART ARTICLE ON BUILDING A 1/12TH SCALE MODEL OF AN IMAGINARY BRISTOL CHANNEL PILOT CUTTER, JOHN EXPLAINS HIS PLANNING, TAKES US THROUGH SOME CALCULATIONS AND THEN DESCRIBES HOW HE CONSTRUCTED A HULL WITH SUFFICIENT BALLAST IN THE KEEL

THE BEGINNING OF THE PROJECT

"Fools build and wise men buy"? Readers may remember a previous article about a lovely big sailing model of a Bristol Channel Pilot Cutter called Agnes. Waverley Models built her as their prototype. By extreme good fortune, she came into my possession in full working order, without any of the hard work, problem solving and eyestrain that inevitably go with building a scale model (MMI, March 2011).

On the basis of a couple of seasons with Agnes, I went on to build one myself. A very nice gentleman saw Agnes, fell in love with her, (she has that effect), and wanted one like her. I decided it would be an interesting project. The brief was not to produce an accurate scale model of a specific pilot cutter, but rather a convincing

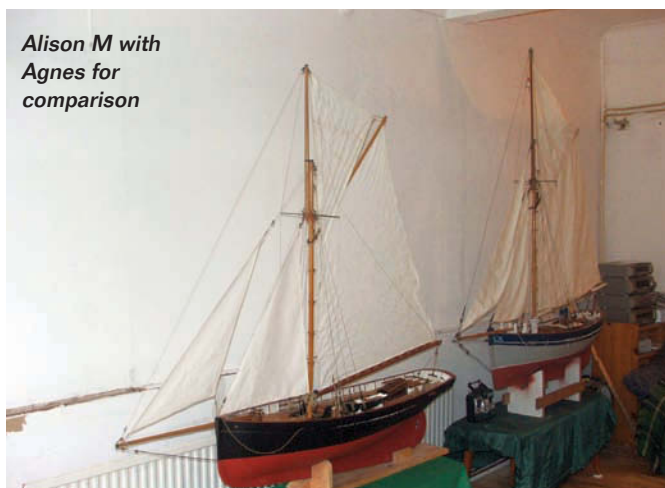
generic model, sailing under the name Alison M, chosen by her owner. Hopefully, this model would incorporate all the knowledge of gaff rig, both full sized and miniature, that has come my way. Many years ago, a very beautiful traditional gaff cutter was my home, before life forced a change to shore-bound civilisation with everyone else. Many people know the gaff rig better than me, but I do know a fair bit.

Rather than a blow-by-blow account of construction, these notes use this model as a case study to illustrate various points; how to choose a prototype for a scale sailing model, how to plan the project, how to carry it out (and in one notable particular, how not), a little history of the sailing pilot service in the Bristol Channel, and a short tutorial on the gaff rig.

THE PROBLEMS OF SCALE

Why do so many scale sailing models depict Bristol Channel Pilot Cutters? To answer this, and more importantly, to do the basic planning for the model, we have to go back to fundamentals. All scale sailing models have built-in limitations. The most important is the cube-square law. Imagine we are working to a scale of 1/12th, to which many sailing models are built. The sail area is 1/144th the size of that on the full size boat as both height and breadth are divided by twelve. Since the centre of effort is 1/12th of the height of the prototype's above the waterline, we divide by twelve again to get the capsizing moment, which is therefore 1/1728 of the full sized vessel's. If the capsizing moment generated by the forces in the rig were not balanced by the righting moment of the lead in the keel, the boat would fall over as soon as the sails filled with wind. The ballast helps to hold the boat the right way up.

Unfortunately, the weight of ballast is 1/1728 of the original, as it is a three-dimensional object, not a two-dimensional sail-plan. Height



Alison M with Agnes for comparison

and breadth and length are all divided by twelve. Now the 'moment arm' this weight exerts to right the boat is the vertical distance between the centre of gravity of the keel, which is quite low down, and the centre of gravity of the whole boat, which is somewhere in the middle of the hull. That, too, will be 1/12th of the original's. So the effective righting force is 1/20736 of the prototype's, or exactly 1/12th of the capsizing moment. Clearly, our model is going to have stability problems in anything over a light breeze.

Of course, not all the stability of a boat comes from ballast. Much comes from hull form. A broad-beamed hull with nice firm bilge sections will be more stable than a narrow hull of the same displacement, since as the boat heels, and the bilges on the lee side are forced downwards, they displace water, which tries to force them back up again, thereby righting the boat. If the lines are fair, a broad-beamed hull need not be sluggish. However, the same considerations apply to a model's stability. Because the volume of the immersed bilge is, like the ballast, a three-dimensional object, and because the moment arm of its righting effect is also 1/12th of the original boat's, its righting force is also 1/20376 of the original.

SELECTING THE RIGHT BOAT TO MODEL

One might ask how a scale sailing model can be made to work at all. Obviously, while you can add some extra ballast, (most scale sailing models do) you can't add too much, or the model will float too far below its proper waterline. However, you can increase the moment arm the ballast exerts, by fitting a deep false keel. If you use a carbon fibre fin from a modern Marblehead, and attach your ballast to the bottom of it in the form of a streamlined bulb, you can give the ballast several times the moment arm. However, it is a cheat. Also, you need quite a deep pond. If there is any weed, such a keel can make a really good anchor mid-pond, leading to impromptu plodding to recover the model. Is it possible to build a scale sailing model that works, on its own merits, without such devices? Here is how you do it.

First, choose your prototype carefully. Beautiful racing yachts were unstable full sized, before the cube-square law even comes into effect. A working boat, designed and rigged to be out in all weathers, is a better prospect. Next, choose a reasonably small working boat, so you can build it to a large scale. The cube-square law becomes increasingly damaging the smaller the scale. 1/12th is feasible for modelling a 50 foot boat. But a 70 foot boat will come out six feet long, and over 100 lb.

Here two other constraints come into play. The maximum length of boat which will fit across the back seat of an average family car is an inch or two over four feet. The maximum weight one reasonably fit person of average physique can carry from the car park to the water, and launch unassisted, is about forty pounds. By a fortunate coincidence, most 4 foot models with a full, traditional, hull form come out around that weight. The bigger they are, the better they go, as long as you can handle them ashore.

So we're talking about a model of a traditional craft 45 to 50 feet long. That narrows the field. It is better to choose a traditional boat with a nice beam and firm bilges, for stability, with a deep draught to carry ballast as low as possible. Essex Smacks and Morecambe Bay Prawners are lovely, but both were built for shallow water, lacking the draught we need. The less radical style of cruising yachts makes nice models. A model Folkboat should sail well. Among traditional working craft, a Falmouth Quay Punt would make a good sailing model, because their hull form was very deep. Then there are the Bristol Channel Pilot Cutters, also known in the pilot service as skiffs, or occasionally (especially in Cardiff) as yawls; confusingly, because they were not yawl-rigged. They were beautiful, deep draughted, sea-kindly and mostly around fifty feet long; ideal. This is why so many scale sailing models are based on them.

Unfortunately, many models seem to incorporate various built-in mistakes, damaging their sailing qualities. In extreme cases, it is hard to see how the model sails at all. This one was going to be as right as I could make it. As it turned out, I managed to build in one notable error, but the result wasn't a disaster, merely an annoying

kink in the modeller's endless learning curve. One day I'll build one and know it's not just a decent job, but perfect. One day. Maybe.

ADJUSTING THE HULL

A Waverley Models Hilda hull was chosen. It is big, with lots of room inside for gear. It was obtained from Orion Mouldings, who do Waverley's moulding. At 49 inches long, and thirteen and a half inches beam, it is right up against the practical limit. The quality of the moulding was superb; delivery was prompt, service helpful and friendly. Although the model was based on Hilda, the brief was to produce a generic model of a pilot cutter. This enabled me to take a few small liberties in the interests of producing a good sailing model.

The first thing is to improve the ballast ratio over the original. This is the proportion of the total weight of the boat devoted to ballast. Most traditional working boats used iron or even cement ballast, because it was cheap. In a model, we can use lead. Lead weighs 11.34 grams per cc, whereas iron weighs 7.2 grams per cc, so that is a gain of 36%. If the ballast is heavier, won't that make her float lower? No, because we save weight elsewhere. The real boats had heavy wooden hulls with substantial internal furniture and fittings. We use lightweight GRP shells.

Next, get the ballast as low as possible. Some scale sailing models have bits of lead flashing chopped up and sealed into the hull with resin, coming well up inside the hull. This is a big mistake. If the ballast is to be as useful as possible, it must be as low as possible. There are various methods. One can fill the keel and lower bilges with lead shot, and then encapsulate it with resin. This works pretty well, but maybe something better was possible. If you melt a pile of lead shot, it is surprising how it shrinks. The denser that ballast block is, the lower it will place the weight.



With bare hull and guide coat too



Fitting the keel

One technique I heard of is to immerse the hull in cold water, and pour molten lead directly into the bilges. You hope the water conducts the heat away before the lead melts through the GRP moulding, hits the water, and explodes in a catastrophe of steam and globs of flying molten lead. You certainly hope your moulding has no thin or weak spots. You hope you do not choke on the fumes as various polymers in the resin cook off. You also hope you are not left with a hull with much of the strength fried out of it, even if no actual holes appear. This looks like a very chancy procedure, a very bad idea indeed. Do not try this!

MAKING THE KEELSON

Full sized practice offers the best solution as very often happens. Real pilot cutters used internal ballast, but a traditional yacht built along working boat lines typically has a section of the keelson consisting of a large lump of cast iron. In the model, the section of the keelson that would be iron was cut out, using a slitting disc in a miniature drill. The resulting gap in the bottom of the hull was filled with a strong marine ply keelson. This was glassed in, using woven rovings rather than chopped mat. Extra lengths of woven rovings were glassed in athwartships, distributing the load of the keel sideways, much like knees in a full sized vessel. This left room for a lead bar.

The section cut out was thirty inches long, an inch and a quarter deep, with a volume of 400 cc. This would give a weight of ten pounds – not nearly enough. But how do I approximate the correct weight, and therefore size, for the ballast? There is an easy and accurate method. Measure the waterline from the drawing, mark it on the hull and float it in the bath. Add ballast (this can be anything at all, even gravel) until she comes down to her marks. Remove it from the hull. Weigh it. Subtract an allowance of maybe seven or eight pounds for timber, fittings and rig. Electrics and control gear come to another three pounds. Allow a further three or four pounds (about 10% of the weight of the completed model) for contingencies, and internal ballast to adjust the final trim. What is left is the weight of lead you need to cast for the keel.

Instead I attempted to calculate an approximation based on the model of Agnes, a vessel of similar character and hull form, adjusting for the difference in size. This was a mistake, which hopefully you can learn from and not repeat. Possibly the present-day Agnes (a full sized replica of the original pilot cutter of 1841), sits rather deeper, and has rather less freeboard, than most pilot cutters of the early 20th century. This may be because the design evolved, or it may be because today's Agnes carries the weight of a full yacht's interior, or this particular model is a little deeply ballasted. Whatever the reason, this was the wrong method to calculate ballast for Alison M. It produced a misleading approximation. It was good there was a decent allowance for contingencies, but on the other hand, the more boat there is below the waterline, the better they sail. Good sailing qualities were very much a priority.

In theory, the 24 lb for ballast that my approximation suggested implied a volume of lead of 962 cc, or over twice the volume of the section cut out from the keel. The result was a keel of more than scale depth, but it was considered worth it. With the keel section of the GRP moulding an inch and a quarter deep, this left a step at each end of the lead, to be faired with timber. This is not obtrusive in the context of a 4 foot model. Most importantly, it gets lots of weight low down, where it does most good. It also provides an extra 25 or so square inches of lateral area, useful for providing a grip on the water, and preventing her from sliding off to leeward when on a beat.

CASTING THE LEAD

Construction began with casting the lead. This is safe enough, as long as great care is taken to ensure that everything involved is dry. As already pointed out (but it will bear repeating!) hot lead plus water equals explosively expanding steam plus flying lead droplets; not a good idea! I have never had an accident, but still wear heavy clothes, gloves, a thick scarf around the face, protective goggles,

etc. Better safe than sorry.

A mould was made from timber faced with three layers of silver foil, screwed together, and with all joints caulked with silicone. They developed it for the space programme, racing engine builders sometimes use it to gasket exhaust manifolds, and it withstood the heat from molten lead very well. There were no leaks when the lead was poured. One end of the mould was blocked up a little to put a slightly greater drag on the keel than the basic moulding already has. It looks good, reduces the height of the step to be faired in at the bows, and improves her sailing qualities. French pilot cutters, acknowledged to have superior sailing qualities, often had a steeper drag on the keel than their British counterparts.

The resulting lead bar was cleaned up and shaped. The trim was tested in the bath. As matters were later to show, I should have made a more careful check of how deep she was floating. However, in the water, she looked okay 'by eye', she seemed to be floating high enough, so I didn't measure, as I should have done.

SECURING THE LEAD TO THE HULL

The lead was secured with seven long wood screws, faired in with filler, and wooden fairing pieces added fore and aft. The one at the bow was tiny. The heel piece aft was more substantial. It contained the lower support and pivot for the rudder. This had been made from a small block of good-quality hardwood, sliced to thickness on the bandsaw, cut to shape and sanded to profile. A length of brass tube fitted into a groove routed along its leading edge, and two brass pintles were through-bolted, ensuring the whole thing would stay in one piece. The brass tube is supported in two short lengths of a slightly larger diameter, one set into the heel piece and one passing through the hull. This produced a rudder that swung freely but without slop.



A general view clearly showing the keel

Once everything was faired in, the filler was thoroughly rubbed down and the keel given a quick guide coat of black paint. The purpose of a guide coat is just exactly that; to guide you, to show up any imperfections that need further filling and rubbing down. Not much of the guide coat will remain on the model. Most of it is rubbed away.

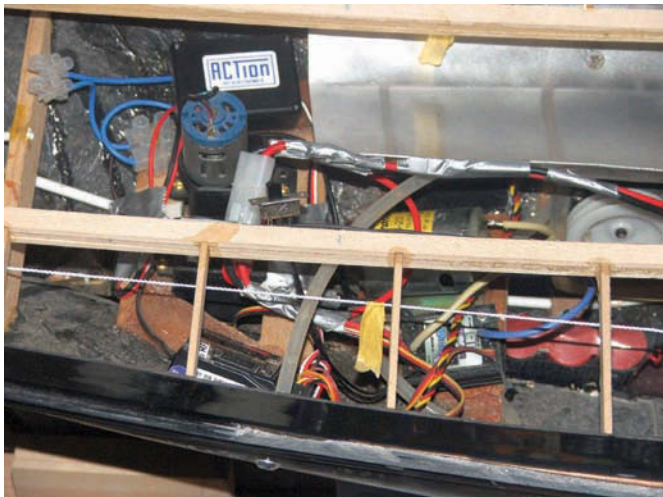
Comparison with an unmodified moulding showed that although the lines had been slightly altered in the area of the keel, this was not obtrusive. It was worth it, for the good sailing qualities it promised. The modified keel looked reminiscent of Marguerite, well-known as one of the best-sailing pilot cutters.

COMPLETING THE HULL

Quite a lot of gubbins has to be fitted into the hull. Most came from The Model Dockyard. Control is by a six-channel 40 MHz Hitec Laser outfit, a bit dated now everyone has gone 2.4 GHz, but still very satisfactory. There's an Electronize 543-23 motor, a short prop shaft with top-up tube (Deans Marine) and double coupling (Huco) driving a 40 mm two-bladed prop (Raboesch) as a 'get me home' if the wind falls calm, a speed controller (Mtroniks), 3700 mAh NiMH battery pack, rudder servo, bilge pump (Robbe), switcher for the pump and for lights (AcTion Electronics), and two sheet winches (HiTec).

One of the winches sits just aft of the mast and drives an endless loop which runs to the stern and back on each side, just under the deck. The headsail sheets are attached to this loop, paying out on one side and hauling in on the other. A loose-footed headsail, i.e. without a boom, should never be sheeted amidships. The clew is dragged into the centreline, the leech hooks in, it doesn't drive the boat and it backwinds the mainsail. The boat does not sail nearly as well as it ought. Scale sailing models can be marginal in performance. It seems foolish to give any away.

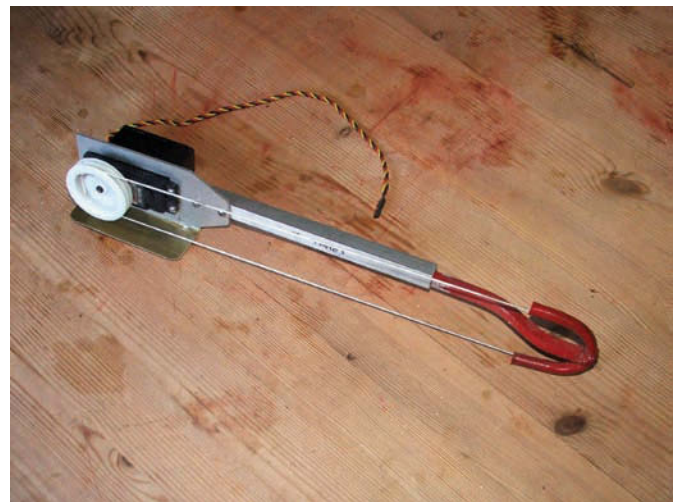
The mainsheet is a simple in-out arrangement, actuated by one of Mike Mayhew's marvellous modular mainsheet machines, installed low down in the hull. Mike supplies these from Waverley Models. They are excellent devices, combining a sheet winch, a pre-rove, pre-tensioned endless loop and a good lead for the sheet, all in one package. The sheet winch casing was sprayed with three coats of sealing varnish, so that if the boat ever ships water and the winch is drowned, hopefully it will keep working long enough to sail the model ashore. It should still be possible to open up the casing to dry the interior out if it's ever necessary; just a little more difficult. Meanwhile the sealer adds a small but useful safety factor.



More detail of the internal machinery



Interior machinery



Mike's mainsheet machine

Remember sheet winches must be firmly mounted. The force that can be exerted by these little gizmos is surprising. If you come off a broad reach on to a beat, and wind the mainsheet in hard, you don't want to uproot the winch.

Great care was taken to prevent tangles in operation. Sheets were led in plastic tubes wherever possible. These were given as fair a lead as possible to reduce friction, and led close to the points where sheets joined their endless loops. Baffles were made to keep the various lines out of the way of each other, and above all to prevent the loose, lazy, bight of a headsail sheet from falling into the mainsheet winch drum, a reliable way of creating the most horrible mess. Since in my local dialect, to tangle is to 'caffle', these became 'anti-caffle-baffles'. Well, why not? The one on the mainsheet winch is a small affair made of brass. The aluminium one above is much larger. There are no blocks in the below-decks sheeting system. If a line jumps the sheave and jams in the block, everything stops working, so eyelets were used as fairleads instead.

Next month John completes the hull by adding the deck, superstructure and fittings. **MMI**



Alison M sailing free

SINGAPORE PILOT BOAT

THIS MONTH'S **FREE PLAN** (MAR3670) IS OF A 1/20 SCALE MODEL OF A SINGAPORE PILOT BOAT

AUTHOR: JIM POTTINGER

This model plan had its origins when perusing the Cheoy Lee website, a well-known builder of a range of craft ranging from luxury yachts, sail and motor, to include tugs, workboats, ferries and pilot boats etc. and one of the few shipyards in the world able to build in steel, aluminium, and fibreglass. For 50 years they operated from Lantau Island (now home to Disney Land and Hong Kong Airport) but moved to a site at Doumen on the Pearl River in southern China where this facility allows construction of vessels up to 200 feet.

The Cheoy Lee Company has been a prolific builder of ships and all types of boats for over 100 years with their roots stretching back to 1870 to a building yard in Po Tung Point in Shanghai. At first building wooden commercial craft there they moved to Hong Kong in 1936, and initially specialising in cargo vessels to outrun the Japanese blockade, later diversifying into teak sailing and motor yachts, many being exported to the US. Fifty trawlers were built for the United Nations Korean Reconstruction Agency.

By the mid 1960s wooden construction had been phased out in favour of GRP, and Cheoy Lee were early pioneers of GRP/foam sandwich technology, they now build anything from ferries to tugs and offshore support vessels and a range of yachts up to 446 tons and 144 ft in length plus a number of sailing yacht designs.



Singapore Pilot Boat SP1322G: bow view, which gives a good view of wheelhouse front, engine room intake vents and protective rubbing stakes along the side



Singapore Pilot Boat SP1323E: this gives a good impression of the profile view of one of the series at speed. It is noticeable that the thickness of the rubber rubbing strake is also carried around the bow (courtesy Felix Toggenburger)

Detail view of the flush hatches on the vessel

The shipyard was most co-operative in providing a number of photos of the prototype, and I was lucky to obtain additional views from a passenger on a ship in Singapore waters, all of which assisted in drawing the model plans.

Having previously drawn a few Pilot Boat model plans this type of craft appears to be quite popular with the



Singapore Pilot Boat view from aft, the twin-engine exhaust outlets and boarding hinged platform fitted on the transom are prominent in this picture

model fraternity judging by the number of models built to these drawings, obviously the size and proportions of the prototype lend itself to the construction of models of reasonable size and displacement which allows realistic performance under power. The hulls are reasonably easy to construct, either round bilge, or more commonly now, hard chine, with a one-piece block deckhouse that can be made to lift off to give access to inside. In saying that, some of the latest vessels of this type do have a quite complex shaped wheelhouses and deck casing.

It will be noted that with relatively small changes of shape in the after body the frame shapes drawn on the body plan is somewhat congested drawn at this scale. To overcome this I have drawn some frames separately from the actual body plan to simplify matters.



A clear view of the transom that shows exhaust outlets, hinged platform and the stepped chine



Singapore Pilot Boat 1320 port view



Singapore Pilot Boat 1322 starboard view



Cheoy Lee shipyard

Fortunately the change of section between the upper and lower chine, or in this case outer and inner, is formed by a small constant horizontal step, which can easily be represented by use of thicker planking, on the upper hull matching the width of the step, either in one thickness or two thin layers, overlapping the lower planking as shown on Sht. 2 of the plans.

There is little I can add to the description, as all details should be clear from the drawings and accompanying photos.

MODEL SPECIFICATIONS

Scale: 1/20
Beam: 20.4 cm (8.25")
Length: 72.5 cm (28.5")
Height: 33.5 cm (13.25")

COLOUR SCHEME

Black: upper hull, legend PILOT on side of deckhouse casing
Dark Red: boot topping
White: deckhouse, lettering on hull and vent cowl on wheelhouse, mast, vents
Bright Red: wheelhouse top, vent intakes on wheelhouse
Orange: Lifebuoys
Dark Green: deck

ACKNOWLEDGMENTS

Jonathon Cannon at Cheoy Lee with drawings, photos and information.

Photos: All courtesy of the builders Cheoy Lee except where stated. **MMI**

CHOOSE FROM OUR WIDE RANGE OF PLANS TO SUIT EVERY BUDGET AND LEVEL OF EXPERTISE

SS WHARNCLIFFE

Designed by Hal Harrison

Freelance 'steam powered' cargo coaster for card or balsa, for single electric motor and two function RC.

BEAM: 100 mm

LENGTH: 610

Featured in MMI March 2000

Ref: MAR2776

RRP: £10.00/US\$14.00

+ p&p/s&h

Difficulty Rating ●○○○



ARDENT

Designed by Didier Flechet

Scale Sail

Two sheet plans for a classic ply chine sail cruising yacht length 900mm and beam 260mm. Hull lines and rig and deck detail with frames and model construction details.

BEAM: 260mm

LENGTH: 900mm

Ref: MAR3022

RRP: £17.50/US\$23.00 + p&p/s+h

Difficulty Rating ●●●○



ZUMWALT

Designed by Charles Sells

Free runner for electric power, based on a USN design study for a Stealth type destroyer. All balsa and ply construction. 80 size motor prop runs in tunnel under hull. Could convert to R/C

BEAM 120mm

LENGTH 990 mm

Featured in MMI April 1996

Ref: MAR3155

RRP: £10.00/US\$14.00 + p&p/s&h

Difficulty Rating ●●○○



SIMPLET

Designed by Charles Detriche

Racing sail boats

Simple and inexpensive ply chine hulled one metre design. Uses standard sails and fittings to produce an attractive and well balanced introduction to the class

Featured in MMI October 2000

Ref: MAR2836

RRP: £15.00/US\$20.00 + p&p/s&h

Difficulty Rating ●●○○



LUEMBE

Designed by Jim Pottinger

Scale Tug Boats

Single sheet plan for a chine hull harbour tug built in Angola in 1962. Drawn at 1:24th scale. Electric motor with no model construction data.

BEAM: 160mm

LENGTH: 545mm

Featured in MMI April 2003

Ref: MAR3031

RRP: £10.00/US\$14.00

+ p&p/s&h

Difficulty Rating ●●○○



UNDINE

Designed by Hal Harrison

Unconventional craft

Dynamic dive semi-scale submarine. Practical and simple model with watertight radio and motor compartment. Uses only two function standard RC and forward speed to achieve dive mode. Ply and balsa, with some plastic sheet.

BEAM: 60mm

LENGTH: 760mm

Featured in MMI October 2001

Ref: MAR2901

RRP: £10.00/US\$14.00 + p&p/s+h

Difficulty Rating ●●○○



BLOODHOUND

Designed by Barrie Griffin

A double sheet plan of a Motor Torpedo Development Vessel.

Built for the Royal Navy by Vosper in 1937 for short range work, due to her limited accommodation. An ideal, relatively quick build project. A 1:38th scale electric motor with 2 channel radio function.

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AUTHOR: ERIC BAUTHIER

AMPHIBIOUS RECONNAISSANCE VEHICLE: **FORD GPA**

ERIC DESCRIBES HOW THEO ALBERDIENST SOLVED ALL THE PROBLEMS ASSOCIATED WITH BUILDING A WORKING SCALE MODEL OF A WW2 AMPHIBIOUS VEHICLE

THE HISTORY OF THE FORD GPA

In early 1940, while the first Willys Jeep was being delivered to the US Army, 'Supply Division', an amphibious version was already planned. However, because the United States had only limited industrial production facilities at the beginning of the war, the priority was given to the standard version of the Jeep. Studies undertaken in the field of reconnaissance motor vehicle design had to inevitably consider the crossing of rivers. Thus several manufacturers con-

sidered amphibious vehicles, however, they soon understood that there were various problems and they would have to cope with a real dilemma: the hull had to be designed to offer the best hydrodynamic performance while still able to cope with rough, uneven terrain. Moreover, the very specific mechanical systems of an amphibious vehicle require a multitude of holes in the body to accommodate the various rudders and moving parts. These openings all cause complications both in terms of water-tightness and corrosion resistance.



True to the original



In 1941, a test model referred to as the barbarous abbreviation of QMC-4 (Quarter-master Corps) could make its first test. This prototype became the GPA we know

The construction of an amphibious vehicle is often expensive, as it requires more precision, rigor and the use of superior metals. Welding techniques are difficult and demanding as are the specifications for the propulsion engines. At the beginning of the century a French engineer devised a wheeled vehicle capable of crossing streams. This new technique seemed accessible and usable, but in general, the small payload relegated this type of machine to oblivion. Nearly thirty years later, on the eve of World War II, while research in the world of military technology was in full swing, it seems that the problem of payload was still limiting the use and thus the development of vehicles of this type. In 1940 engineers knew how to build amphibious vehicles but none of these items seemed to have a military application. Only the German vehicle Trippel SG4 had any use in the army. A year later, Porsche proposed a machine that would exceed the expectations of the German Army Weapons Department (the Heereswaffenamt), the famous Schwimmwagen. In total nearly 14,600 such vehicles came out of the Rhine factories, comparable in number to the production of amphibious Jeep GPA. In the United States the engineer, W. Hofheins boasted of having designed the first reliable amphibious vehicle. Unfortunately, he did not have an industrial outlet and lacked resources and so the company soon ceased all activity. In 1940, the US Army, who had finally seen the potential usefulness of such a vehicle, decided to act after some studies. These showed that an amphibious version of the Willys Jeep would probably offer some advantages.

From 1941 funds were allocated for the formal study and building of this vehicle. Several military and civilian engineers solved the technical problems, one after the other. The actual research was carried out by P.C. Putman while the first tests of the hydrodynamic hull were undertaken by Roderic Stephens Jr, a specialist in developing boats for regattas. The very demanding mechanical conversions for the Willys Jeep were then undertaken by Marmon-Herrington workshops. Despite the global conflict at the time, work was carried out skilfully and in 1941 a test model designated QMC-4 (Quarter-master Corps) was made ready for its first test. Further cooperation with the Ford factory was then planned in order to produce the vehicle series and finally on 18th February 1942 Ford presented the US Army with the first prototype. At this time the vehicle did not have the three seats arranged side by side in the front compartment. Various adjustments and improvements still had to be made: installation of five seats, improved exhaust, reinforced bodywork etc. The vehicle was finally approved and the first contract for 7,896 was signed in April 1942; the vehicle was then named the GPA (General Purpose Amphibian). In view of the interest awakened by the Ford GPA several other manufacturing contracts were awarded and approximately 12,780 vehicles were built between September 1942 and June 1943.

For consistency and ease, the Ford GPA was, of course, made up from the maximum number of parts from its land-based counterpart, the GPW (Jeep). The GPA was 600 kilos heavier than the GPW, even though the engine was identical. In addition, like all special vehicles, it was more difficult and expensive to manufacture. The construction of such a vehicle had to respond to the needs of reconnaissance teams, making them able to work in difficult and undulating land where river crossings had to be made. The future of the universal vehicle, Ford GPA, seemed assured; however, problems still existed, as this type of vehicle needed a gently sloping bank. This sort of terrain was relatively common in the US, where the machine was tested, and the USSR. In contrast European rivers and streams have steep slopes and therefore the use of small amphibious vehicles became hazardous.

The Ford GPA certainly did not gain the same notoriety as the famous Willys Jeep, but were active in theatres such as the Eastern Front and the Pacific. Several of these machines were delivered to the Red Army as part of the agreement of 'lease-lend' within the allied nations. The GPA also saw action during the forced crossing of the Dnieper by the Soviet army on 19th March 1944. After the war, the Soviets made a copy built under the name of Gaz-46 by Molotov Gorky. Czechoslovakia also produced a copy of the GPA, which was distributed under the name T 800.

The Ford GPA has a body made of steel plates and bolts making it vital for the whole system to be treated against corrosion. Moreover, it is equipped with four-wheel-drive and its propulsion in the water is provided by a propeller mounted in a central tunnel. The propeller shaft is directly connected to the gearbox with a spring. This system is less cumbersome when compared to a conventional universal joint and allows for the shock of suddenly reversing to be absorbed. The wheels can be set in motion simultaneously with the propeller or separately. It should be noted that their rotation in water allows a faster advance of the machine; moreover, coupled to the rudder they help with the steering. So that the GPA was relatively manoeuvrable on land, its width was limited and its buoyancy reduced by its low freeboard. This feature seems to have been the weakest point of the craft. Minimum buoyancy was actually provided by its four tyres that served as 'floats'. To deal with any water leaks the GPA was equipped with powerful bilge pumps, mechanically connected to the propeller shaft. The vehicle was also equipped with an anchor and a capstan.

A GREAT ADVENTURE IN FORD GPA

After the war, many Ford GPAs were bought by civilians from military surplus supplies and that is how there are some very incredibly modified models. An amusing anecdote that is noteworthy: in 1947, an Australian engineer, Ben Carlin, with a great sense of adventure transformed a GPA to cross the Atlantic. An additional fuel tank was installed in the bow, another under the machine serving as a keel and a third was to be taken in tow. A drinking water tank was also installed. The GPA was embellished with a closed cab and various facilities to improve life on board. Thinking that he should not be alone for such a long voyage, Ben Carlin was accompanied by his girlfriend, Elinore. Finally, after many trials and the raising of various funds, the strange craft named Half Safe took to the water in Halifax on 19th July 1950. This was the first step in a journey of 1,500 nautical miles to the Azores at a speed of three knots. It took about thirty-two days for Half Safe to cover this distance with many difficulties on the way: the drinking water reservoir was pierced causing a serious problem as the tank was under the keel; when transferring its fuel the GPA acquired a list of 30° and was only saved by extreme action; fouled spark plugs; blown head gasket and... sea sickness!



Thanks to the faithful reproduction of the suspension system the model looks and behaves like the original



Rough terrain on land

After a week off, the adventurers continued the journey from island to island across the Azores towards Madeira. The problems continued on this next great step: the bow tank clogged, the engine failed, a faulty fuel pump caused a serious risk of fire on board, rough seas, lost radio contact as a false manoeuvre of a tank accidentally pulled the radio overboard, etc. After several days of sailing, the Half Safe ran out of petrol and luckily was refuelled at sea by a cargo ship. Ben and Elinore finally arrived in Africa on 22nd February. They then returned overland to Sweden via Gibraltar, Lisbon, Madrid, Bordeaux, Paris, Brussels, Hamburg, before returning to London and finally Birmingham.



The GPA will go almost anywhere on land

THE MODEL CONSTRUCTION

It was during an exhibition of a Belgian club's models that Theo Alberdienst discovered a fifteen centimetre static model of a Ford GPA. This model had been produced from various scrap plastic parts and was very realistic. At the sight of this excellent workmanship Theo fell in love with it. He knew from that moment he would have to produce a sailing GPA. Therefore, he began to travel and visited several museums and collections of military vehicles of the Second World War to find out about the full size craft. He did not skimp on travel or mileage and eventually he noticed a GPA in perfect condition. Theo could then identify all the measurements and details as well as taking multiple pictures. From various military and civilian libraries he collected a very complete documentation, made up of numerous sketches and narrative, and chiefly from the famous official TM guides to maintenance and repair. He also procured a 1/35 model by Tamiya that he built to better understand the challenges of his future project. Theo inspected and measured this model made from injected plastic from every angle and it proved to be an invaluable help.

Unfortunately, Theo Alberdienst had no construction plans for the GPA, however, the impressive documentation he had amassed proved sufficient for a designer of his talent: the scale of the model was set at 1:5 and construction could begin.

DESIGN AND CONSTRUCTION

Theo Alberdienst began by making the various templates cut from heavy cardboard. After many adjustments they provided the form of the main body parts that make up the hull. In total, sixteen templates were needed, and after assembly it turned out that this future GPA was already looking great, which gave even more encouragement to our designer. This prototype was then carefully disassembled and each piece was attached and drawn on 1 mm steel sheet. In turn, this plate was cut with great precision and assembled by welding. It is clear that this body was extremely strong but presented a weight problem during the first test. The mechanics of the vehicle were up and running and the machine drove very well, so well that it never left the ground, even when entering the water. Unknowingly and to his amazement, Theo had to admit he had made his first submarine! It is easy to understand the disappointment of our friend when he already had spent a great many hours



The GPA near the beach with the wheels already engaged



The final model is a faithful reproduction in every respect, even the lighting is all functioning and the dashboard has its own lamp



With the breakwater lowered into position the Ford GPA prepares to cross a stream

on this construction. Unfortunately, no solution was possible to improve or rather to obtain a sufficiently buoyant model using this method of construction.

Theo resigned himself to restart the work. He began by dismantling all the electronic and mechanical parts: receiver, horn/klaaxon, various controls, bridges, suspension, engine and propeller. This time he traced the parts forming the shell in 1.2 millimetre plywood; this choice was suitable for either flat or slightly curved parts. For deeply concave or convex pieces, such as the tunnel for the propeller, Theo used fibreglass and resin. The interior of the hull and the deck, which were removable in one piece, were also reinforced by glass fibre. The sections which run along the hull were simply wood. Various other parts were made of plastic or metal. Thus, for example, the breakwater (or surf shield) was made from brass sheet cut and hammered by hand to reproduce the reinforcing ribs. The windscreen, seats, steering column and steering wheel were also formed in brass. On the other hand, the lights and dashboard illumination were fully functional and the rear reflectors were made out of real bicycle reflectors.

Under the vehicle, the two 'banjo' differentials consisted of several copper and brass tubes, of various diameters, silver soldered together. The differential gears were recovered from an old box of Meccano. At the time Theo did not yet possess a milling

machine that would have allowed him to make his own gears. For other gears, he had to be resourceful and collect them from many different devices. Universal joints were manufactured and springs were formed from leaf springs out of old mechanical alarm clocks. As for the tyres, they came from ashtrays advertising Metzeler as these had the required diameter. The rims were made in metal from aluminium off-cuts from the components of modern tanks. Steering is also well reproduced, having steering boxes equipped with a constant velocity joints.

The largest sized human figure available seems a bit small for the scale of the vehicle and will shortly be replaced by a correctly sized model with a made-to-measure US military uniform. Other equipment, such as jerry cans, were home-made, while others come from the accessories range for Action Man.



The steering of the vehicle is faithfully reproduced; steering boxes with a constant velocity joint, suspension, leaf springs and fastenings are all shown



The rims were made in metal from aluminium off-cuts from the components of modern tanks. Tyres, meanwhile, were from ashtrays advertising Metzeler. On the right the exhaust outlet can be seen



At the rear of the vehicle the brake lights and turn signals are all illuminated by LEDs. The reflectors are from bicycle reflectors



The interior of the GPA; the two motors that drive the worm gear are visible at the front

PROPULSION SYSTEM AND R/C

The drive for this beautiful model was provided by three engines, the two Mabushi motors are coupled together and have their original ratio. Together they operate a worm gear recovered from an old record player. The latter leads through the intermediate box bolted to the hull, then to the transmission shaft with universal joints for the front and rear axles, which in turn actuate the wheels. The third motor, a Monoperm is for the propeller which was a three-bladed X 50. Two electronic speed controllers operate the drive wheels and propeller.

Servos, six in number, control different functions: two for the steering of the wheels, one for the rudder, one for the sidelights and headlights, one for the emergency lights and horn/klaxon, one for the main drive speed and one for flashers/direction indicators.

The radio had a twelve-channel transmitter and receiver. The power supply was initially provided by two lead/acid motorcycle batteries of 12 volts 6 Ahr. These batteries significantly increased the weight of the machine causing a low freeboard like the first version. Ultimately NiCad's were used and these significantly reduced the payload while providing the same voltage and 7 Ahr. These batteries were divided into two packs, one in the front and the other in the rear of the GPA to maintain balance.



The front axle: from the worm gear a shaft enters the intermediate housing which drives the rear and forward axles. We can distinguish on the steering one of the steering boxes and a constant velocity joint



The intermediate housing is bolted directly to the hull and is driven by a shaft mounted on the worm gear. This box actuates the front and rear axles by means of shafts assembled on gimbals and universal joints



The dials on the relatively simple dashboard are all lit. The system for lowering the windscreen is a faithful reproduction of the original



Travelling on land



Ready to hit the water! The rusty exhaust can be seen on the front deck



Theo Alberdienst, the friendly and talented designer displaying his Ford GPA

ON THE WATER

After two years of effort, research and building, Theo Alberdienst could finally enjoy his wonderful model both on water and on land. Behaviour of the model on the water is remarkable for its stability and presence. With its flat bow it does not, of course, split the water as the most beautiful of trawlers, but it looks very realistic and certainly brings a twinge of nostalgia for this type of vehicles. In short, you are a long way from suspecting, when you see this magnificent Ford GPA performing, that Theo Alberdienst was making his first attempt at building amphibious vehicles.

MMI



Driving out of the water



The model seen in profile



The GPA on the water

SPECIFICATION OF THE ORIGINAL

Length: 4.62 m

Width: 1.62 m

Height: 1.70 m

Forward Freeboard: 43 cm (including breakwaters)

Freeboard: 24 cm

Unladen Weight: 1.660 kg

Payload: 360 kg

Motorisation: Ford type GPW, 4-cylinder, 2,200 cc

Land Speed: 95 km/h

Speed on the Water: 8.5 km/h

Maximum Slope: 45°

Crew: 2 men

Passengers: 5

SPECIFICATION OF THE MODEL

Scale: 1: 5

Length: 92.5 cm

Width: 32.5 cm

Height: 34 cm

Weight: 20 kg

Propulsion: Electrical

Motorisation: 2 x Mabushi, 1 x Monoperm

Speed: 3.5 km/h

Construction: 2 years



The GPA sails in a very similar way to the full sized vehicle

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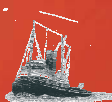
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HANS AND KURT

SISTERS THAT THE WORLD LEFT BEHIND

AUTHOR: NEV WADE EMAIL: barque22@hotmail.com

SIEMERS

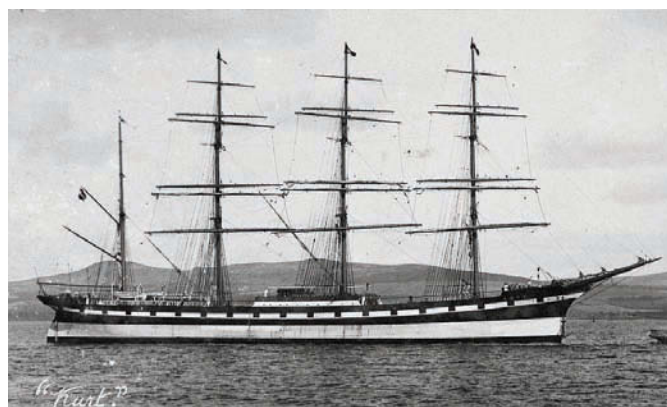
The Hamburg firm of G.J.H. Siemers was established in 1811. Its enterprises included involvement with the trade in importing oil products into Europe, and the cultivation, and import to Germany, of timber from Paraguay. In these and other ventures, the company used steam ships, including a couple called Hans and Kurt. These ships eventually went the way of all flesh, and have been forgotten, but, uncharacteristically, in 1902, the company decided to become involved with sailing ships, as the growing trade in nitrates from Chile promised to be an excellent commercial proposition. The names Hans and Kurt were to be famously revived in this enterprise.

The west coast of South America was an area as yet ill supplied with coaling stations for the ever-growing numbers of steam ships, and, at the turn of the Nineteenth Century, the Panama Canal was still a dream. Therefore, the sailing ship was able to corner the market in the transport of saltpetre to Europe, for use in fertilisers, and in the explosives so soon to be put to use in WW1. British owners took part in this trade, but it was increasingly the ships of Germany and France, which were the chief exponents, as Britain quickly sold off her sailing ships, and went into steam.

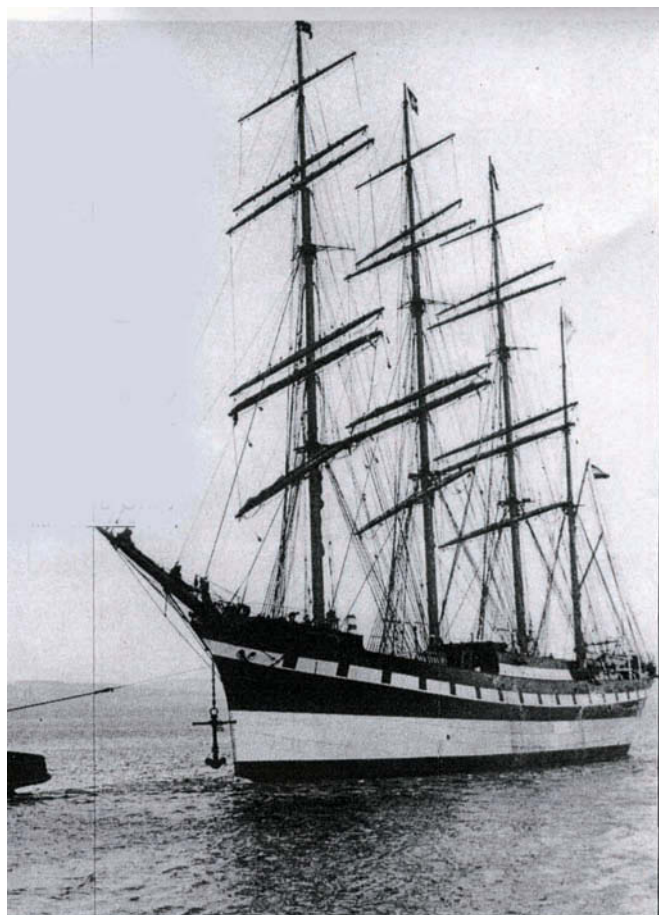
So Siemers bought some second-hand sailers, and joined the other companies on the Flaming Coast. Success came quickly, and the decision was taken to have two ships purpose built in Scotland, at the time the undisputed king of sailing ship building. The two



Hans, in all her pomp, towing down the Clyde as a new ship, in the spring of 1904



The same day on the Clyde. Even with no sail set, she is a graceful vessel



This is Kurt, seen several weeks after her sister ship was finished, towing down the Clyde. She is a big, powerful ship, made specifically to take on Cape Horn, out and back, on every voyage

sisters were built at the yard of William Hamilton, at Port Glasgow, and they bore the yard numbers 170 and 171. Number 170 was named Hans, and was launched in the late spring of 1904, to be followed several weeks later, in April, by number 171, Kurt.

They were both named after members of the Siemers family, and were the last word in the design of sailing ships destined to make their living in the Cape Horn trade, sailing fully laden both outward bound to the west coast, and homeward. They were built of steel, with masts and yards of the same material, and their rigging was of steel wire rope, and chain. They had state of the art manual winches for the handling of their heavy spars, and thus were part of the last, and strongest, generation of sailing ships ever built. To all intents and purposes, they were identical four masted barques, being 340 ft long, with main mast trucks that stood 170 ft above the deck. They were capable of carrying 5000Ts of cargo, in line with the loading arrangements available on the west coast, and in Hamburg.

NITRATE SHIPS

For the next ten years they were to be among the considerable pride of the German merchant fleet, making regular voyages to and fro to the west coast of South America. They took coal from the

UK, or general cargo from Germany to the South American ports, and brought home nitrates. Interspersed with these voyages were trips in ballast from west coast ports to Newcastle, NSW, to load coal from there back to South America, and they also occasionally took coke from Europe to the copper smelter at Santa Rosalia, Mexico, in the Gulf of California, of which we shall hear more later.

These voyages were made by traversing both Atlantics, en route to Cape Horn, then rounding that promontory to the westward, which is against the prevailing winds and currents. It was a prodigious test of men and ships, and these final windjammers were built to withstand the extreme weather that was unavoidable in such wild, southern latitudes. The passage north, up the west coast of South America was, by comparison, a fair weather one, though the Humbolt Current sets northward up that coast, and was notorious for carrying sailing ships past their ports of discharge, causing weeks of effort, sailing out into the Pacific, far enough to reach winds favourable to the attempt to go southwards again, to have another try. Also, the west coast of South America is the longest lee shore in the world, and many is the sailing ship that has been set in to the coast, to be wrecked there, unable to claw her way off the land, against the prevailing westerlies.

Ships bound further north, to San Francisco, or to Santa Rosalia, had to cross the equator again, with the doldrums weather that they had already negotiated in the Atlantic. When homeward bound, the ships tackled the Horn the 'easy way', to the old time sailormen, 'rolling home' on the long passage back to Europe. Even in the best of ships, the round voyage, from Europe to a Chilean port, and home again took more than six months, indeed the very best of the ships involved, the Laeisz five masted barque Potosi only once managed two round trips in a year.

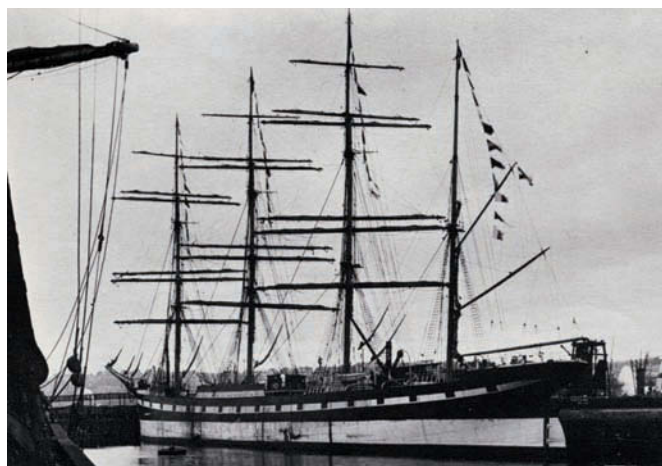
So our two sisters prospered in this trade, until 1914, when many things in the Old World were to change forever, not only sailing ships. Both vessels were in Santa Rosalia in July of that year, delivering coke, and patent fuel (briquetted coal dust) to the copper smelter there. With war imminent, lots of German owners, with ships all the way up the west coast of the Americas, had to leave them there, rather than risk them in the British dominated waters of Northern Europe. It was the start of a dismal time for the ships, and their crews, as war broke out, and they were marooned in neutral ports, all of them for years. It is at this point that the two sisters parted company. They were to meet again, but their fates were to be very different, and that is the tale which now follows.

HANS

Hans remained at Santa Rosalia. In pictures of the time, it looks a bleak place, burning under the hot sun, with an artificial harbour, built for the shipping that served the copper smelter. As well as the smelter there was the company town, with accommodation for the workers and their families, plus bars and a hotel. If you had to pick a spot at which to be marooned, this place would perhaps have been only one step above the proverbial desert island. It is located on the eastern side of the Baja California, the long peninsula, a part of Mexico, which stretches south from California, down the Mexican coast.

In company with Hans were ten other German square-riggers, all large, powerful ships. One other was kept at the nearby port of Guaymas, on the other side of the Gulf. The eleven ships at Santa Rosalia were anchored, in ballast, outside the breakwaters of the harbour, and that's where they remained, swinging to their anchors, as WW1 raged in Europe. There are many stories of the adventures of the sailors, as they either remained in Santa Rosalia, or attempted to make their way back to Germany, but none of them are the subject of this piece. The one event of note to the whole marooned fleet was the possibility, in 1917, of Mexico allying herself with Germany, which would have given them the chance of sailing again, but it didn't materialise, so the long, weary wait continued, in this neutral port.

Finally, in 1918, Hans was awarded to the British, as spoils of war. The British had no use for her, so she was sold to the Robert



This is February 1913, and Hans is loading coal in Wales, bound round the Horn, for the west coast of South America



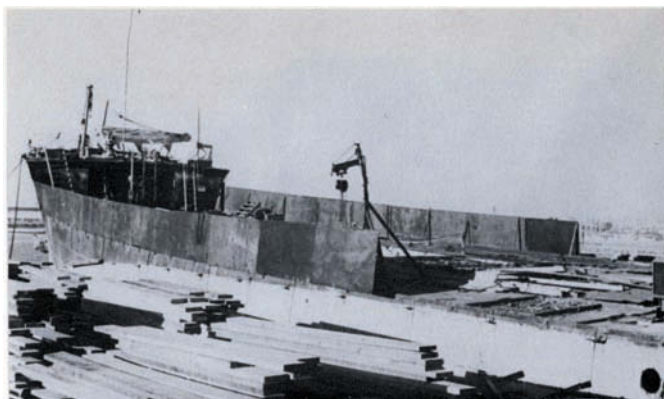
Santa Rosalia, sometime after 1914, with the German windjammers swinging to their anchors. Hans is the third from the right, with her distinctive painted ports



Now named Tango, this is Hans in September 1941, being converted back from a gambling hulk in San Francisco. Her midships Liverpool house has gone, and her bulwarks are being re-built

Dollar Company, of San Francisco, who also bought ten of her companions. They were towed to San Francisco, where the company started to repair and re-fit them, to take advantage of the post war boom in shipping rates, to transport timber from the US to the Far East. The vessels were prepared, and brought into use one at a time, each ship being re-named after a member of the Dollar family. By the time four had been done, and put into service, shipping rates had nose-dived, and the process of rejuvenation was stopped. Hans was to have been number five, as Mary Dollar, but the work was never started. Of the four that had been renovated, each only made one voyage, before being scrapped.

So Hans was laid up at San Francisco, where many fine sailors kept her company, among them the large fleet of square-riggers which belonged to the Alaska Packers Company, now laid up at Alameda. These ships were used to take large numbers of labourers, and many small boats, to the Bering Sea each year, where they caught salmon from the small boats, and packed it, in



As a gambling hulk, she had a long metal gambling hall from the poop to the foc's'le head. Here the bulwarks are being replaced, after the hall had been removed



Tango, six-masted schooner in April 1942. Not many would recognise the Hans that was

ice, aboard the windjammers. The windjammers remained there all season, acting as accommodation for the labourers, and then sailed back to San Francisco at the end of the season, complete with labourers, small boats and salmon. Their time was now over, and they were gently rusting away, largely forgotten by the world.

Hans lay at San Francisco until, in 1935, she was bought by, of all people, a company called SS Tango (Nev.), of Carson City, Nevada. This was a gambling company, and their intention was to re-fit Hans as an offshore casino! Thus it was that she was de-rigged, and had her midships house cut off. She then had the gambling hall built, from foc's'le head to poop, was fitted with the paraphernalia required for this business, and then anchored off Long Beach for the use of gamblers from the mainland.

WW2 created the need for anything that floated to be brought into use as shipping, and this, seemingly, provided resurrection for Hans. The Transatlantic Navigation Company of New York was formed in 1941, and they bought Hans, and re-fitted her as a six-masted schooner, to be used in the timber trade, between the Columbia River ports, and South Africa. The schooner rig was chosen as it was thought to be more economical in the size of crew required, even though she was to be sent via Cape Horn, where such a rig was at a great disadvantage. At all events, she was named Tango, and eventually left Astoria, bound for Cape Town, with timber, in the spring of 1942.

She made it successfully, but, sadly, that was the end of her competent career. The cost of the re-fit, plus some work carried out at Durban, ate away any profit from the voyage from the Columbia River and, after several voyages from South Africa to the east coast of South America, Tango was sold to Portuguese owners in February 1943.

She was re-named Ciudad de Porto, and, almost immediately changed hands again, this time to another Portuguese company, who wanted to use her to take cotton from Mozambique to Portugal. She lay at Lourenco Marques until August 1945, when she was chartered to load coal to Angola. On the passage to Angola she was in distress twice, having to put in first to Durban, and then to Cape Town. She was finally towed from Cape Town to Lobito in Angola, by the Portuguese steamer S.S. Pungue. After discharging the coal, the steamer took the old ship in tow for her last passage, this time to Lisbon, where she was sold, for breaking, in 1948.

It was a sad end for the old ship, but at least she kept the seas to the end, and left us by the time-honoured route for old ships, that of the breaker's yard. Her sister had a better time of it in some ways, but her end has been rather different, as we shall see.

KURT

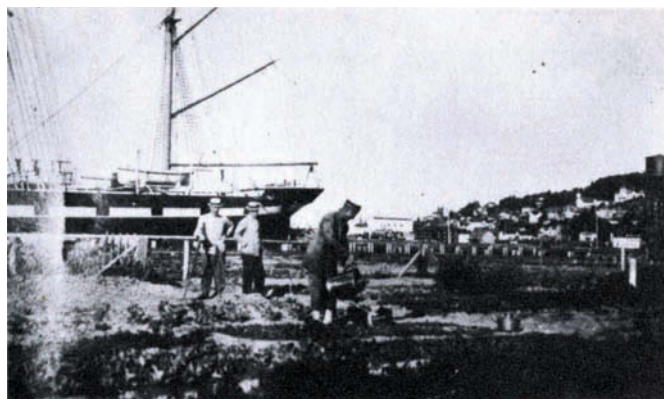
We left Kurt at Santa Rosalia in June, 1914. Unlike Hans, she left that port, bound for Astoria, on the Columbia River, Oregon, in August. She went in ballast, to load grain at Astoria, for the UK, but WW1 put an end to the venture, and she too was stuck in a neutral port. She lay at Astoria until 1917, during which time her master, Captain Tonissen, and the remnants of her crew, established good relations with the local community. Captain Tonissen allowed her to be used as a grandstand, complete with tiered stands being built aboard, for the Astoria Regatta, and, when she was moved to a new anchorage, near some waste land, the resourceful captain even went into gardening, to improve the ship's provender.

In 1917 the US declared war on Germany, and the ship's company became enemy aliens, being then interned, to finally be released in 1920, when Captain Tonissen at last returned to his wife and family in Germany, six long years since he had left.

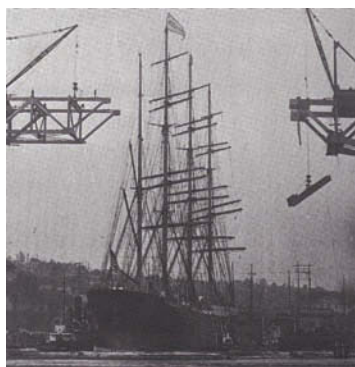
The US Government, in the shape of the US Shipping Board Emergency Fleet Corp., took over the ship, re-naming her



At Astoria in September 1915, here is Kurt, loaned to the local community by her master, Captain Tonissen, for use as a grandstand at the regatta. Temporary, tiered seating has been built on her decks



The remaining officers from Kurt, in their garden, next to the ship, in 1916. Captain Tonissen is at the left. They have already been here for almost two years



Kurt, as Moshulu, in Lake Union in 1931. She was moved downstream of the new bridge just in time to avoid being trapped in the lake

Dreadnought, after a famous American clipper ship. Very quickly, it was realised that there were already a number of Dreadnoughts, and this problem manifested itself with many other seized ships, to the point that Mrs. Wilson, wife of the American President, was asked to perform the onerous duty of choosing names for all the ex-German ships. In the event, she chose to use Native American names, and Dreadnought, ex Kurt became Moshulu, a name to become famous among all who love these ships, and

with many who take only a general interest.

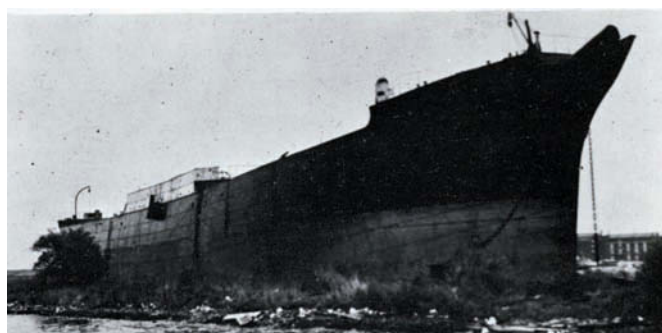
As part of the American mercantile marine, Moshulu sailed on voyages to and fro across the Pacific. She carried timber or general cargo between San Francisco, the Philippines, Australia and Hong Kong, between 1917 and 1921, when she was transferred to the ownership of the Charles Nelson Company, of San Francisco. She was laid up at San Francisco over the winter of '21/'22, when she was near to her sister ship for the first time since 1914. She continued to trade for Charles Nelson until 1924, making a voyage to South Africa, returning by 'running her easting down' going across the Southern Ocean, south of New Zealand, and



Kurt, as Moshulu, in the 1930s. By now she is the largest sailing ship left afloat



Moshulu again. She is sailing with the wind from abaft the port beam; over her 'left shoulder', so to speak. This is the best angle for the big barque to make progress, and her aftermost canvas has been furled, so as not to blanket the square sails, and to minimise the amount of yawing, about her course, that she would otherwise do



The 1950s now, and Moshulu is forlorn as a hulk at Amsterdam. Truly, the world has left her behind



I have no information about this picture, but I think it is of Moshulu after she had been taken to Philadelphia, to become a floating restaurant, in 1974

thence back to the west coast of the US, such are the ways of a sailing ship! Freights being low, she was then laid up again in San Francisco, until 1927.

Moshulu made her last voyage under the American flag under the well-known American sailor, Captain P. A. McDonald. He took the ship to sea from 1927 to early in 1928 when, after a voyage to Australia, she was laid up again, this time in Lake Union, Seattle, Washington State. She remained in this area until 1935, being moved in 1931, so that she was not landlocked by the completion of the George Washington Memorial Bridge! Captain McDonald and his family lived aboard Moshulu all the time she was in the Seattle area, his duty being to look after both her, and another ex-German square-rigger, Dalbek, now re-named (by Mrs Wilson) Monongahela (another Native American name). She now entered the last active phase of her long career, as interest in her was expressed from a small town, across the world from her current home.

GRAIN RACER, AND BEYOND

The last ever owner of a large fleet of square-riggers now enters our story. Gustav Eriksson, of Mariehamn, in the Åland Islands, set in the Baltic between Stockholm and Helsinki, was the last of a long line of sailing ship owners from this farming/seafaring community. He had built his fleet over the previous twenty years, and was deeply attached to the sailing ships that had been his life since childhood. He was able to use the local young men, by that time almost unique in the sailing heritage that they possessed, to man his ships very cheaply, and could just about make pay the very last trade open to these ships, grain from South Australia to Europe. He determined to buy Moshulu, and sent Capt. Gunnar Boman to see her, and seal the deal, and so it was that Capt. Boman relieved Capt. McDonald, who, with great sadness at the end of American deep-water sail, moved his family into Monongahela, and said his goodbyes to his old ship.

A crew of fourteen men was sent from Mariehamn to Seattle, via New York, using a transcontinental bus to cross the continent, and Capt. Boman then had Moshulu towed to Victoria, on Vancouver Island, BC., where she was dry docked at Yarrows. The yard worked on the hull, whilst Boman and his Aland crew re-rigged her completely, a prodigious feat. Capt. Boman, aided by Capt. McDonald, attempted to recruit more young men to add to the crew. They managed to get a further five American boys to undertake the voyage, giving them only twelve deckhands in total. It is a pitifully small number to sail such a ship, but Gustav Erikssons's ships were often run thus, as the only way to make them pay. At all events, Moshulu set sail on 28th September 1935, bound in ballast for Port Lincoln, in Spencer's Gulf, South Australia, to load wheat for Europe.

This trade was the annual 'Grain Race', bringing the product of South Australian farms to Europe. Sailing ships were suitable because of the remote location of Spencer's Gulf, and the primitive loading facilities there. They could put up with the lengthy loading times, and acted as floating warehouses for the grain en route to Europe, which suited the brokers dealing in this commodity. So the very last trading windjammers gathered there each year, usually after ballast passages from Europe, in an ever-decreasing 'fleet'. They arrived in Australia any time from November to March in the Australian summer, and sailed, fully loaded, as soon as they were ready, so the race was simply decided by which vessel made the passage home in the shortest time. Nobody admitted to racing, and indeed it wasn't prudent to push some of these vessels too hard, due to old gear and spars, but the fact remains that the safest way to sail a sailing ship is to get on with it, and make as good time as possible, so everybody took an interest in who made good time, and who didn't!

So Moshulu took her place in this last concourse of the great windjammers. With her recent refit, she was among the best, and strongest of the fleet, and, by this time, she was the largest sailing ship left afloat. She took part in the race for the rest of the 1930s, her passage home in 1939, recorded in Eric Newby's book, 'The Last Grain Race', being the best of that year. In the crew, under Capt. Michael Sjogren, on that homeward run was the sailmaker, a man well known in the Eriksson Ships, John Sommerstrom; we shall hear more of him in due course.

In October of 1939 she set sail from Europe, in ballast for Buenos Aires, chartered to load grain from there to Aalborg, a brave, or foolish thing to do with an old wind ship, with WW2 just started. At all events, as she returned home, she was captured by the Germans, and ordered into Farsund, in Norway, which she reached in April 1940. After discharging her cargo, and taking on ballast, her captain and crew left, and went home to Finland, leaving the sailmaker, John Sommerstrom as ship-keeper. She was moved to Kristiansand, and laid up for two years, then taken to Kirkenes as a depot ship for the Germans. They wanted to rig her down and Sommerstrom, well aware that sailing ships so treated will never regain their masts, protested on behalf of her owner. The Germans told him that if he resisted, he would be hung, so Sommerstrom bowed to the inevitable, and this fine ship became a storage hulk. Sommerstrom left for his home in Aland.

She remained in Scandinavia, at various locations, for the rest of WW2. After hostilities had ended, in 1947, she was bought by a Miss Jacobsen, then sold to a Mr. Sommerfelt, and taken to Stockholm, to be used as a grain store until 1952. In Germany at this time Heinz Schliewen was converting Pamir and Passat, two ex Laeisz four masted barques, into cargo carrying sail training ships, and he proposed to do the same with Moshulu. To this end, she was towed through the Kiel Canal, back to Germany, but Schliewen went bankrupt, and Moshulu then spent some time as a hulk at Amsterdam, before going back to life as a grain store at Stockholm again, to remain there until 1961. She was moved to Finland that year, to perform the same function, and finally was taken to Philadelphia, in the US, in 1974, to become a floating restaurant! She remains at Philadelphia to this day.

EPILOGUE

Ships are not playthings, they were, and are, made to make money. If they cannot do that, then they have no purpose. Well that's the theory anyway. Our two sisters made their money, they did their work, but, along the way, they became more than the sum of their parts. I'm not a sailor, but, reading the real experiences of those that were, in these ships, it's impossible to escape the conclusion that such vessels could 'live'.

To illustrate my point, and in conclusion, I'll briefly quote one of the very best of sailing writers, Alex Hurst, who sailed aboard Moshulu in the 1930s:



This is barge Crown Zellerbach No.2, ex four-masted barque Orotava. She was ending her days as a timber barge, on the Fraser River, at Vancouver, a far cry from her halcyon days, and typical of the fate of many sailing ships, in the middle of the Twentieth Century

"There was one New Year's night when 'Moshulu' was running her easting down between the Cape (Good Hope) and Australia when she really had her head. ... the wind gradually increased all evening ... the ship was leaning over ... with every stitch of canvas set. I have never before, nor since, sensed such utter exultation in a ship, and never, at any other time, experienced such exhilarating sailing. ... passing her bow wave before it was formed, to leave a great white track to leeward, occasionally illuminated by flashes of moonlight shining through the wrack."

Hans came in from the sea, and was broken up for scrap. Kurt lingers on as an exclusive restaurant. I leave it up to you, to consider which

fate was the kinder, but I know that all ship-lovers would have been the poorer, without these sisters that the world left behind.

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- 'Windjammers Significant' by J. Ferrel Colton, pub. by Colton 1954.
- 'To Santa Rosalia, Further, and Back Again', by Harold Huycke, pub. by The Mariners' Museum, Newport News, Virginia, 1970.
- 'Square-riggers, the Final Epoch', by Alex Hurst, pub. by Teredo Books, 1972. **MMI**



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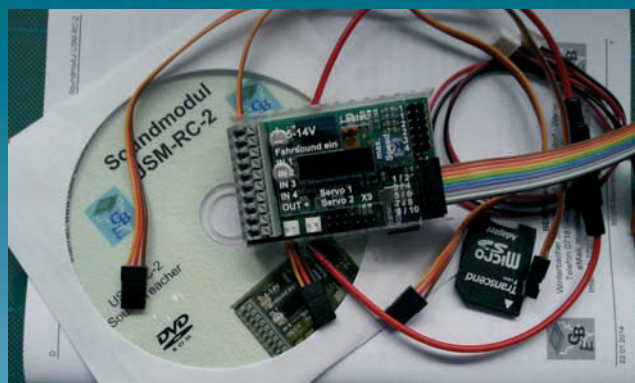
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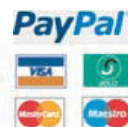


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THE MAKING OF SEAPLANE TENDER NO. 1600

AFTER MUCH ENCOURAGEMENT TONY EXPLAINS HOW HE EVENTUALLY SCRATCH-BUILT A 1:12 SCALE MODEL OF RAF SEAPLANE TENDER NO. 1600

AUTHOR: TONY FEIST

THE SEED IS PLANTED

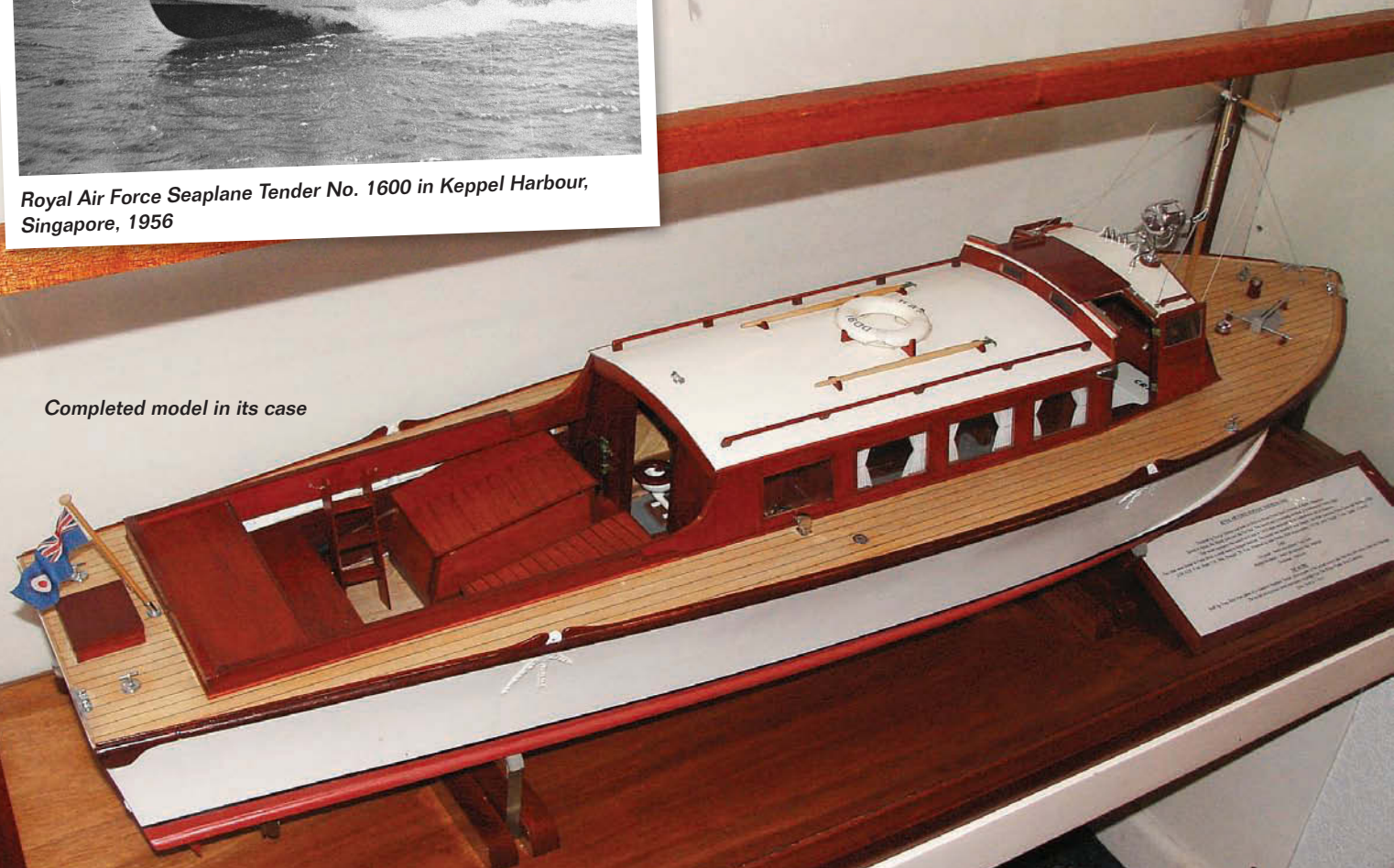
When I was a boy my dad was in The Royal Air Force. On his occasional visits home he would always bring copies of 'The Aeroplane' and 'Flight' magazines. If I was particularly lucky, a model of some obsolete German aircraft was presented to me, redundant from aircraft recognition classes.



Royal Air Force Seaplane Tender No. 1600 in Keppel Harbour, Singapore, 1956

My interest in modelling was initiated, but it was much later when many accurate plastic kits came on the market that I was motivated to start a collection. I opted for World War Two aircraft. When one of these models had, in my estimation, turned out particularly well, I would trundle it round to my neighbour for his opinion. He was a very accomplished modeller, able to turn his hand to any aspect of the hobby. I would invite his comments on my latest effort and he would invariably reply, "Yes, very nice, but why don't you make a real model, one from scratch?" His skill was impressive and his living room was filled with examples of his flawless work. Looking at his exquisite warships, square riggers, merchantmen, motor cars, carriages, cannons, clocks and pistols, I would be discouraged and reply, "Perhaps I will; some day."

Completed model in its case



This went on for a long time. I do not know what finally prompted me but one day, I thought, "Why not." There was no doubt, in my mind, as to the choice of subject. In the '50s I had been a coxswain in The Marine Craft Section of The Royal Air Force. One launch, from all those to which I had been assigned, stood out in my memories – Seaplane Tender No. 1600. This launch operated from a small island, Pulau Brani, in Singapore Harbour and was employed to ferry staff out to incoming troop and ammunition ships.

Designed by the late George Selman, she had been built, in 1943, by The British Power Boat Company, at Hythe, on Southampton Water. To me she epitomised all that is beautiful in small craft. She had been extensively modified at Fanara on The Great Bitter Lakes and whilst her hull remained standard, the changes to her upper works made her unique.

THE PREPARATION

I obtained an excellent set of plans, drawn by John Pritchard, (also an ex RAF Marine Craft man) at a scale of 1 inch to 1 foot.

The full size hull was of double diagonal construction below the chine and single diagonal and batten above the chine. I decided to use .8 mm ply for the hull build and in the interests of strength employed double thickness ply for the entire hull.

I knew my neighbour used a slitting saw to cut straight pieces of timber so I built one from bits, courtesy of the local scrap yard, using an old 1/3 hp electric motor to power it. My neighbour gave me a well-used blade with one tooth missing. The result looked very Heath Robinson but worked like a dream. I was so pleased with it that I splashed out on a new 4" x 1/16th blade.

THE BUILDING OF THE HULL AND DECK

I cut the frames from sturdy three ply timber and notched them on to the keel, having first cut out the indents for the longitudinals. I used epoxy to glue the planks to the frames. I then 'painted' the hull with liquid epoxy and covered that with a fibreglass scrim to prevent runs and ensure that the glue did not cure with high spots. This could have been disastrous as the hardened epoxy was much stronger than the ply. I used pins to temporarily fix the outer planks until the glue had cured. The result was a very strong hull that was not too heavy.



Hull constructed but still a long way to go



In excess of 400 planks were cut



A view from the bow

when the deck was finished I had to scrape the surface to achieve the correct appearance.

THE SUPERSTRUCTURE AND FITTINGS

I made the wheelhouse and cabin from 1.5 mm ply, with 1.5 mm Perspex windows.



I was very pleased with the searchlight

The metal work was more time-consuming. I made the four lifting plates from sheet brass, soldering the laminates together before fitting them to the hull with brass pins. The fairleads were filed from solid brass, as were the navigation lights, mast shoe, cross tree support and hawse pipe.

I then realised that I could proceed no further without a metal turning lathe. This

presented a bit of a problem, as not only did I not have such a tool, but had no idea how to use one either. I managed to find an old Unimat for sale but when I got it home I found that the motor was virtually useless. I replaced that with another I had under my bench.

I chose to start with the searchlight, as it was the biggest item I had to construct. The makers of Francis Searchlights were most helpful, sending me an old catalogue with enough detail for me to fabricate the part. Turning the brass was easier than I thought and I was really pleased with the result. Even the turn and tilt mechanism worked. The fittings I had made were chromed locally. The navigation light lenses were made from appropriately coloured toothbrushes.



Twin Kent 'clearviews' were non-standard



Top view of the wheelhouse

The lifebuoy was turned from 6 mm medium density fibre. The RAF P10 compass, and instrument panel were fashioned from aluminium with reduced size photographs simulating the compass card and instruments. The steering wheel and gear levers were made from thick gauge copper wire.

THE COMPLETION OF THE MODEL

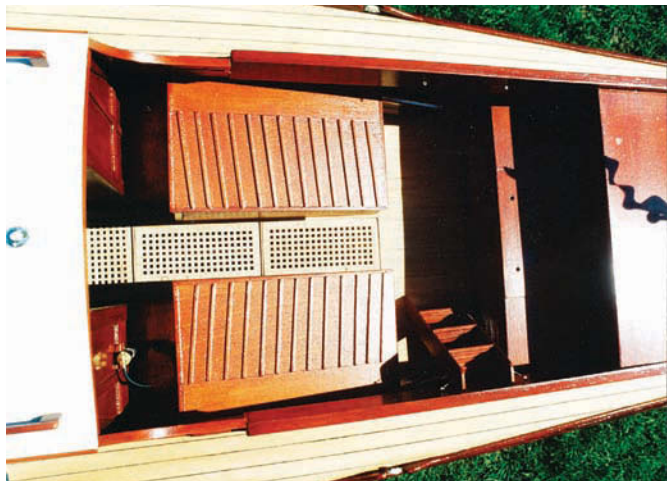
I used twin 545 motors geared down 2:1. Each had its own ESC and 7.2 V NiCad, driving a scale 37 mm prop.

The performance was abysmal. To cap it all I lost one of the props when going astern. In my zeal to try the model out, I had forgotten to tighten a lock nut. I replaced the props with 42 mm units and the model planed well.

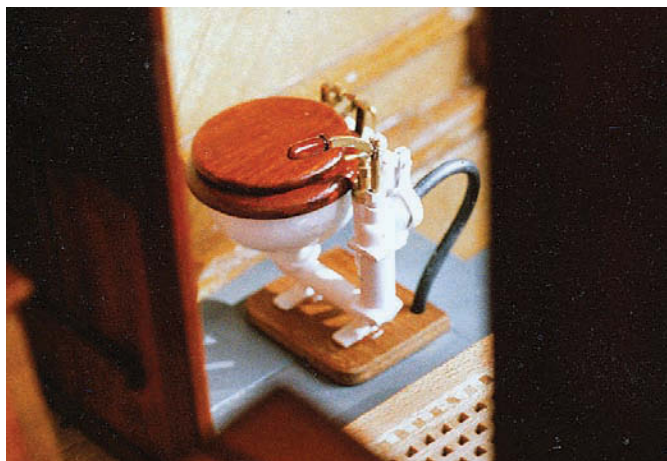
The late Alec Emptage, who was my mechanic on '1600' when we were crew on the launch in Singapore, came to see the model. He pointed out several errors in my construction that resulted in me chiselling off the entire superstructure. The model remained in a decapitated state for a long, long time before I decided to finish her.

I think the most difficult part of the build was the well deck gratings. I utilised the slitting saw to make them but had several failed attempts before getting it right. Some metal parts were made from stainless steel and buffed to represent chrome. (The chrome-plating firm had moved away).

I visited a local boatyard and measured a contemporary 'Baby Blake' toilet. It took me three weeks to construct its model



The well deck. The gratings were not the easiest components to make



A contemporary 'Baby Blake' toilet



Last touches to the case. Lifting it was a two man job

counterpart, together with hand basin and pump, plus a model stove complete with kettle for the galley. The rigging was made by twisting three strands of thin silvered fuse wire together.

The only components bought in were the props, the RAF ensign, decals and the top of the mushroom vents forward of the wheelhouse. These are the tops of bathroom mirror screws. My neighbour would have definitely made all these parts himself. Someone gave me a strip of mahogany from The British Power Boat Company. This was pretty amazing as the firm shut down around 1946. The well deck coaming is made from this piece of timber and I thought it was a very nice touch.

My neighbour liked the model, or at least, said he did, which is just as well as the whole damned idea was his in the first place. My model of 1600 is currently on display at the Muckleburgh Military Museum in Norfolk. **MMI**



Showing the symmetry of George Selman's design



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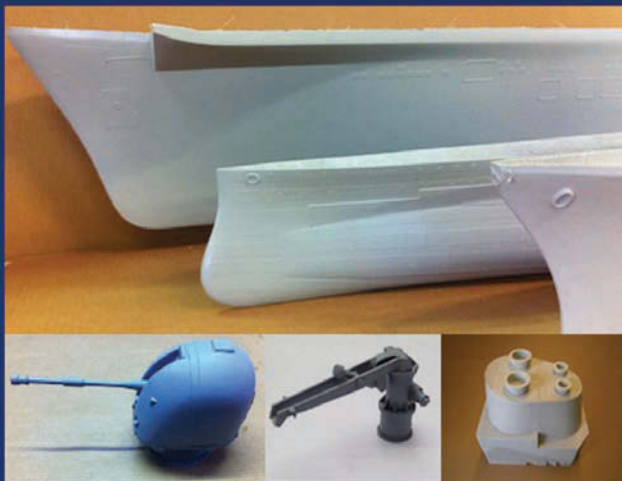
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INTRODUCTION TO MODEL WATERSKIER

HOW TO ADD AN ATTRACTIVE NOVELTY FEATURE TO A POWERBOAT

AUTHOR: TONY HILL

In 1967 I read an article in one of the model magazines on making a waterskiing doll. It quite took my fancy and I have been making skiing models, on and off, for the last 46 years. Spectators always seem to find them interesting. I first tried them out at Lindow Common, Wilmslow. My boat was pulling a waterskier and my 'friend' decided to chase it with his boat. It wasn't long before he made an error and his boat crossed the towline. The skier was only attached with a paperclip so that it would disengage easily and this it did as his propeller grabbed the towline, wrapping it around the stern tube of his boat so that it was pulled onto the bow. There it seemed to cling on for dear life. Luckily the engines of both boats kept running and they were brought back to the bank. The skier was found firmly holding on to the other boat with the towline wrapped tight to the shaft. Then the voice of a young boy piped up, "Go on mister, do it again."

In 1970 I moved to Stafford and met Neville Bishop. We sailed waterskiers on the rowing boat lake near the larger lake at Chasewater, where spectators were watching the human beings water skiing. When our engines started up the spectators all turned round to watch our model skiers doing the same things.

We demonstrated them at Hanley Forrest Park. It was there that, unfortunately, Neville's skier became detached. She was not a good swimmer and sadly we lost her. When Neville got home he was telling his wife what had happened and his two young daughters suddenly got up and quickly left the room to hide their dolls.

The Potteries Model Boat Club used to put on a show at Hanley Park each year. One year I was there demonstrating the waterskier and in my rush to get it running I kept getting the tow line caught on the skis and this prevented the skier coming up onto the surface as the boat moved off. I was getting more and more frustrated and it must have made it look very difficult to do, because when I finally got it right there was loud applause from the spectators. The old circus tricks really work!

One year we had them going over a ski jump at Westport Lake Park. The important thing was to ensure that the skier went over the jump and not the boat, for if it did the propeller was lost. So the boat had to be lined up very carefully as it approached the jump, but the spectators kept leaning forward to get a good view and the poor chap controlling the boat, me, couldn't see the jump and had to turn the boat away for safety. We got the spectators trained in the end and the jumps went well.

Model waterskiers can be fun and there are many things you can do with them and many places they can be sailed. They are always a crowd pleaser and we usually take them with us to Biddulph Country Park on our annual visit. We have also demonstrated them at the Model Boat Show at Beale Park. So I thought it would be an idea to let other modellers know how to make them and set them up.

HOW TO MAKE A MODEL WATERSKIER

From that first article I read, each ski was made from two pieces of plywood 1/32" thick, glued together on a jig that formed the bends at the front-end. Of course wood floats and this caused the skier to lie on her side in the water and so she would never rise to the surface when towed. To solve this problem I had to wrap solder around her ankles to make her float in an upright position. I now use aluminium strip for the skis and this seems to work fine.

The doll shown in the photo is a 12" high model of Emma Bunton, one of the Spice Girls, known as Baby Spice. I also have Posh and Ginger Spice on skis. They were being sold off at reduced price after Christmas in the year they were at the height of their fame (the dolls that is – not the girls).

Models that look big in the workshop can look very small when they are out on the water and waterskiers are not immune to this problem. However, if the skier is made bigger we also have to make the boat that pulls it bigger as well. I suggest that the optimum size for the skier is to use a doll that is 12" tall, a size that is readily available. That would require the boat to be about 36" long.

CONSTRUCTING THE SKIS AND FRAMES

For 12" high dolls I make the skis from aluminium strip, each 1.0 mm thick, 2 cm wide and 32 cm long. The weight and lack of buoyancy of this material ensures the doll floats the right way up. There needs to be 11 cm between the inside edges of the skis to give stability when planing over the water. The skis shown in the photographs have a piece of 1 mm marine plywood laminated to the underside to provide a bit of stiffness and add a little more buoyancy, but it makes them more difficult to make and is not essential.

The first 1.5 to 2 cm of the ski is bent up in a curve and in addition the skis need a slight upward curve from the doll's feet to the front tip, as can be seen in the pictures. This is to give a bit of lift when the skier is planing over the surface of the water.

To ensure the spacing between the skis is maintained at 11 cm, a length of piano wire 1.5 mm diameter, bent in the shape of a goalpost (football term) 2 cm high, will need to be positioned 5 cm from the front tip of the skis. It is fitted by drilling a 1.5 mm hole through the ski and pushing the ends of the wire through the holes. The wire should have a right angle bend 2 cm below the cross piece and in a direction that will point to the rear end of the ski when it is fitted in place. The length of this rear projection should be 1 to 1.5 cm.

At 6 cm from the rear edge of the skis, a wire 'A' frame is fitted, both these wires act to space the skis apart and the rear 'A' frame will also be used to support the doll. The wire spacers can be secured to the skis with Araldite applied over the wire on the underside of the skis. Note that any cross wires must be at least 2 cm above the skis so as not to cause excessive drag in the water.

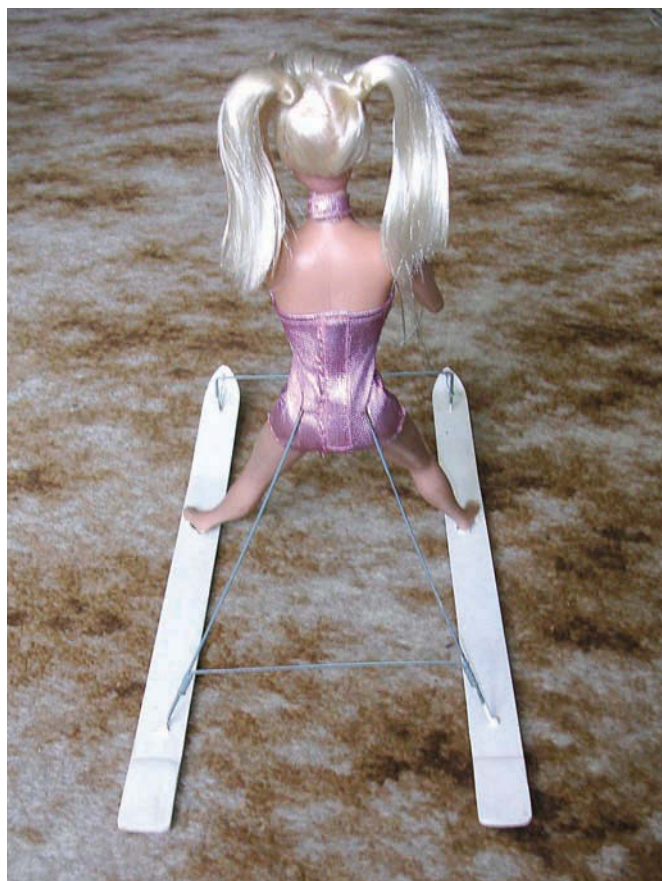
The doll's legs now have to be forced apart and angled so that she stands nicely with her feet on the skis. With old style dolls this can be achieved by cutting material away at the hips and then welding them back in place with a clean soldering iron used to melt some of the bits pared away. With modern dolls the legs are hinged more prudishly, with a parallel acting hinge that keeps her knees together. I found that a suitably shaped piece of balsa wood strategically placed between her legs just below the crotch would hold them in position quite well, provided it was glued into position.

Any joints or gaps in the doll's body must be coated with an impact adhesive to prevent water entering her body. If you don't the doll will not float, it will still come up when the boat pulls but it will not look right in the water before the boat starts.

The doll's feet can be secured to the skis with small wood screws fed through the skis from below. To support the doll the top of the 'A' frame is bound to the doll's waist with cotton thread and the thread then coated with thin waterproof glue. When set the doll's mini dress can be sewn together between her legs to form her bathing costume, or if you are good at needlecraft, you can design a costume – or maybe not.



Aluminium skis bent up at the tips

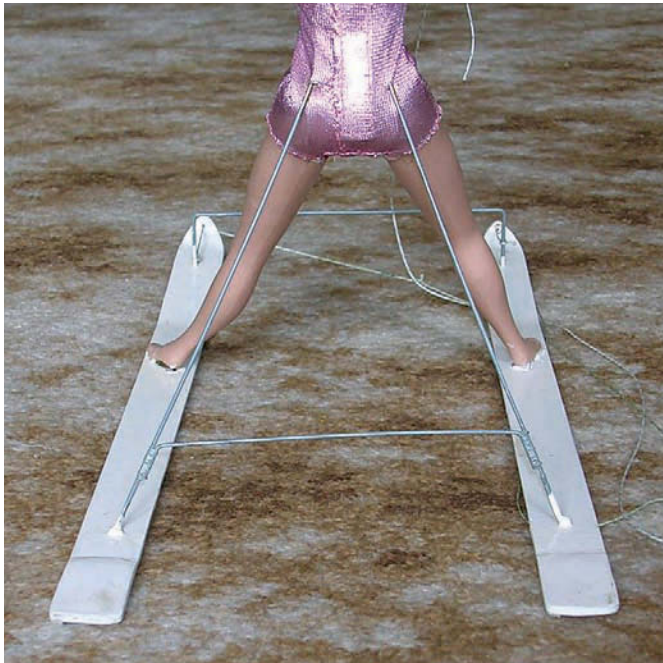


Additionally the skis need a slight upward curve from the doll's feet to the front tip

ATTACHING THE TOWING ROPE

A human would be towed by a rope held by the skier and the skier would have to lean backwards a sufficient amount to prevent being pulled over. A doll cannot do that because she would lean forward and the skis would drag her below the surface of the water. The towline for the model skier must therefore be attached to the skis as can be seen in the picture.

To do this a small hole is drilled in the tip of the each ski. A 60 cm length of thin twine, or fishing line with a breaking strain of about 20 lb has one end threaded through the hole in the tip of one ski and then attached to the cross wire just above the ski. The other end of this line is then attached by the same method to the other ski.



The supporting frames are clearly visible



The towing string needs to be thicker cotton string so that it is more visible

The towing string needs to be thicker cotton string so that it is more visible, at least 3 metres long. This may sound a lot, but it is not when you see it on the water and is attached to the towing boat with a paperclip. Now find the centre of the length of line fastened to the skis and loop it round the thumb and index finger of one hand. Twist your hand to point downwards allowing your finger and thumb to pass either side of the two lines to the skis and then pinch finger and thumb together. You should now have a double loop in the string with your finger through one and thumb through the other. The free end of the towline should be passed through these two loops and then be fastened to the doll's hand(s).



Slide the two loops of the twine forwards or backwards along the line so that as the tow string is kept taut the skier tilts backwards approximately 45 degrees



A full action photograph

This next point is very important. The loops in the twine can be slid along the towing string. With the boat on its stand, fasten the end of the towline to its stern. Then holding the skier by the waist with a finger and thumb of one hand, slide the two loops of the twine forwards or backwards along the line so that as the tow string is kept taut the skier tilts backwards approximately 45 degrees. If you do not do this the power needed to get the skier to plane from a floating position will be excessive. When you have found this position apply a spot of superglue to fix it. It helps if the line attached to the skis is a dark colour, so that it is less visible than the white tow string.

With a model boat drawing 100 watts of power the skier

will perform from a hand launch or from standing on the bank. With available motor power of 200 to 300 watts the skier will come up onto the surface from a floating position in the water. The power taken by the motor can be measured by multiplying the battery voltage by the current taken at full power whilst the boat is being held stationary in the water. Increasing the propeller diameter and/or pitch will increase the current/power drawn by the motor and a smaller propeller will reduce the current/power.

For smaller sized dolls to those mentioned, scale down the dimensions given proportionally, and the towing power requirements will reduce as well, but remember when the model is on the water it will look a lot smaller.

THE MOTOR(S)

When a boat is pulling anything it causes drag and the drive motor draws more power from the battery as it struggles to move the load. The propeller rotates in one direction and the motor casing tries to rotate in the opposite direction causing the boat to roll to one side. To counteract this I use two motors arranged to rotate in opposite directions to cancel out this torque reaction so that the boat remains level under all conditions.

The motors in my boat are both 700BB size and rated at 9.6 volts and 15 amps (144 watts) with 42 mm dia two-bladed brass propellers; however these motors can be run at 15 volts as long as the current does not exceed the 15 amp limit. To achieve this, the propellers can be changed to 35 mm dia and the power developed can then be up to 255 watts per motor. Once the boat has got up to speed the power drawn from the battery will drop considerably. **MMI**

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BELGIAN MINESWEEPER OUGREE

PATRICK GOES ONBOARD BNS OUGREE

AUTHOR: PATRICK BONIFACE

For many years the former Belgian minesweeper BNS Ougree was swinging on a buoy in the River Medway at Chatham Dockyard, but she was occasionally brought in alongside the dockyard wall allowing visitors to the tourist attraction a close look at the vessel. Whilst she was not presented in the best condition she could still make for an interesting model boat project.

BNS Ougree was based on the contemporary British Ham and Ley class minesweepers that were built in numerous numbers for the Royal Navy and appears to be in a very close condition to when these vessels entered service in the mid to late 1950s.

BNS Ougree was built for the Belgian Navy and commissioned in to service in 1958 and continued to serve the Belgium until she was decommissioned in 1992 – much later than her British contemporaries, which mostly left service in the 1970s and early 1980s. During her career with the Belgian Navy she operated

principally in the North Sea and it was there that on 9th January 1987 she was stranded whilst on passage between Kallo and Ostend whilst operating with the warships Dinant, Merksem and Herstal. After being re-floated and repaired she re-entered service where she remained for another five years.

In 1992 she was decommissioned and sold on the open market and for a while was owned by Putters Patrick (Naval Memorial Association) before being sold in 2002 to Michael Stanton of Kent who kept the minesweeper on the River Medway. In 2011 she was put up for sale and after no buyers came forward to restore or restyle the 1950s vintage vessel she was sold for demolition.

BNS Ougree, and her sister ships, were built out of wood and powered by two MAN V12 turbo diesels driving twin screws. These minesweepers had a displacement of 100 metric tonnes. **MMI**



Bridge structure



General shot



Ship's mast



Forward section of aft deck



Aft deck (with non standard picnic table)



Detailed shot of ship's mast



Aft section



Aft of bridge structure



Aft looking forward

CHANDLERY

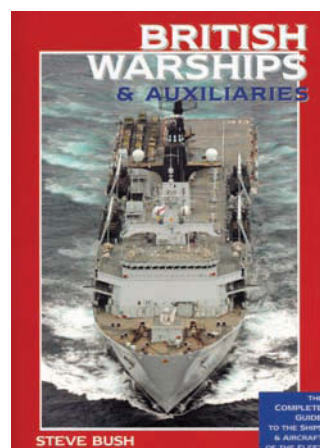
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BRITISH WARSHIPS & AUXILIARIES 2014/2015

This very convenient pocket size yearbook details all the current ships, aircraft and weapons in service with the Royal Navy.

The author, Steve Bush is well versed with the RN after serving for 22 years and in his introduction summarises the strength of the Royal Navy in 2014 with many warships now decommissioned. The argument that many politicians make of a smaller navy is that with present day technology the modern warship has more than twice as much firepower as the old warships, but, as Steve mentions in his introduction, you cannot be in two places at the same time!

Each page of this book has a large picture of the ship/aircraft/weapon and a brief description of the statistics, sizes, pennant numbers, etc.



Author: Steve Bush
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Illustrations: Over 110 colour pictures
Dimensions: 21 cm x 15 cm
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HMS Tintagel Castle

in brass prop tubes fitted with oiling tube plus a comprehensive and detailed instruction book and a set of decals. A full size plan in colour to assist in the assembly of this impressive model, also included is a CD of over 400 pictures of the build from the prototype's test kits. An options page is included for upgrades to the kit, such as highly detailed resin cast ship's boats, an exchange system where items such as brass etched stanchions can be returned and part exchanged for museum quality etched stanchion, working brass etched stanchions or turned brass items.

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MV Mercandian President

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Oulton Lady

For further details of the above kits contact Deans Marine, Conquest Drove, Farcet, Peterborough, PE7 3DH. Tel: 01733 244166 or visit www.deansmarine.co.uk **MMI**

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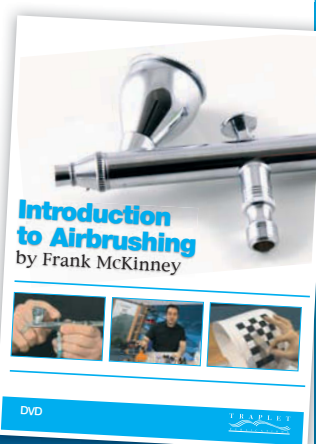
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1/1200TH ROYAL SPITHEAD REVIEW

AUTHOR: JACK SNARY

MOST OF US WILL HAVE SEEN JACK'S IMPRESSIVE DISPLAY OF MODELS AT VARIOUS MODEL EXHIBITIONS. HERE HE TELLS THE STORY BEHIND THE DISPLAY AND EXPLAINS HOW IT IS TRANSPORTED



Jack Snary with his display seen at the Model Show held at the Fleet Air Arm Museum in Yeovilton in February

HOW IT ALL STARTED

When my 1/1200th scale Royal Spithead Review is at various events I am always asked two questions: "How did it all start?", and the most common question of all, "How is it transported?" The answer to that first question, is with a chance remark and because someone did not turn up at a show!

I have always been interested in the development of big gun ships, and in the mid-1970s I said to my wife, it would be nice to see various battleships modelled. Her reply, (now denied), being a modeller why did I not model them? That made

me start looking for suitable kits. But to show any development clearly ideally all the models should be to the same scale, and living in a normal family house, with a young family, one not too big!

The war gaming scale of 1/1200th seemed to fit the bill, being not big, but large enough for reasonable detail. Also there were a number of reasonably priced plastic and metal kits from various manufacturers available, while at toy swapmeets the old Triang ships could still be obtained cheaply. So I started collecting, originally battleships and liners, but very soon other vessels started creeping into my growing unmade collection.

Then in 1980, I decided to make a start on the models. Having never made a 1/1200th scale ship before, I decided to start with something simple. I selected a metal kit (now obsolete) of the British submarine monitor M1, which I completed in October 1980.

She, like all her successors, is included in today's display. Originally I built just one model of each class. Then realising how sister ships can vary, and how much even a single ship can change over its life, I began building all the ships in the class or the same ship more than once to cover changes. But those differences now involved conversion to the original kit or model.

I had previously found plastic sheet an ideal modelling material, and therefore suitable for conversion work. As the conversions got more complex, it was easier to build more and more parts from scratch, until no kit! The first couple of scratch ships had balsa wood hulls, but I quickly decided a plastic hull of box section construction was better (see MMI August 2012, HMS Pioneer).

Nowadays most additions are scratch-built, but the odd kit still makes its appearance into the 'Review Fleet'. However, the original idea of showing the development of the British battleship has remained. When I started I had no idea that to fully cover every big gun/armoured ship in the Royal Navy, from the first to last (Warrior to Vanguard) including the cancelled ones, would require the construction of nearly 300 models, perhaps it's a good job I didn't, but it is now complete.

In the meantime my 'miniature maritime history' was extended back to ancient Egypt and now covers (at present) 3,000 years, with key development vessels over the period being selected, and at least one example of other types of RN vessels.



Interested visitors



Jack explaining his display at Thornbury in 2012



View along 'review' lines



A selection of Royal Yachts



Ships from classical times

THE MODEL SPITHEAD REVIEW

The notion of laying out the models as if at a Spithead Review was purely by accident! After a few years some of my ships were on display on my model club's stand at local events. At one such show, the organisation next to us failed to turn up. Being opposite the entrance, we were asked if we could fill the two empty tables before the show opened. As we always bring more models and cloths than are needed, we said we could, and started laying out more models. I got out the remainder of my about thirty models, among which were the Royal Yacht Britannia and two frigates. For something different I decided to place Britannia, escorted by the frigates, as if 'reviewing' the lines of other models, and that is how it all started. From those thirty models laid out individually on half a table, it is now a display of around six hundred models on six tables with backgrounds and review memorabilia, and those first two frigates are now being 'reviewed' themselves.



The Royal Spithead Review in store at home

Now we come to the second question – transportation! The models are no longer laid out, stored or transported individually. Today they are affixed in groups on coded clear PVC sheets with Blu-Tak, so they can be removed. The various sized sheets fit like pieces of a jigsaw into one of twenty-two carrying boxes (modified supermarket vegetable boxes), with packing instructions in each lid. Just how the PVC sheet idea started I cannot remember, but I know it was when I had about sixty models. The present system has evolved over the years, and today with two people, it takes just over two hours to lay out from scratch, and just over one hour to clear down (the photos explain it more clearly). They are not displayed at home, and yes, there are always some repairs after each show.

WHY SPITHEAD?

Spithead is the name for the stretch of water in the Solent between Portsmouth Harbour and Ryde on the Isle of Wight, which covers the Spit Sandbank. For almost two thousand years in both war and peace it has been the scene of nearly ninety fleet reviews,



Models in their box awaiting laying out



ABOVE/BELOW: The review packed ready for transportation



watched by thirty-three of Britain's rulers. The first being in 43AD as part of the Roman Conquest fleet led by the future Emperor Vespasian, the last, by our present Queen in 2005, for the 200th anniversary of Trafalgar. So the use of a Spithead Review theme for a display of models spanning three thousand years seemed fitting.

My display, of course, does not represent any particular review, due to the nature and time scale of the models, but it does conform to the modern review format. A line of Royal Yachts and official vessels dating from Roman times to the present, all associated with Spithead, led by a Trinity House vessel, are laid out as if reviewing lines of British and foreign

guest warships. Sightseeing merchant vessels are also present, sailing through other lines. While at each end representations of Portsmouth and Ryde are holding Navy and Lifeboat Days respectively, events both associated with reviews.

I hope that I have answered some questions, and that my Royal Spithead Review will continue to be of interest to future model show visitors. **MMI**



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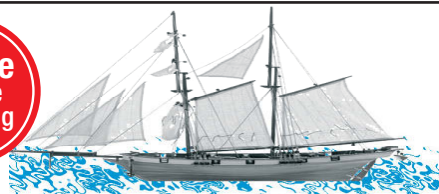
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The busy port of Picton with the Inter-island ferry



MIMI VISITS

PICTON IN SOUTH ISLAND, NEW ZEALAND

AUTHOR: CHRIS SAUNDERS  GREAT BRITAIN

THE INTERISLAND FERRY

During our extended holiday in New Zealand my wife and I only suffered two wet days. The first of these occurred when we were staying at Picton, which is in the north east of the South Island and on Queen Charlotte Sound. The town has a large and very active port as it is the terminus for the interisland ferry service and we spent some time watching the ferries arrive, unload, load and depart. One particularly interesting activity was the transfer of rail carriages to the ferry. A large shunting yard had a small train sorting carriages into long strings. Once the ferry arrived the train went aboard and returned with more carriages; clearly the track joined the boat to the land. The pre-sorted carriages were then shunted onto the ferry for the return to the North Island.

ECHO – A NEW ZEALAND SCOW

As the weather was not suitable for a decent walk we decided to explore the harbour and marina area. The first point of interest was a very dilapidated New Zealand Scow stranded on the shore and used as a café. Called the Echo she was in very poor condition with the bow planks all sprung and serious rot visible in most of her main planks. In her heyday she had plied her trade between the main islands and been an important component in keeping goods moving throughout the country. The present owner was quite



The Scow Echo



The deck has been cleared to give additional seating areas



The inside is set out as a café



The sloping stern, rudder and propeller

happy to let me go aboard. The café area was set to be reopened when the holiday season got into full swing and the walls were all decorated in photographs and posters of the ship when she was fully operational. The main deck had been cleared of almost all its fittings in order to provide an outside seating area. With the tide being low I was able to take pictures of her unusually sloping stern and propulsion system.



A nice 100th scale model of the Edwin Fox

to be missed and the entrance was quickly located just around the corner. On entering a small but very neatly set out entrance we were greeted by a very pleasant lady who encouraged us to see the exhibition upstairs before visiting the ship itself. Although the museum is not very large great care had been taken to make sure all the information was clearly displayed alongside a wide range of artefacts from the ship. An excellent video gave the history of the craft together with an insight into the living conditions aboard.

The Edwin Fox had a complex and varied history. Built in India she undertook her maiden voyage to London via the Cape of Good Hope in 1853. On arrival she was sold to Duncan Dimbar the owner of the then largest shipping fleet on earth. In 1855 she was chartered as a troop and supply ship in the Crimean War before trading in various ports in the east. This included transporting 300 coolies (Chinese workers) to Cuba to work in the sugar plantations. In 1858 the British Government chartered her to transport convicts to Australia. Until 1872 she regularly traded between the UK and the east carrying beer and tea, with the occasional detour to carry troop casualties from Bombay back home. Late in 1873 she was chartered to carry immigrants to New Zealand; this she did four times carrying 751 passengers in total.

By the 1880s the Edwin Fox had been completely refitted as a freezer ship carrying lamb all over the world. On her return to Picton in 1897 she was laid up and would never go to sea again. Used as



The bow section in remarkably good condition



The hull side with copper plates visible towards the stern

THE EDWIN FOX MUSEUM

On visiting the ferry terminal I attempted to get a clear photograph of the rail link to the ferry but could find no vantage point. It was then that my wife pointed out a sign for the Edwin Fox Museum stating that it was the world's oldest merchant ship. This was not

a freezer store for a number of years she soon began to decay and was abandoned. In 1965 she was purchased for a shilling by a preservation society but it took until 1986 to raise sufficient funds to get her moved into the safety of the inner harbour. Her last movement was in 1999 when she was finally floated into a specially prepared dry dock where restoration work could begin and the present day museum constructed.

THE ORIGINAL HULL

Once we had digested all the information about the ship's history and had a close look at the three excellent models on display, we went to see the remains of the original craft. For this we had to go outside and walk



Very little is left of the original deck



Reconstruction of the spaces allocated to immigrant families



The deck supports eaten away between high and low water mark

across to the covered dry dock. My initial impressions were amazement at how much of her remains in original condition. The copper plating on the hull is still clearly visible in many areas and large areas of planking still look very sound. However, there is still a huge amount of work to do if she is to be preserved for future generations.

Efforts have been made to reconstruct some of the living conditions aboard. We marvelled at the extremely cramped conditions the early immigrants from Britain endured during the long sea voyage. A great deal of thought and effort has gone into this sympathetic reconstruction and I must say it has been extremely successful.

Modern wooden stairs led down from the small, reconstructed piece of decking into the bilges. Here a most amazing sight greets the visitors. Where the deck supports had been effected by the change in water level due to the tide they were almost completely eaten away. However, both above and below this area the beams were in almost original condition. So, all the beams have a narrow neck about 3 to 5 ft above the keel, which makes a very unusual sight. Only a few beams have had to be completely replaced.

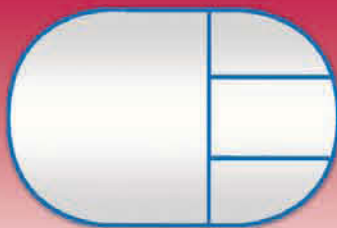
CONCLUSION

We thoroughly enjoyed looking around the craft and I learnt a great deal about how the keel and hull planking was achieved in this era. On leaving the dry dock we were struck by all the activity taking place around the museum. When we asked one of the volunteers what was going on he told us that there was to be a visit by the Governor General the following day. We wished them good luck and left having spent a very happy two hours and recommend this as a very worthwhile visit to anyone who visits the area.

For more information visit www.edwinfoxsociety.com
MMI

SHIP DETAILS

Type: East Indiaman
Length: 160 ft
Waterline Length: 144 ft 8"
Waterline Beam: 29 ft 8"
Draft: 23 ft 6"
Registered Tons: 836 tons
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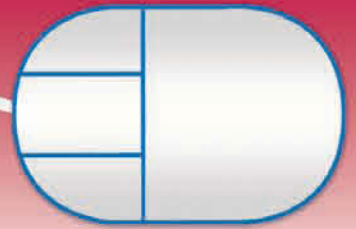
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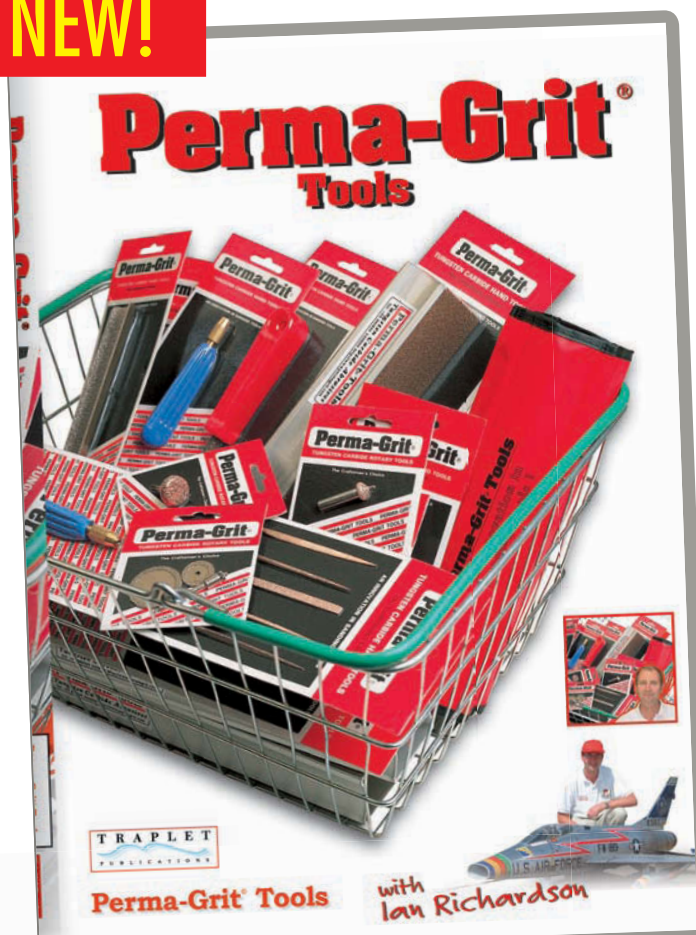


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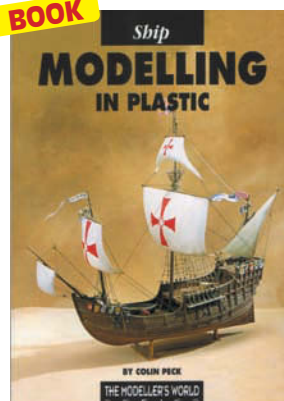
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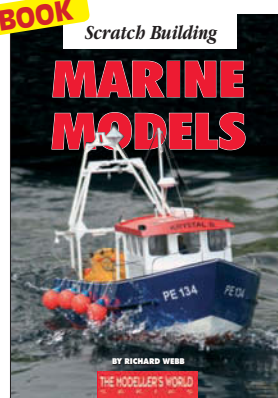
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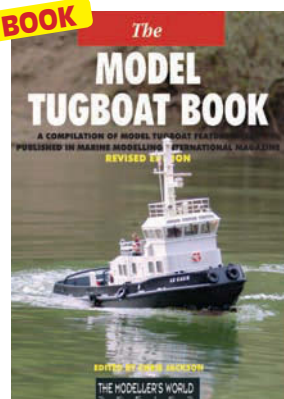
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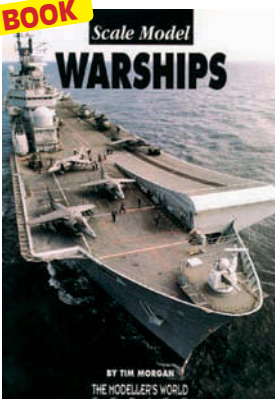
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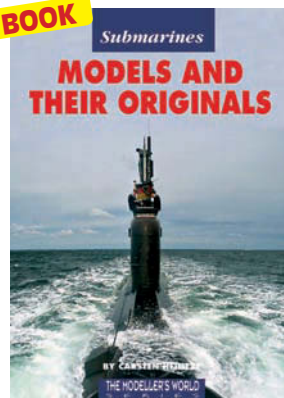
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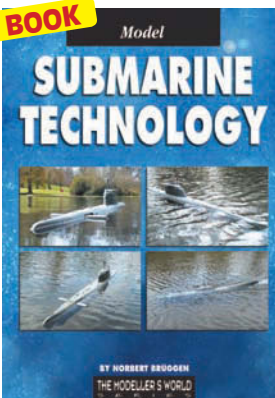
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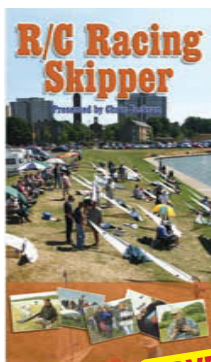
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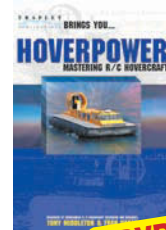
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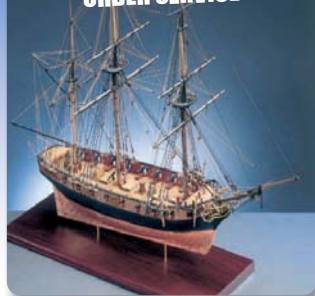
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