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SEPTEMBER 2013

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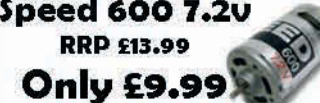
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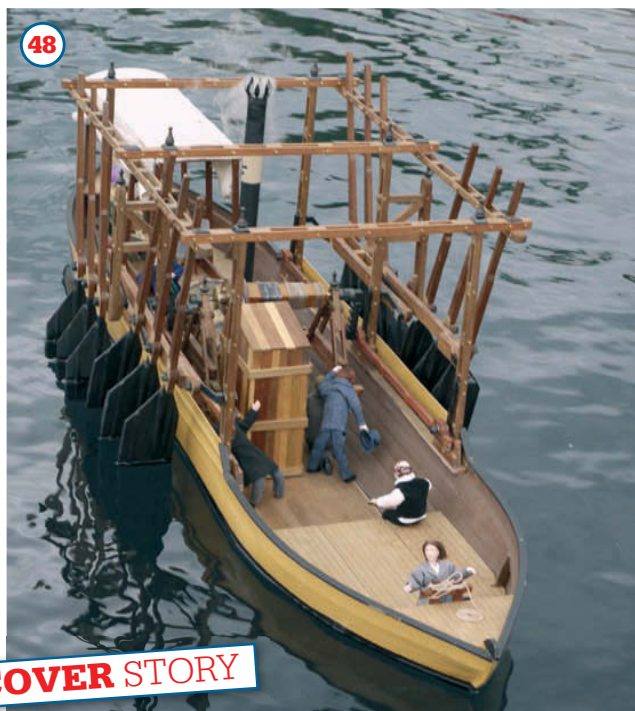
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CONTENTS

SEPTEMBER 2013 – ISSUE 318

48



COVER STORY

Michael J Sheppard, with his long history of rowed and paddled models, saw an article on the first American powered craft and just had to have a go at building a working model. Research yielded only a limited amount of information and so he and his friends had a real challenge in sorting the power mechanisms. The final product is a boat with a real WOW factor! As soon as it is on the pond people gather, mesmerised by the complex gyrations of the 12 long oars.

Regulars

- 5 MESSAGE FROM THE BRIDGE**
The editor gives some fire warnings and introduces this edition
- 6 MASTHEAD**
Some of the latest Maritime news
- 8 DIARY DATES**
Events for this month
- 10 WATERLINES**
Displaying models in dock construction
- 14 PLASTIC KIT SCENE**
New and re-released plastic kit models
- 16 VINTAGE CHATTER**
Looking back at some of yesteryear's radios and models – **NEW SERIES**
- 18 AIRWAVES**
Alan responds to some of his readers' questions
- 20 CHANDLERY**
New items of hardware recently released
- 22 SCALE SCENE**
Ian details an easy way to construct ships' ladders

24 LIVEWIRES

Reports on the MPBA Nationals and an update on the SWAMBC series

30 MEETING POINT

Reports of events held over the past few months

74 COMING NEXT MONTH

Some of the articles being prepared for the October edition

Features

36 TROOP CARRYING GUNBOAT

Pete Danks describes the development of simple rowing gunboats in use in the late 1700s

42 MMI VISITS DOSSIN GREAT LAKES MUSEUM

A shining pearl: The Dossin Great Lakes Museum of Detroit

46 INTERCEPTOR

A novel and ingenious method of fishing using an R/C boat!

48 THE BEAST

Could this be the first mechanically powered boat?

52 LUFTWAFFE FLIGHT OPERATIONS BOAT MARS

The build and history of a fast attack craft

58 ANNALIE

A Traditional Pond Yacht

64 WAVERTREE

The history of Southampton's Iron Windjammer

52



58



MESSAGE FROM THE BRIDGE

EDITORIAL CONTACT



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

Prospective contributors can email or write for a copy of the MMI Notes for Contributors via Traplet Publications Ltd.

Any other Editorial queries can be made by telephone to 01749 347172 during normal office hours.

GREETINGS ALL,

In my dim and distant past I served for a number of years as a retained firefighter in Somerset and my ears always prick up if I hear of any fire related issues, especially if they concern me and more importantly my hobby. I recently had an email from a fellow ex-firefighter and maritime modeller with an attached technical fire safety document about the storage of disused electrical cells and batteries. Here in the UK in 2009 it was made law that the disposal of waste batteries and accumulators should be managed and disposed of through an approved contractor. In the past many batteries were disposed with ordinary household rubbish and ended up in landfill with all the nasty metals and chemicals that could affect the environment. Since 2009 all retailers who sell batteries must provide a process of disposing of used batteries and accumulators. Perhaps like me, and other modellers in the workshop (and home), I collect my used batteries, alkaline, NiCads, SLA's etc. in a container and when full I will take it to an approved disposal point. The document my fellow ex-firefighter colleague showed me made reference to the potential major fire hazard of a container with a mixture of cells and batteries with different metals (some possibly leaking chemicals!) and also some with charge left in them. Hence the message of the month is NOT to store waste batteries and cells in one place. Take them to an approved recycling point as soon as possible and do not store them!

With the advent of Internet communication and emails the number

of posted letters received at the MMI PO Box 4239 address has virtually disappeared and will be closed down. If you wish to contact the editorial team by post please use the main Traplet HQ postal address, i.e. MMI Editor, Traplet Publications Ltd, Traplet House, Pendragon Close, Malvern, Worcestershire, WR14 1GA.

Following an article in the June edition of MMI under Airwaves we covered some of the old radio and escapements used in controlling models. This has created a lot of interest with readers. Starting this month there will be a regular series of articles under the title 'Vintage Chatter'. This will cover many of the older radio sets, controls and some of the models will be described. This should bring back many memories to the more 'mature' readers and perhaps give an insight to the younger readers about the development and history of our hobby. Therefore I welcome our new contributor David Wiggins to MMI.

Talking of vintage models, in this issue is an article on the build of The Beast, reputedly one of the first mechanically propelled craft and the build of a 1700's gunboat. We come a bit more up to date with the build of a Luftwaffe Flight Operations Boat MARS. If you are on holiday (or even a local) the report on the Canadian Dossin Great Lakes Museum should give plenty of inspiration for the next build project.

Have a good month and if you are on holiday at the Holiday Resort Unity Model and Hobbies Break from the 2nd to 9th September in Blean, Somerset, I am sure we will meet! **MMI**

Barrie Stevens

CHECK OUT
PAGE 73 FOR
OUR LATEST
SUBSCRIPTION
DEALS



**Editor's
Picture of
the Month:**
*How NOT to
store waste
batteries
and cells – a
potential
fire hazard!
I hold my
hand up,
this WAS
the Editor's
collection*

MARINE
modelling INTERNATIONAL

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MASTHEAD

LATEST MARITIME NEWS

DEANS MARINE OPEN DAYS SEPTEMBER 13-14-15 2013

One of the few FREE events of the year, visitors can expect to see other marine traders, conducted tours around the factory, view some of the new kits being planned for 2014, demonstrations of model making, with an on-site test pond where many models will be demonstrated. There will be local model boat clubs and visiting clubs from various parts of the country, and there are clubs booked in from Holland, Belgium and Germany attending this year. All proceeds will be to local charities. As camping/caravans are limited it would be appreciated if visitors could book first. Please send an SAE with 2 x 1st class stamps for full information of the event, location map and accommodation. See our website www.deansmarine.co.uk for pictures from our last shows.

INTERNATIONAL MODEL BOAT SHOW

This very popular show is again taking place at the Warwickshire Exhibition Centre (near Leamington Spa) from 8th to 10th November. With many traders in attendance this show is very popular with individual modellers and clubs and is the largest end of year show in the UK.

Around 30 clubs and societies will attend the exhibition with some of the finest marine models on show. Organisers are delighted that new clubs Manx Model Boat Club, West Wales Model Boat Club, Bournville Model Boat Club, Happy Hobby Modellers and The Air Water Land Model Group will be joining returning favourites at this year's show.

All clubs will have the chance to win the prestigious Marine Modelling International Society Shield, as voted for by the clubs and societies themselves, which will again be awarded to the best club display in the show. The 2012 winners were King Lear Model Boat Club.

For further details visit www.modelboatshow.co.uk or call 01926614101

NATIONAL MARITIME MUSEUM, CORNWALL

Exhibition – From the Loft Floor, 16th Sept-13th January '14

A stunning exhibition of illustrations by local artist Anna Cattermole, documenting the work of Luke Powell of Working Sail, who specialises in building traditional wooden pilot cutters. This exhibition provides a unique insight into the construction of these beautiful vessels, which plied their trade around Cornwall and the Isles of Scilly during the latter parts of the 19th century.

Anna's reportage drawings, produced on location in the boatyard, record the traditional methods and materials used and the skills and knowledge of those involved. This work is also supported by a display of traditional tools, models and documentary film footage.



PSP SOUTHAMPTON BOAT SHOW – 13TH-22ND SEPTEMBER

This well established show in the full size pleasure boating calendar has many exhibits of interests to the maritime modeller, including many ideas for new model build projects. This year fifteen members from the Wooden Boatbuilders' Trade Association (WBTA) will be demonstrating traditional and

modern full size boat building methods when they will be building two dinghies.

For further details of the show visit

www.southamptonboatshow.com

AMERANG/RIPMAX PRESS RELEASE

As many MMI readers may be aware, Amerang and Modelzone recently went into administration. Nick Moss, Managing Director of Ripmax announced that his Company – UMC Ltd (the owners of Ripmax) – had purchased Amerang on Monday the 15th July.

He said that although a considerable amount of work is still to be done and certain rationalisation is required, Amerang will begin trading again very shortly. Amerang's stock is being consolidated centrally to Ripmax's extensive Enfield warehouses where trade customer despatches will be made.

The long-term plan is to merge the two companies and operate from Ripmax's Enfield HQ, while retaining an Amerang sales office in Sussex.

This is a very exciting development for Ripmax as it will enable the Company to move into new areas of the market and build on Amerang's strength in die cast, licensed film, TV and comic collectables plus plastic kits, as well as their impressive range of radio control items. Of course, Ripmax products will now be available to Amerang customers and Amerang products to Ripmax customers, offering huge growth potential.

Ripmax aim to minimise the inevitable disruption this change brings to ensure that your favourite Amerang products are still available from your local model, toy and comic book outlet.

LOGIC RC/GRAUPNER SJ PRESS RELEASE

Logic RC is extremely pleased to announce their appointment as the exclusive distributor for Graupner SJ in the UK and Ireland.

The former Graupner GmbH manufacturing and distribution company in Germany, which was founded 83 years ago, has recently been acquired by their former principal supplier SJ Incorporated, who manufactures the extremely successful HoTT radio systems, as well as chargers and other RC electronic products.

The company has been re-launched as Graupner SJ and they are extending their distribution network globally with distribution in the UK, Germany, US, South Korea, China and Australia. The leadership team at the new Graupner SJ Company are looking forward to driving the business from a very positive and extremely strong position, presenting high quality and innovative products at competitive pricing whilst refining the current range and using their specialized knowledge in development of new and exciting products.

Andrew Nicholson from Logic RC said:

"We are very proud to be appointed as the exclusive UK distributor for Graupner SJ, adding their fantastic range to our growing product portfolio. Graupner has been a well-known and highly regarded brand in Europe for over 80 years and now the company has been acquired by the electronics company SJ; Graupner SJ is looking forward to huge global growth over the coming years. Their most innovative products include the new HoTT radio systems, which have already been established as one of the leading radio brands in Europe in only a couple of years. These systems have some amazing features and include full range telemetry, giving the user live data directly from their model that can be displayed on the screen and read out using the smart voice system. We haven't seen much of the HoTT brand in the UK yet, but we will be working hard to change that and you will be seeing and hearing a lot more about HoTT in the future."

These high-tech radio systems are only part of the story though, as the Graupner SJ range also includes aircraft, boats, cars and electronics, together with a huge range of accessories, all helping to make Logic RC a diverse distributor, covering all of your modelling needs."

Initial stocks are planned to arrive towards the end of July,

although Graupner SJ have warned that it is going to take a number of months to establish good stock levels, following the break in the supply chain over the period of the acquisition. However, with regular weekly deliveries from Germany, any product shortages will be filled as quickly as possible.

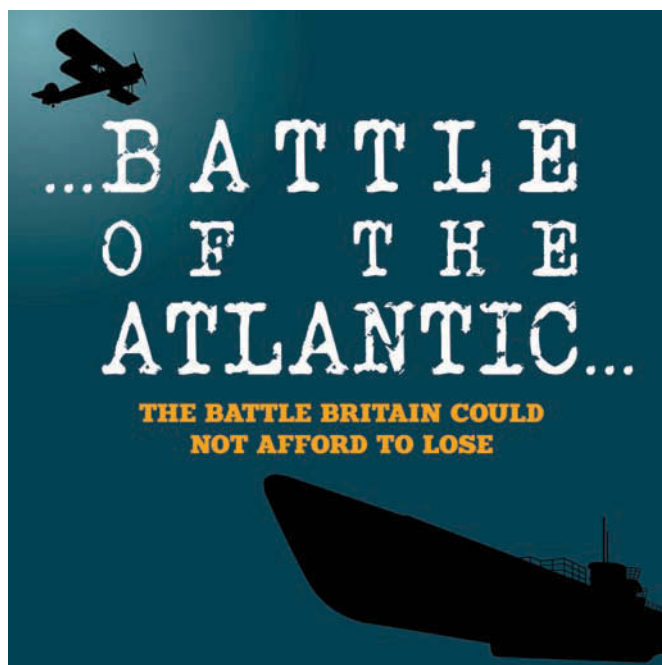
For more information and to see the full Graupner SJ product range, please visit www.LogicRC.com

All images for Graupner can be found at <http://www.logicrc.com/press/graupner>

BATTLE OF THE ATLANTIC EXHIBITION OPENS AT FLEET AIR ARM MUSEUM

A new permanent exhibition telling the story of the Battle of the Atlantic has opened at the Fleet Air Arm Museum at Yeovilton in Somerset. Termed as 'The Battle Britain Could Not Afford to Lose' the exhibition, which opened on 11th July, explains how vital this convoy link was between America and Britain along which essential supplies were transported. If the Germans had succeeded in breaking this supply route other campaigns in Italy, North Africa and indeed D-Day could not have taken place. The exhibition has three full size aircraft of the type used to provide air cover in the Atlantic along with many fascinating artefacts including personal documents such as diaries. A full sized U-Boat conning tower has been specially constructed for the exhibition and models of escort aircraft carriers compliment the display. The personal accounts tell of the suffering and the successes during periods of the battle, which was fought on the surface, in the air and below the waves. It was a campaign which lasted the entire war, and this new exhibition takes visitors through all aspects using archive film, photographs and displays of equipment. Modellers and wargamers alike will be able to draw a lot of inspiration and gain much research material from this display.

Full details of the exhibition along with opening times can be found on the museum's website at: www.fleetairarm.com



SAD LOSS

It is with great regret and sadness to announce the very untimely passing away of model maker Andrew Wheatley aged 55 after a short illness. Andy was very well known with his very detailed, museum quality dive support vessel Toisa Polaris, which has won many awards at shows and featured on the front cover of MMI in September 2008. Andy's love of model ships started after he served 9 years with the Royal Navy. He had also built many other models including HMS Swindon, the location of his home town. Our condolences are extended to his wife and family. **MMI**

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DIARY DATES

WHAT'S ON, WHERE AND WHEN?

Event Dates for your Diary

If you know of any confirmed Maritime related events and you would like us to include them please let us know either by email: mmi@traplet.com or post to MMI Editor, Traplet Publications Ltd, Traplet House, Pendragon Close, Malvern, Worcestershire, WR14 1GA, England. We need the Date, Venue, Organiser/who to contact and crucially an Email/Website address and/or a telephone number, and postcode would be useful for Sat Nav's. A full listing of events for the year can be found on

www.marinemodelmagazine.com/diarydates we do need at least 8 weeks notice to include in the printed magazine.

SEPTEMBER 2013 MMI DIARY DATES

SEPTEMBER 1

Model Ships Rally

Ramsgate Viking MBC. The Boating Pool, Westcliffe Leisure Park, Royal Esplanade, Ramsgate. This an open event with cafe and toilet facilities and display tables provided. Contact Phil Allen, Tel: 01843 223230

SEPTEMBER 1

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. www.dolphinmodelboatclub.com/ Email: dolphinmodelboatclub@live.co.uk Margaret, Tel: 01689 834896

SEPTEMBER 1

Glasgow Richmond MBC, End of Season Charity Show

Richmond Park, Glasgow (Opposite Shawfield Stadium) 11 am - 4 pm. Dozens of boats on display, Hands-on boats, for the kids, Harbour system to navigate, bring and buy etc. Come along and join in the fun. All enquiries to the club secretary: Colin Miller, Mobile: 07719568539 or club email: glasgow.richmond@gmail.com Directions on the club website: www.glasgow.richmondmbc.co.uk

SEPTEMBER 1

Camborne Pond Hoppers MBC Open Day

Coronation Boating Lake, Helston. 10 am - 4.30 pm. Free admission. Come and watch the boats sailing on the lake. All welcome. Contact G Copeland, Tel: 0129 711620. Email: marycopeland1947@hotmail.co.uk

SEPTEMBER 2 to 9

Unity Model & Hobby Break, Brean Sands, Somerset

Catering for planes, scale boats, yachts, helicopters. For further information/booking contact: www.hru.co.uk Tel: 01278 751235. Modellers activities contact Barrie Stevens, Tel: 01749 343017

SEPTEMBER 7

Solent RCMBC Annual Club Exhibition

All Saints Church Hall, Greenbanks Close, Milford On Sea, Hampshire, SO41 0SQ. 10 am until 4 pm proceeds in aid of RNLI and Hampshire Air Ambulance, entry by charity donation, Refreshments available. For more information Email: david.mcnairtaylor@sky.com

SEPTEMBER 7

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 none club members. Sorry no I/C or petrol boats. There is off road parking on club days but no food or toilet facilities. www.dolphinmodelboatclub.com/ Email: dolphinmodelboatclub@live.co.uk Margaret, Tel: 01689 834896

SEPTEMBER 7/8

Confederation Marine Modellers of Hamilton, Canada

50th Anniversary Model Boat Show and Competition at the Hamilton Museum of Steam and Technology, 900 Woodward Avenue, Hamilton, Ontario. Static/operational boats. Saturday 10 am to 5 pm, Sunday 10 am to 4 pm. A judged competition for modellers who wish to participate. Contact Doug Grinyer (douggrinyer@cogeco.ca) for more information concerning registration and judging details

SEPTEMBER 8

Kirklees Model Boat Club Naval Day

Wilton Park Bradford Road, Birstall, Batley WF17 8JH. 10 am to 4 pm. Free parking and refreshments. Static and on the water displays. Event open to other types of models. Contact Stan on 0113 2675790 after 6 pm or stan@kirkleesmodelboatclub.org.uk for further information

SEPTEMBER 8

Chantry Model Boat Club - Comedy Towing Day

Lake 7, Town Square Crescent, Bluewater Retail Centre, Greenhithe, Kent, DA9 9SF. Event times are normally from 9 am at the lakeside, at £2 per day for non-club members. Contact Martin Oliver, email: martin.999@hotmail.co.uk The club website is: www.chantrymodelboatclub.co.uk

SEPTEMBER 8

The Fireboat Funday/Vintage Model Boat Day

King Lear Model Boat Club will be hosting an All Vintage Model Boaters informal and fun event at Watermead Country Park, Leicestershire, LE7 1PD. There is a £2.50 entrance fee payable to an unmanned machine. Further information can be obtained from Graham Taylor, Tel: 0116 2613959, by email at kinglearmbc@ntlworld.com or website at www.kinglearmodelboatclub.co.uk

SEPTEMBER 8

Watermead Aylesbury Model Boat Club, Regatta

Model boat clubs/enthusiasts/public are invited to this event. 10 am - 4.30 pm. Sat Nav HP19 0FU. Models by Design trader plus others TBC, free parking, toilet facilities for club use, good access to the lake. Riviera restaurant, Tel: 01296 399699 to book in advance. Sorry no I/C local by laws. Contact Lee, Email: l.dickinson602@btinternet.com Club website: www.watermeadmbc.wordpress.com

SEPTEMBER 22

Tug Towing for MPBA Shield - Also Leisure Sailing

Balne Moor MBC, Kingfisher Pond. Start 10.30 am. Refreshments. Contact Peter Newton (Sec), Tel: 01977 791825

SEPTEMBER 22

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. www.dolphinmodelboatclub.com/ Email: dolphinmodelboatclub@live.co.uk Margaret, Tel: 01689 834896

SEPTEMBER 22

Chantry Model Boat Club - Grey Navy Day

Lake 7, Town Square Crescent, Bluewater Retail Centre, Greenhithe, Kent, DA9 9SF. Event times are normally from 9 am at the lakeside, at £2 per day for non-club members. Contact Martin

Oliver, email: martin.999@hotmail.co.uk The club website is: www.chantrymodelboatclub.co.uk

SEPTEMBER 22

Edinburgh Model Boat Club

Fast Electric and I/C. Inverleith Pond. All are welcome, start time 12 pm. Contact david.jack5@btpenworld.com

SEPTEMBER 22

Burwood Spring Festival, Sydney Australia

The St George Model Boat Club as a key exhibitor will be exhibiting and sailing at the Burwood Festival, held in Burwood Park. Burwood Festival is the largest annual community event in Sydney's Inner



ABOVE: Yacht racing at the Unity Model and Hobbies Break at Brean Sands in Somerset last year

West. Fellow modellers and those interested in radio control boats are welcome to come and say hello. Full details can be found at the club's website: www.stgmbc.org.au or www.burwoodfestival.com.au

SEPTEMBER 28/29

St Albans & District Model Engineering Society Annual Exhibition

We have a new venue this year at Townsend C of E School, High Oaks, St Albans AL3 6DR. The times are 10 am until 5 pm on both days. Contact Alan Holt: a.holt446@btinternet.com Tel: 01583 832446 or our Secretary Roy Verden: roy.verden@gmail.com Tel: 01923 220590

SEPTEMBER 29

Edinburgh Model Boat Club

End of season. Inverleith Pond. All are welcome, start time 12 pm. Contact david.jack5@btpenworld.com

SEPTEMBER 29

Bury Model Boat Club Open day with Club 500 Races

You can find us on 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. Contact Peter, email PeterBMMMS@gmail.com Website: www.bmmmSUK.yolasite.com

SEPTEMBER 29

Mutual Model Boats Club's Bring & Buy Sale

Crimble Croft Community Centre, Aspinall Street, Heywood, Lancashire OL10 4HL The site is accessible to all and full facilities are available. Doors open 9.30 am Contact the events secretary Kevan Winward, Tel 01706 868616 Mobile: 07803975089 or email: chairman@mutualmodelboatsociety.org.uk **MMI**

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Dumas 17" Ace "racing sloop" builders kit with fitting, nylon sails, and keel. The hull is mahogany, balsa and ply, and looks incredible when varnished! Designed for free sailing. £29.95



Aeronaut Bella 810mm semi-scale builders kit of a 1950s day sailing yacht with laser cut mahogany and ply parts £162.95

WATERLINES

DISPLAYING MODELS: KELVIN TURNS TO DOCK CONSTRUCTION

AUTHOR: KELVIN HOLMES  GREAT BRITAIN
khwaterlines@btinternet.com

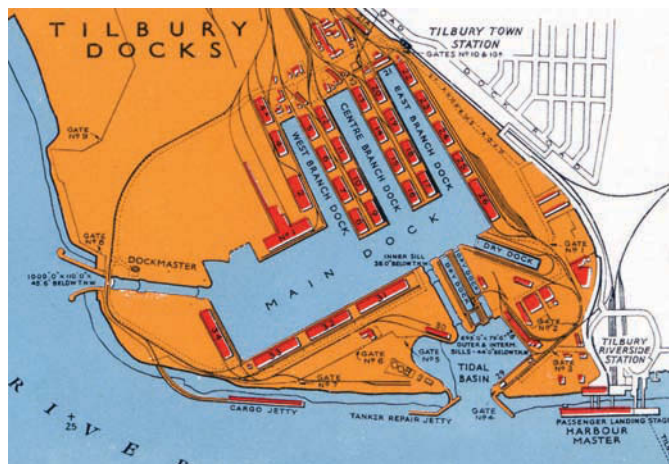
Space permitting, there is a lot to be said for displaying ship models in a dockside setting. Having almost accidentally built the master for Mountford's Southampton floating drydock the next step was to create that area of the docks where the drydock was located. Such projects can of course remain as unique scratch-builds rather than go for casting and the purpose of this article is to illustrate some potential projects and describe the building techniques used which actually are quite simple. Assuming the diorama is to blend in with existing harbour parts from, for example, Triang or Skytrex/Mercator, the first decision is the height above sea level of the jetties, which needs to be 6 mm for compatibility with Triang or 4 mm to match the Mercator/Skytrex pieces. Skytrex did also produce some Triang size jetties in plastic and these, plus the original Mercator sections, also in plastic, can be butchered to edge our new jetties (as illustrated). In building the new Southampton Trafalgar dock model for Mountford, Skytrex were approached and generously gave their agreement to re-use Mercator jetty edges in the new product. To provide the extra strength needed for casting Mountford added an extra layer beneath giving a final jetty height of 6 mm matching the Triang pieces.

Four dock layouts – two warship and two merchant – are illustrated here, but the chosen subject is a personal matter, indeed



Southampton docks in 1954 (A Survey of Southampton and its Region, 1964)

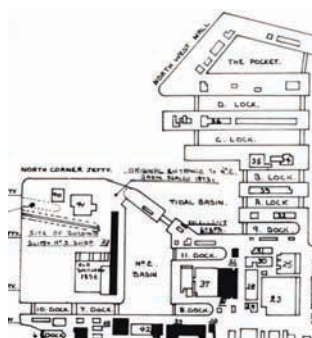
an entirely fictitious harbour may be built such as the famous Portsmouth often featured on the 'Dockside' chat-room. Space perhaps will be the main constraint. The inclusion of a graving dock to display a full-hulled model requires the whole diorama to be mounted on a raised platform such that the dock can be sunk in (see illustration). Alternatively a graving dock can be depicted in a flooded condition, which does avoid the need for finding a full-hulled model. In fact construction of a lower hull need not be too



Tilbury Docks; the dock sizes given indicate the scale (Port of London Official handbook, circa 1962)



Singapore Naval Base 1968; lower left is the NAAFI shop where I bought a Rolling Stones EP in 1965



Portsmouth (Great Docks of Portsmouth Dockyard, Portsmouth Royal Dockyard Historical Society)

– AFD IX (855' x 172', capacity 55,000 tons) to Singapore in 1928 – this was scuttled in 1942 and later raised and repaired by the Japanese. The USAAF bombed the dock in 1945 and it was scrapped in 1948.

The jetty surfaces are best made from sheets of plain white plasticard. Assuming a 4 mm height, the framework of the jetties should be made from plastic strip so, for example, using Evergreen (EV) 188 gives a height of 3.2 mm on which can be laid 1 mm card for a combined height of 4.2 mm which sands down easily to 4 mm.

To build a flooded graving dock start with EV177 which gives a 4 mm height then internally add 0.75 mm wide progressively deeper strips from 3.2 mm (EV136), to 2.5 mm (EV135), then 2 mm (EV134) and lastly 1.5 mm (EV133) for the 'altar' stepped effect. For smaller docks requiring narrower (0.5 mm) widths use EV126 to 123 or indeed wider (1 mm) EV146 to 143. For some reason it is often difficult to keep those drydock walls exactly parallel, sometimes necessitating the insertion of a dock gate. If a graving dock is to be included it is better to start with the dock then add the framework around it (as illustrated).

For edging jetties the easiest way is to use EV V-Groove 2040 with 3.2 mm spacing which gives the effect of large concrete blocks; for older style docks you can, as already mentioned, re-use the sides of Mercator docks (sacrilege maybe) or build your own. It is recommended that the size of sections be limited to about A4, otherwise it can be difficult to keep the whole thing flat. Heavy buildings can assist here and may be scratch-built or commercial product; certainly for cranes the latter is the easier option. For roofing try an EV V-Groove 2040 with 1 mm spacing which gives a tiled effect (other narrower and wider spacings are available).

Most good model shops stock EV products or try online, for example: www.relishmodels.co.uk

THE SOUTHAMPTON DIORAMA

This diorama forms the western section of the Old Docks from Berths 51 to 49 centred around Drydock No. 6 (the Trafalgar Dock). Work on the drydock commenced in 1900 and the facility opened by the Marquis of Winchester on 21st October 1905. The first ship to dock was Union Castle's Dunluce Castle on 17th November. The drydock was enlarged in 1911-13 and further modified in 1922 with a 'notch' which just about permitted Cunard's Berengaria (909 ft) to fit. To accommodate White Star's Majestic (956 ft) and the even larger ships being built a floating drydock was ordered from Armstrong Whitworth in Newcastle-upon-Tyne; arriving in Southampton on 21st April 1924 she was located at Berth 50 where four reinforced concrete dolphins had been installed. The two cranes were not permanently fitted but were borrowed from other docks and installed using the 150 ton floating crane. The dock was sold to the Admiralty in 1939 (becoming AFD XI) departing Southampton in 1940 leaving behind the four Dolphins, which formed part of BOAC's Marine Air Terminal from April 1948 returning from their wartime base at Poole (having previously been at Southampton berth 107/08). BOAC's services were abruptly terminated in November 1950 with existing local

operator Aquila Airways taking over. When Aquila's G-ANWI Awateri, a Short S45 Solent, departed on 26th September 1958 for Madeira she was the final passenger carrying flying boat from Southampton.

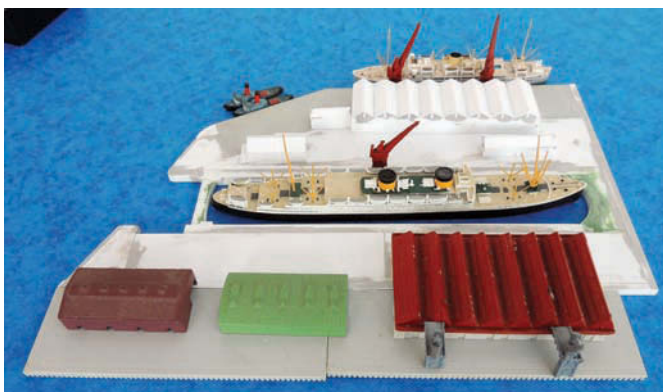
The four dolphins are still in situ today as the entrance to the Trafalgar dock. If you wish to extend the diorama then moving east was the White Star Dock, opened in 1911 (re-named Ocean Dock in 1922). The entire Eastern Docks would be a wonderful, if large, project requiring a baseboard approximately 5 ft by 3 ft. Present at May's Kassel meeting was an enthusiast from Switzerland who is attempting just this for a 1950s scenario and pictures are promised – can't wait! **MMI**



Framework for Southampton docks 1 to 4 with all drydocks in place



Docks 1 – 4 with jetty surfaces and buildings added plus ships to help with focussing



Prince of Wales dock with Triang and Skytrex buildings; White Star's Georgica is docked



1/700 graving dock by Skywave sunk into a baseboard with Atlas full-hulled HMS Royal Oak and Argonaut HMS Ramilles



Under construction here is AFD IX which went to Singapore; HMS Prince of Wales is docked



Southampton Docks on 5th November 1931 (RAF Museum)



Mountford's Trafalgar dock with Berengaria and at Berth 51 Carpathia; Aquitania is in the floating drydock (more baseboards are needed)



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Scharhorn: Steam yacht 1:35 Length: 1140mm.....	£311.55
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In addition to this we stock a wide range of model Boat fittings, Radios Control Systems , Electric motors, and Steam plants, plus many other accessories for model boats.



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Nelson's Flagship - 1:150 Scale -
MV56 Ref: 7499

The first rank vessel

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It was in service for a long time under the command of famous admirals. Its name was indissolubly tied to Nelson's in the battle of Trafalgar in 1805. Large use has been made of precious wood moulded according to the form requested by the original. The sheathing of the bottom of the hull with plates reflects the constructive schemes of the original

Scale 1:150
Length 654mm
Height 475mm

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* Beware suppliers who quote MOSFET ratings as continuous controller rating!

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- ★ "Autoset" neutral at any stick position.
- ★ Low loss Power MOSFET switching. (5.8 milli-ohm)
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- ★ Reversed battery protection.
- ★ Size: 73 mm x 51 mm x 26 mm.

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- ★ Low loss Power MOSFET switching. (2.3 milli-ohm)
- ★ Size: 73 mm (ex. mounting) x 51 mm x 22 mm.

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We offer a small range of motors specially chosen for use in model boats. In addition we provide a leaflet with full details showing you what current to expect with the battery and propeller you intend to use. (Ask for your free copy)

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High Power Medium Speed, 6 to 8V £8.75

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Motor Type 653-16 (Fast patrol etc.)

High Power Medium Speed, 6 to 12V £17.95

6V, Power 30W, max. prop. 65 mm 'P'
12V, Power 70W, max. prop. 40 mm 'P'

Motor Type 543-24 (Modern scale)

We regret that the original 543-23 is no longer manufactured but is replaced by a specially wound 543-24 with similar speed and ratings.

Medium speed, 6 to 12V £14.75

6 V, Power 15W, max. prop. 40 mm 'P'
12 V, Power 35W, max. prop. 30 mm 'P'

Motor Type 543-12 (Traditional scale)

Very low drain, 6 to 12V £17.45

6 V, Power 7W, max. prop. 65 mm 'P'
12 V, Power 18W, max. prop. 40 mm 'P'

Motor Type 365-14 (Small scale)

Very low drain, 6 to 12V £5.15

6 V, Power 2W, max. prop. 55 mm 'P'
12V, Power 7W, max. prop. 30 mm 'P'

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Please note. We are happy to give advice by the old fashioned telephone but can only answer the simplest queries by email. Invariably we need more information about your model and what your preferences are. All too often there isn't a simple answer and a discussion is needed to arrive at the best solution for your case.

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PLASTIC KIT SCENE

THIS MONTH ROBIN HAS A VARIED SELECTION FROM SEVERAL MAKERS

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



Airfix German S-Boat
(courtesy Airfix)

AIRFIX

German S-Boat

Model No.: A10280

Scale: 1/72

Length: 44.8 cm

Parts: 290

The German S-Boat was a very fast and deadly craft that was used for attacking allied shipping mainly in the English Channel and the Baltic areas where they sank many ships. Several were used to attack the allied invasion forces on D-Day, but one of their deadly attacks was just before when they surprised several landing ships that were training for the landings in an area off the South coast of England. The result was the loss of over 600 American soldiers and two transport ships, this attack was kept secret until after the war.

This is a re-release of a well-detailed model that comes complete with several crew figures. I built an earlier release of this kit several years ago and converted it to radio control using small motors and micro components, so it is nice to see this kit available again.

Full details of this kit and all Airfix models can be found at:

www.airfix.com



Well-reproduced stern gallery
(courtesy Revell)

REVELL

Pirate Ship

Model No.: 05605

Scale: 1/72

Length: 55 cm

Parts: 896

This model is similar to the ships seen in the blockbuster film series 'Pirates of the Caribbean'. The detail of this model is very good; it has a huge parts count of 896. This includes small rigging blocks to reproduce the look of



Revell detailed Pirate Ship
(courtesy Revell)

the ship; the rigging really brings the detail and quality of the model to life. The stern gallery is well-detailed and all other parts such as cannons and deck fittings are crisply moulded. For modellers who love old sailing ships then this is a must have model as it could represent many ships of the 18th century.

MS Trollfjord

Model No.: 05815

Scale: 1/1200

Length: 11.3 cm

Parts: 40

A lovely little model of the Norwegian ship Trollfjord operated by the Hurtigruten Mail Boat Line who are celebrating their 120th anniversary this year (2013). She is one of their most modern ships capable of carrying 822 passengers. She operates around the Norwegian coast and fjords with the passengers enjoying her facilities and some of the most beautiful views of the coast from her decks.



The MS Trollfjord

Fairey Gannet

T.5 Aircraft

Model No.: 04845

Scale: 1/72

Wingspan: 23 cm

Length: 18.7 cm

Parts: 110

This may seem different including an aircraft in a ship magazine but this one was developed and built for the Royal Navy Fleet Air Arm, and operated from aircraft carriers. The reason I have included it now is the real aircraft XT752 has been fully restored by a group of enthusiasts in America. It is now flying at air shows in the States and is to be seen in the UK sometime this year. It is the only fully operational and flying Fairy Gannet in the world. So if you have an interest in this type of aircraft make sure you see it at one of these shows. The model is well detailed and has been produced by Revell in collaboration with the owner Shannan Hendricks. Complete details of the real flying aircraft can be found on its dedicated website at: www.faireygannetxt752.com

Revell model kits are available from all good toy and model retailers. For further information visit www.revell.eu or email ukbranch@revell.de



Revell Fairey Gannet
(courtesy Revell)

BLUE RIDGE MODELS

SMS Dresden 1914

Model No.: BRM70047

Scale: 1/700

Length: 17.3 cm

Parts: 31 resin plus etched fret and wooden decking



Blue Ridge model of SMS Dresden



Very fine detailed moulding of the Dresden

The kit is from their heritage range, this is the first time I have seen a kit from Blue Ridge and I must say I am very impressed with the quality and detail of all parts. The hull and superstructure is moulded in one piece and is cast in resin with the funnels, guns, ship's boats and other parts also cast in resin. The detail of all the resin parts is very fine with crisply rendered detail. The photo-etched fret is extremely fine with intricate detail and the small self-adhesive wooden deck parts are very good. No masts are included with these are to be made from brass rod with a cutting list of sizes included with the instructions. I look forward to building this model as I am particularly fond of ships from this era, once I have built the review sample I will give details in a later article.

The Heritage range includes other ships from this period, full details of all Blue Ridge Models can be found at:

www.blueridgemodel.com or www.freetimehobbies.com

Many thanks to Brandon Lowe for supplying the review model.

TAMIYA

Here are details of two limited edition releases from this popular manufacturer from Japan.



Tamiya Pibber riverboat (courtesy Tamiya)

US Navy PBR31 Mk.II Patrol Boat River Pibber

Model No.: 89735

Scale: 1/35

Length: 28 cm

The Pibber was developed for use during the Vietnam War; with its shallow draft it could navigate

and patrol the inland waterways and rivers. It was a well-armed craft and was very manoeuvrable.

US Marine AAVP 7A1 Amphibious Assault Vehicle

Model No.: 89736

Scale: 1/35

Length: 22.2 cm



Tamiya AAVP 7A1 Amphibious Assault Vehicle (courtesy Tamiya)

These vehicles are used for landing troops straight ashore, as soon as it reaches the beach its tracks can take it straight into battle as an armoured troop carrier with a mounted turret, a heavy calibre machine gun and grenade launcher.

Both of these models come complete with submarine motors that clip beneath the model, this gives it forward movement and can be set so the model will turn in circles. I wonder if it could be possible for these submarine motors to be secured in some way so that a linkage through the bottom of the model could be attached to a servo and speed controller inside the hull so it could be radio controlled? This might be an idea for conversion in some way using micro servos and speed controllers!

Full details of these models and the complete Tamiya range can be found at: www.tamiya.com



Humbrol's new range of Enamel Washes

HUMBROL

Humbrol has now released ten Enamel Washes.

- AV0201 – Black
- AV0202 – White
- AV0203 – Dark Green
- AV0204 – Dark Grey
- AV0205 – Dark Brown
- AV0206 – Blue Grey
- AV0207 – Sand
- AV0208 – Dust
- AV0209 – Oil Stain
- AV0210 – Rust

All these washes can be used on Humbrol Enamel and Acrylic paints and come in 28 ml pots. Application is by brush and is dry in approx 20 minutes; brushes are cleaned in Enamel thinners, which can also be used to thin the wash if required.

These are ideal for weathering models of any type to create affects such as grime, dust, rust and many more where you want to create a lifelike appearance on your model.

Details can be found at: www.humbrol.com – you can also view demonstration videos at www.youtube.com/humbrol **MMI**

VINTAGE CHATTER! PART 1

LOOKING BACK AT SOME OF YESTERYEAR'S RADIOS AND MODELS

AUTHOR: DAVID WIGGINS  GREAT BRITAIN



The author aboard Waverley

GETTING TO KNOW ONE ANOTHER!

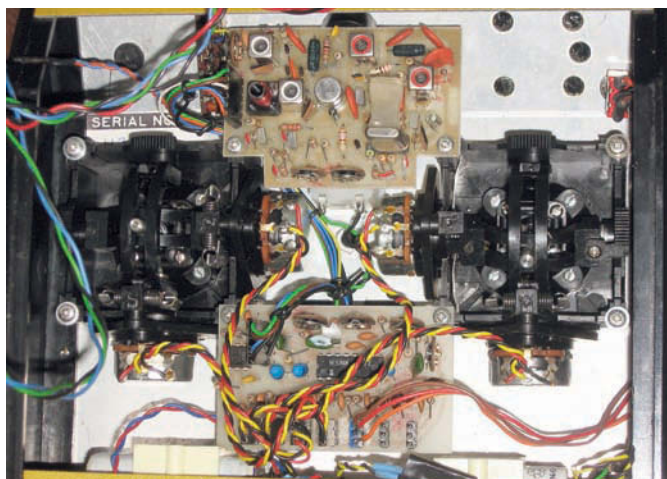
Hello there readers. One way or another I've been writing on the Vintage R/C topic for well over 20 years now but writing is not how I started out in life at all. Whilst starting a five year indentured apprenticeship in radio, television and electronic engineering during 1962/3 I quickly became interested in applying what I was learning to model making at first, briefly, with aircraft and then in boats. My first marine model was an Aerokit's Sea Series broads

cruiser fitted with an ex RAF electric motor and my very first, home built single valve (tube), single channel carrier wave radio unit built from designs published in books by F.J. Camm, Sommerhof, the IRCMS and by others. Since then and over a long lifetime in modelling and in professional electronics I have built, serviced and used just about every possible type and brand of radio control gear, electric motor and model engine so I'm pretty well equipped to advise collectors or vintage fans I think.

Rather than bore you all with detailed and profusely illustrated in-depth features I have agreed with the Editor that my new 'Vintage Chatter' series for MMI will contain brief overviews of what I regard as classic or collectable items from the past of marine modelling. A few words and a few pictures on a page in each issue in fact. Now and then I may include a mini feature on the boats that I specialise in researching and building nowadays – small, scratch-built models of Canadian classic launches – but it will be mainly about interesting hardware items from our past.

SKYLEADER OF CROYDON

I begin this month with a Skyleader radio transmitter built, here in England, during the 1980s by which time American and British R/C



A technician's view inside a Courier transmitter with the FM (frequency modulation) RF (radio frequency) panel at the top with its plug-in crystal and the PPM (pulse position modulation) digital encoder at the bottom. The old battery cells have been removed. Connectors are used to feed the control stick potentiometers – a rather unusual feature that makes upgrading 2 or 4-channel sets to the full 7 channels especially easy

manufacturers were fading under a Japanese onslaught of cheaply mass produced gear – an example of Skyleader's later Courier series designed to transmit on the – then new – 35 MHz NBFM (narrow band frequency modulation) aircraft allocation. This set is a 5-channel version in a conventional twin stick layout using sticks and other mechanical parts by SLM of Cheltenham – a firm that supplied many small British radio concerns of the era. Skyleader rather stood out I feel from the host of small British R/C concerns in that they had a factory based in Croydon when many other brands were being manufactured using 'home workers'.

Starting out with a 3+1 'digital' Skyleader progressed to a 4-channel 'full house', bronze cased outfit before bringing out their yellow vinyl cased SL and Clubman sets during the early '70s. The SL, a very similar design to the 1968 American Kraft Gold Medal, sold very well in Britain and established Stewart Uwins firm as one of the bigger players in the British R/C business – a position he built on with later sets like the SLX/TSX sets and, finally, with the model featured here which mimics the European 'horizontal tray' style used by large German concerns like Simprop and Graupner/Grundig.

The Clubman was a less expensive sports level radio that was a big seller to people like myself as it was offered in versions from 2 to 6 channels. One could, say, purchase a 2-channel Clubman for boating and upgrade it later with extra channels for flying when one had a bit more money – an appealing feature. All these sets were on 27 MHz then of course. There was also a simpler version called the Clubmate – a 2-channel radio made specifically for boaters.

SKYLEADER 'COURIER FM' OUTFIT

The radio as shown is still very much 'as purchased' during 2012. It is yet to be converted – most likely to 2.4 GHz – and fully overhauled for future reuse. The first two pictures I am using show the transmitter's general appearance and its 'guts' – a twin circuit board layout with plug-in interconnections using a combination of integrated circuits and discrete semiconductors. There is provision on the encoder circuit board to upgrade it to the full 7 channels. A previous owner has



The cosmetic appearance of Skyleader's updated set. Moving on (or back depending on one's opinion), the firm has incorporated moulded plastic end cheeks into a vinyl clad aluminium case. Chromium plated stick bezels give an upmarket look. Please note that the channel 5 (retract) switch is in the wrong position. It should be mounted on the right

thoughtfully removed the old NiCad cells so there is no corrosion for me to deal with – a lucky break for a service tech' and an unusual bonus in vintage R/C of any sort.

The other pair of pictures show the matching 35 MHz FM receiver and a sample servo. The servo is of a type unfamiliar to me I confess – I am, however, familiar with the earlier (British), Horizon and SRC-1 linear/rotary

The matching 7-channel Skyleader receiver is a conventional nylon cased single conversion Superhet' with I/C decoder and plug-in crystal and a revised (from earlier Skyleader receivers that is), connector block for feeding Skyleader '3 wire' servos

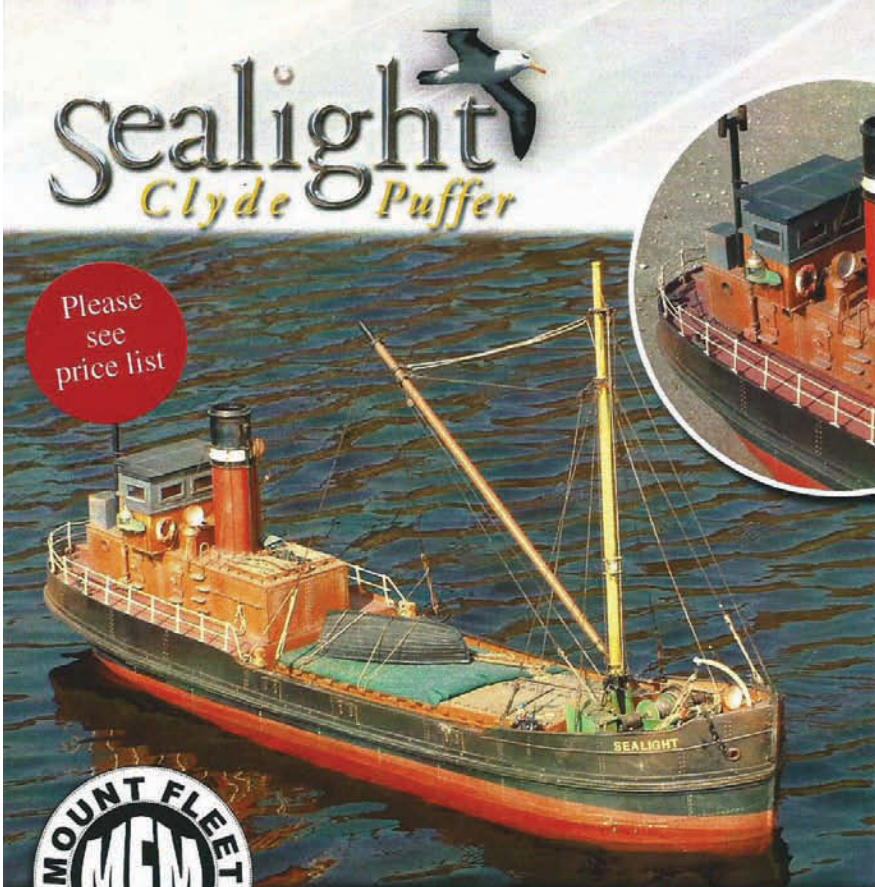


A sample servo

mechanics and the American built Logictrol MM3, Kraft KPS12 and 10 mechanics all used at different times by Skyleader with sets like the SL and Clubman. Finally, do please remember that one must never use 35 MHz radio in a boat. Modern 2.4 or vintage 40FM/27AM are all OK, but not 35 please. That's why I'll be converting this radio to 2.4 GHz later on.

Well that's it for now folks – next issue I'll be looking at some MUCH older British radio boat gear so, until then, 'bye for now'.

MMI



sealight
Clyde Puffer

Please
see
price list





Scale: 1:32 Length 0.A 32" Beam 8"
Suitable for Electric or Steam Power

Sealight is a scale model of a West Highland Coaster of that name. Built at Greenock in the 1930's she was lost in passage from Northern Ireland to Wales in 1963. Like all 'Puffers' of her era she would carry a variety of cargos and was of the larger type of vessel, being 86' in length. The kit enables the builder to produce the model as shown, the kit specification being similar to the 'Danny Boy', making it ideal for either steam or electric power.

As on the 'Danny Boy' the wheelhouse is completely fitted out, and the kit contains over 600 cast metal fittings.

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AIRWAVES

ALAN SHARES THE ANSWERS TO SOME READERS' QUESTIONS

AUTHOR: ALAN SENIOR  GREAT BRITAIN

airwaves@anola.net

**MIG 650 electric motor
from Puffin Models**



LOW RPM PROPULSION MOTORS

In the July 2013 Airwaves I lamented the lack of information on motor-propeller combinations suitable for model boats and the difficulties of finding low revving motors for scale models. It was great to hear from John Emms at Puffin Models

(www.puffinmodels.com) with helpful information, he says:

"I read your motors and gearboxes article in July '13 MMI with interest, not least because I thought boat power systems were sorted out years ago! We are relatively new to the boat market, but not new to electric power, and of course, as well as testing systems for my SWAMBC FE racing, we have started testing systems for scale boats. So, we have a LOT of systems on the shelf for faster scale boats – with experience of using them.

A system we have had running for over a year is a RCM-Pelikan Le Petit Charles (from the manufacturer of the original Thunder Tiger fishing boat range), is the Mega Mig 600 12V Boat (£11.95) running on a normal 6-cell Sub-C NiMH battery pack with a 3-blade 40 mm prop. Full power comes at 2 A, and would provide appropriate power for a model of twice its weight with a slightly larger prop. A convincing scale speed and wash comes at 1.2 A. Because the system uses no gearbox, the boat

is extremely quiet, and of course, there are no gearbox losses. You are more than welcome to have a motor to test for yourself. The current reading comes from the use of the Jeti Duplex radio system.

Another interesting motor that we stock is the Mega Mig 650 12V Boat with very low current on large props, even with 12 V. The £33.95 price tag may appear high, but again, the motor is extremely quiet, there are no gearbox losses, and the motor is a lower price than a high quality gearbox. Here is a website link to test figures on this page: <http://tinyurl.com/Airwaves-09-2013>

We also have a rapidly increasing range of boats and accessories on stock in the unit (15 minutes from the M4, and 15 minutes from the M5)."

If you have a model project in mind then I am sure John Emms will be able to help recommend a suitable motor from his stock. Helpful and knowledgeable dealers like John are gold dust when it comes to helping modellers; I look forward to hearing more from John on his tests.

The Mig 650 DC Brushed electric motor is designed for boat models with 7 - 16 NiMH cells or 2 - 4 LiPo cells, the recommended propeller is 40 - 60 mm, with current consumption up to 6 A.

VINTAGE R/C EQUIPMENT

In the June 2013 Airwaves I requested help for Robin Owen who is trying to restore an original 1950s model fitted with valve radio control equipment. An important point that reader Nick Wainscot of the Hinckley and Bosworth Model Boat Club has raised via email is that old valve radio transmitters will be illegal to actually switch on and operate these days. The problem is that in the 1950s only one person at a time could use the 27 MHz frequency, this was because the transmitters output a broad band of frequencies, unlike modern crystal controlled equipment, and thus if used in modern times these would interfere with other modellers on the band. In the past the broad band transmissions did not matter as there were so few users of the 27 MHz band, however these days the radio frequency bands are much more crowded and the regulations have changed accordingly.

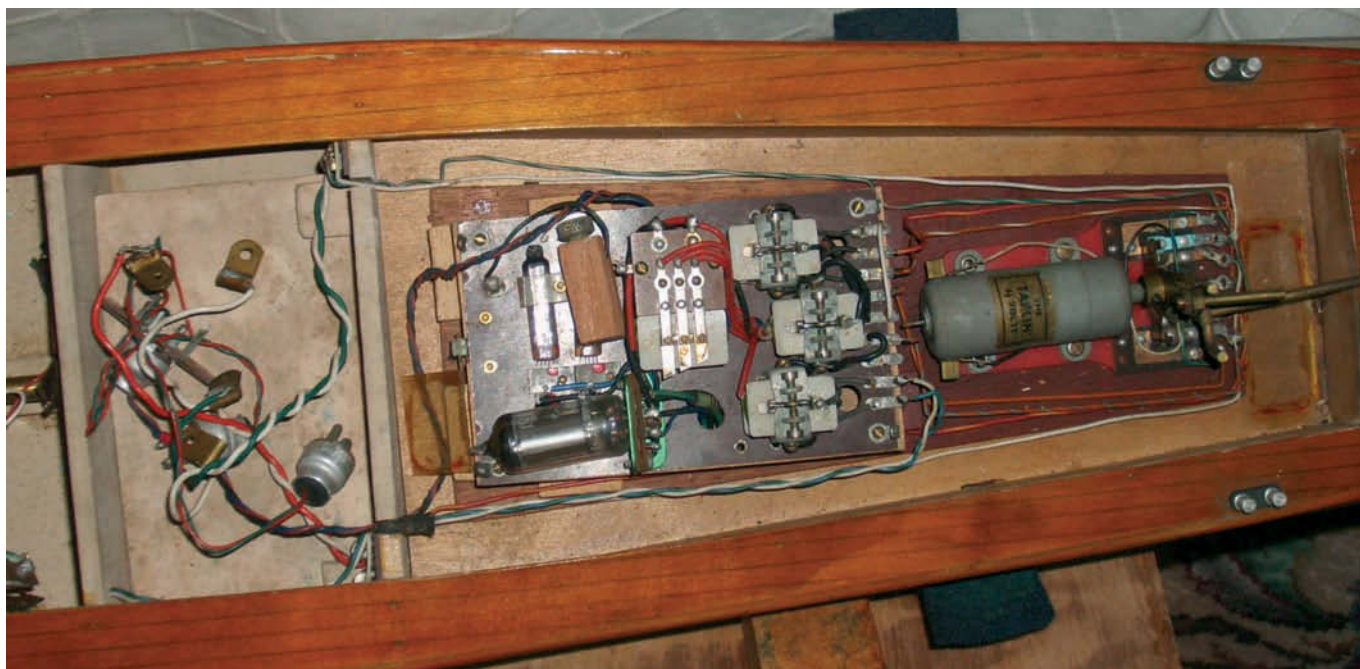
The old vintage receivers also are typically 'super-regenerative' (super-regen) types rather than the narrow band crystal controlled super-heterodyne (super-het) type used in later narrow band and modern systems. Super-regen receivers can be controlled with a wide range of RF frequencies and thus are susceptible from interference from other radio band users.

In Europe any modern radio frequency emitting equipment has to be CE certified and marked as such by the manufacturer, though this CE certification is expensive, it is done with good intentions, as the radio spectrum is so crowded these days regulation is required to prevent interference between users.

I have to say that it is great to preserve old equipment, they are a real piece of history, but it was not the intention of the article to advocate using them these days. To clarify, Robin intends to rebuild the radio but have a hidden 2.4 GHz system in real control rather than the valve

gear	propeller	power	voltage [V]	current [A]	power P [W]
1:1	Graupner 3 blades Φ 40 mm, pitch 21 mm order number 2308.40, 2308.40L	stabil.	5,0	0,45	2,3
			6,0	0,50	3,0
			7,0	0,60	4,2
			8,0	0,70	5,6
			9,0	0,80	7,2
			10,0	0,90	9,0
			11,0	1,00	11,0
			12,0	1,10	13,2
1:1	Graupner 3 blades Φ 45 mm, pitch 24 mm order number 2308.45, 2308.45L	stabil.	5,0	0,50	2,5
			6,0	0,65	3,9
			7,0	0,80	5,6
			8,0	0,90	7,2
			9,0	1,00	9,0
			10,0	1,20	12,0
			11,0	1,45	16,0
			12,0	1,65	19,8

Example excerpt from the information available from MegaMotor website on the MIG 650 motor



The valve equipment in Robin Owen's Mvita model will be for show purposes only



The Master Airscrew static balancer for propellers

equipment; I think this is a great idea.

Tony Pearce from Yeovil & District Model Boat Club was also kind enough to email me about Robin's Mvita model, he said:

"I think the radio receiver is an early 3-channel reed receiver with three polarised relays made by Electronic Developments (ED). The HT voltage was 45 volts and LT voltage 1.5 volts and used 2 Mullard DL66 and a DL 94 or maybe 3S4 valves (memory a bit hazy) driving an ED 3 reed unit. I owned one of these as my first introduction to radio control back in 1955, I also remember the Taplin actuator for rudder control. I still have an ED 6-channel reed unit and a new RCS 12-channel reed unit if they are of use to

Robin. I had a search among my old circuits but can't find any info on the ED sets.

Thanks for the Airwaves contributions, look forward to them each month, bought a Planet T5 radio after your review, very satisfied with it."

This informative email from Tony raises another point in that the valve radios often use very high DC voltages that are potentially lethal, so to be safe I would not recommend trying to get them working or operate them.

PROP BALANCING

While on the subject of safety, I had an email kindly forwarded to me by the MMI editor from R.Collette-Moxon who is concerned that the method of prop balancing I used and described in the May 2013 Airwaves for balancing the Swamp Dawg airboat propeller is potentially hazardous and should not be recommended. I agree, and although I successfully used this method as described I did take appropriate precautions, however it would not be wise for readers to use this dynamic balancing method as injury could easily result.

If propellers need to be balanced then this should be done in accordance with the manufacturer's instructions using a static balancer. These balancers are available from model aircraft suppliers. The balancing method will vary dependant on the material the propeller is made of so do take care.

The balancing methods vary but can often be found on the Internet, for example information on the Mast Airscrew propellers can be found here: <http://tinyurl.com/Airwaves-09-2013-prop>

My research into balancing methods also raised another potential hazard in that some electric motors spin at such a high rpm that they can over-rev a propeller beyond the manufacturer's recommendations, for example Master Airscrew glass filled nylon propellers have a recommended rev limit of 165,000 divided by the propeller diameter in inches. In this case a 10 inch propeller, for example, should not be run at more than 16,500 rpm.

CONTACTING THE AUTHOR

I would like to thank all the readers who have taken time to contact me in recent months; your input has been invaluable and encouraging. If you have useful advice that I can pass on to other modellers through this Airwaves column or any questions then I am always pleased to hear them and I will try to help. My email address is airwaves@anola.net **MMI**

CHANDLERY

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Length: 690 mm
Beam: 210 mm
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Sailing Weight: 2.2 kg
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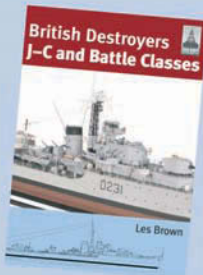
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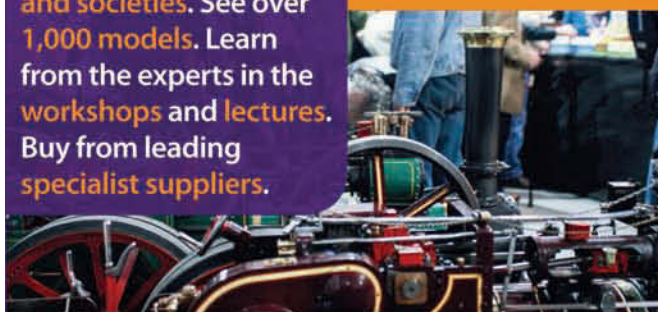
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SCALE SCENE

IAN DETAILS AN EASY WAY TO CONSTRUCT SHIPS' LADDERS

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

Last month I explained the use of slotted joints as an aid to building all sorts of boxes and superstructure parts easily. I have included a photo here of just such a box structure. I have glued all the joints and trimmed one corner so you can see the result. As the material is 1 mm thick polystyrene sheet and the structure is quite large (the coin is a 5p piece for reference), I would suggest bracing the structure with triangulation pieces at the corners. If you require a really strong structure, you could use the same slotted method to construct a boxed or honeycomb like structure inside.

What are the advantages of using the slotted construction as opposed to just butt jointing the sides? Well ease of assembly is the main one, also if cut correctly the joints will hold themselves together during the gluing process without clamps or assembly jigs, which speeds up construction considerably. When using this sort of construction with plastic, it is advisable to use a liquid type adhesive such as plastic weld or similar. Now on to the ladders I promised you last month.

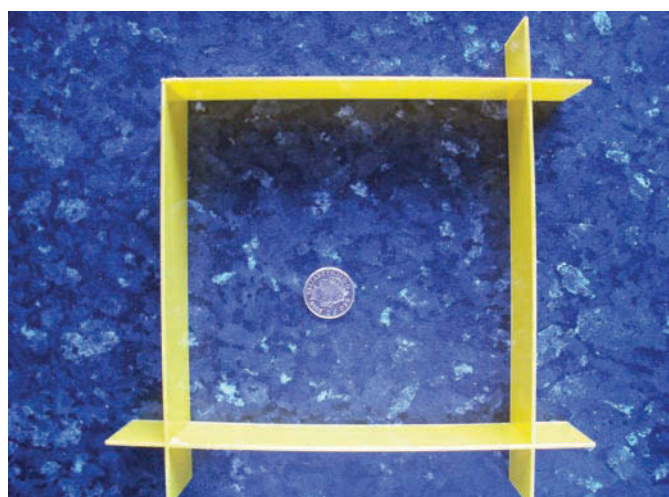
Before starting to explain the construction procedure, I should explain a few things. Most importantly, the slots you cut must be exactly the thickness of the material you are using, you can use

wood, plastic, or even brass or copper sheet, but the principle applies to all materials. I can't stress enough how vital this is as, if the slots are too big and the joint is slack, you lose all the benefits of this method. Such as being able to assemble the item dry and have it self-supporting during gluing! Also, although the basic procedure for making the ladders is the same, there are several different ways to achieve the same end.

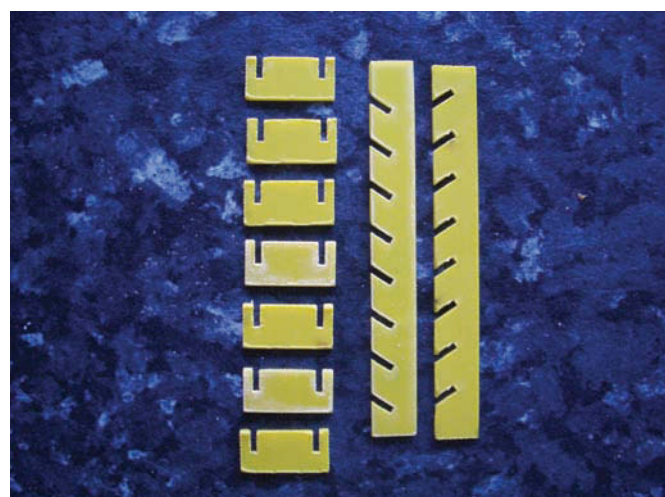
Right here we go. First you will need the measurement of the ladders, the height, width, depth and also the distance between the treads. In whatever material you are using (1 mm polystyrene in the photos) cut some long strips the width of the sides of the ladder, these will be used for the treads as well. If you are only making one or two ladders you could clamp the strips together and mark out all the slot positions and where the treads need to be cut off. Also mark the centreline on the strips; this is where you will stop the saw cuts as per the diagrams in last month's article. For most jobs of this type a razor saw is ideal, the largest of my three saws gives a 1 mm cut width, which is why I used 1 mm styrene for the demo pieces I made for the photos.

If you have quite a number of ladders to make, you may want to construct a jig to help with the cutting of the slots. The diagrams shown here will give you the basics of a simple jig. It could be made from wood, but steel would be better. You could get away with aluminium but, as with wood, you would have to be careful with the saw to avoid enlarging the slots.

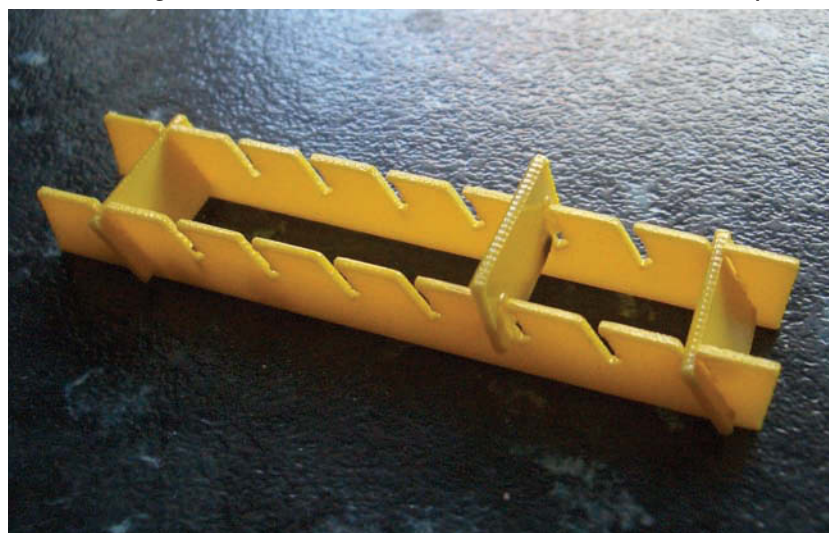
The width of the jig between the sides should equate to the number of ladder sides you want to make. If you need four ladders in 1 mm material = 8 sides = 8 mm width, etc. The slots in the jig can be angled like the ones on my demo pieces or straight like



Box sides using slotted construction (see text)



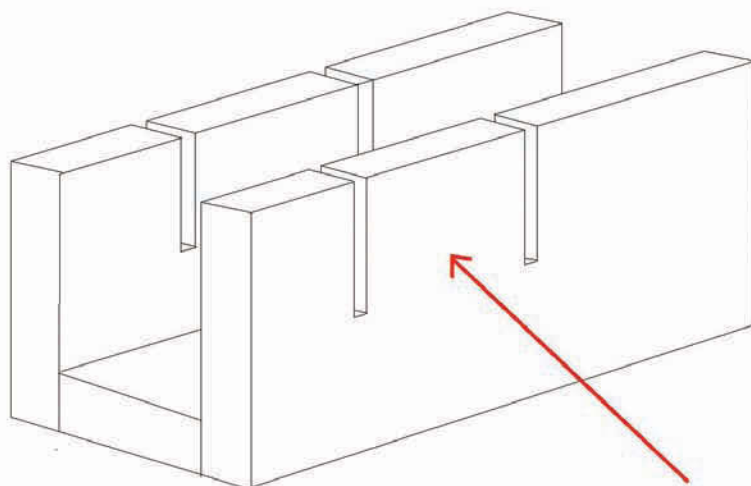
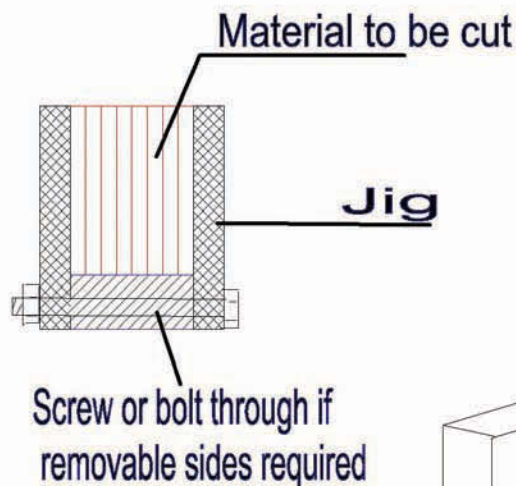
Components of ladder cut and ready for assembly



Beginning assembly (see text)



Complete trimmed ladder awaiting final sanding and finishing



Only two slots needed (vertical or angled)

the diagrams and you will notice that I have only specified two pairs of slots in the jig. This is to ensure accuracy of the tread spacing.

The sequence is this. Carefully holding the material strips firmly in the jig make the first cut in the first slot. Then use a scrap piece of the material you are cutting to slot into the cut you have just made to stop the strips from moving in the jig and cut the strips again using the second slot. Remove the scrap piece and move the strips so that the cut you have just made lines up with the first slot in the jig and place the scrap piece in here. Then cut the strips again using the second slot. Keep on doing this until you have cut all the slots you need. It may seem a little fiddly but is pretty quick and is the simplest way to keep the slots spaced accurately. You can make a similar but small jig to make the ladder treads and of course you will still need two slots in the jig. Or you could do what I did and clamp all the tread pieces in a small vice and saw the slots that way, less accurate than a jig but a little quicker. Once everything is cut out

you only need to slot everything together and apply the adhesive. Leave to dry thoroughly and then carefully cut off the unwanted ends, sand or file smooth and you have your basic ladder! I use the side I have slotted the treads in from as the back of the ladder as I think the other side has a better appearance. One of the photos shows a ladder during assembly and another one shows a completed ladder just requiring final sanding.

I hope this has been useful and I'll see you next month. **MMI**

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LIVEWIRES

IAN REPORTS ON THE MPBA FAST ELECTRIC NATIONAL CHAMPIONSHIP AND RAY LEE REPORTS FROM SWAMBC

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

MPBA FE NATIONAL CHAMPIONSHIP REPORT

The 2013 Fast Electric National Championship was hosted by the Bridlington club at their Carnaby Lake, as it has been for the last few years and before I get into the report proper, I would like to highlight the work done by the Bridlington club members for the nationals weekend. I'm not going to try and name everyone, but you know who you are, and we racers really do appreciate all your efforts. Thank you!

The Nats were held a little earlier this year due to the closeness of the World Champs being held in Belgium. The upcoming Worlds were also the cause of a drop in entries for the Nats, partly because the Belgian racers stayed at home, for obvious reasons and partly because some UK guys didn't want to be damaging boats before the trip to Belgium. Nevertheless there was still a very healthy 91 entries!



Martin Marriott's odd mini hydro (photo David Baker)



The Bridlington pit area early on Saturday morning



Start of a Super Cat race



Ian Rees's boat (The Racing Wrinklys) blows over in Super Cat

The weather was fairly kind to us this year, but there were a couple of short downpours of almost Biblical proportions! That said none of the racing was interrupted and everything went pretty smoothly. There was some complaint about the way the batteries were checked for voltage and weight, but this is racing, there are always some complaints, just look at the professionals of Formula 1! All that aside, there was some very close and exciting racing, which provided the usual thrills and spills. But driving has improved over the last couple of years and most people took their boats home in one piece rather than in pieces.

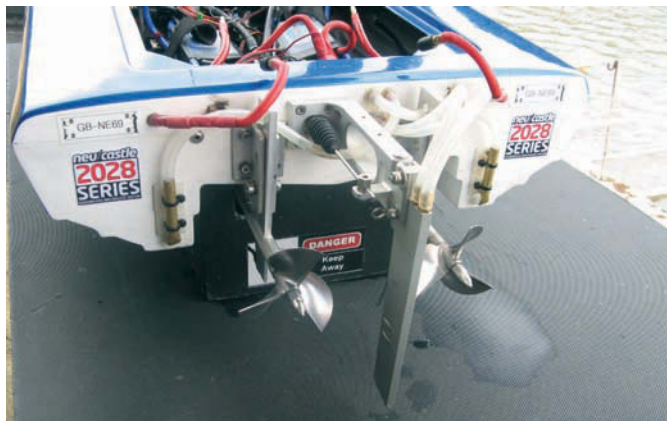
Looking around at the boats on view I didn't notice many really new or innovative designs. In fact the 2nd place Hydro 2 boat was a 4 or 5-year-old design and very nearly won. I'm not sure that there will be much more improvement in boat performance until someone

Luke Burton's Mono 2 running flat out (Courtesy Mark Thompson)





The huge Neu motors in Phil Miller's cat (see text)



The business end of Phil's cat. I believe these were 75 mm props!

comes up with an improved battery design. I don't think the motors and hulls have been fully optimised as yet, but I think that we are fairly close to that now. Ever since brushless motors were introduced, the limiting factor to performance has always been the cells and that is still the case. Unfortunately it seems that LiPo cells are going the same way as NiMH cells and NiCads before them. As manufacturers strive for larger capacities for their cells they seem to become more 'fragile' and unreliable, some becoming unusable after only a few races! This is not a good situation at all. Anyway, gripe over, back to the racing.

With the absence of the Belgians, who to our embarrassment usually have the fastest boats, the racing was very close and tight and speeds seemed to be pretty much the same as last year. Although it is fair to say a couple of classes were won with fewer

laps than last year. Although I said earlier that I didn't see anything new, there were a couple of boats that caught my eye.

Martin Marriott's mini hydro was a bit strange; the sponsons were stripped to their barest essentials, being more skis than sponsons. When I first saw it, it was fitted with wings over the sponson tubes. Giving it the appearance of a WIG vehicle. However, these were removed for racing and it ran pretty well, placing fifth overall.

Another boat that caught my eye was Phil Miller's large twin motored Cat. That is the one in the photos painted up in Red Bull livery. This wasn't being raced, as it did not fit into any of the classes. However, he did demo it on the Saturday evening after racing. This led to an amusing incident, which I will detail soon. The boat is a large I/C cat hull and it needs to be considering the amount of power within its hull. The twin motors are huge, about the size of baked bean tins! They are American made each reputed to put out around 10 horsepower. The motors were originally designed to replace the 25 cc weed eater engines, which produce around 6 to 8 horsepower in racing tune. So you can imagine what two of them will be like. Phil ran the boat on the Saturday night and I remember thinking when he first hit the throttle that he was going to need a bigger boat and a much bigger lake! Bridlington Lake isn't all that big, but after all it is big enough to contain a full international oval racing course and the boat covered the length of it in the blink of an eye. I don't know how fast it was going; too fast to photograph that's for sure! To give you an idea, the boat went from one end of the lake to the other and when it had stopped the water from the huge rooster tail was still falling into the lake at the end it started from! Truly a monster boat!

The amusing incident? Well, during one of the runs Phil applied the throttle too quickly and the boat flipped. A friend of mine, Keith Mallam, volunteered to man the rescue boat with Phil to recover the cat. Keith who runs big 25 cc boats and came with me to the Nats as he is becoming interested in FE and is an experienced boater, but I don't think he had ever rowed a boat before. Especially as it is an unhandy square twin hulled thing that is normally powered by an electric outboard. To cut a long story short, Keith was having great difficulty rowing the boat, but unbeknownst to him he had snagged one of the buoys on the course between the two hulls and was consequently dragging the considerable weight of the buoy's hold down system! After 10 minutes of pure comedy, going round in circles, Keith and Phil managed to return to the side. This left poor George Roberts the task of donning the chest length rubber (he likes it – he does!) wading out to replace the buoy.

Well it only remains for me to give you a list of winners (see next page) and I will hand the column over to Ray Lee, the SWAMBC FE secretary for a mid term report.



Eco Expert:

1st Stephe Hart
 2nd Donatas Ceponis
 3rd Peter Barrow

Formula One:

1st Stephe Hart
 2nd Bill Hickman
 3rd Keith Hickman

Hydro One:

1st Paul Heaton
 2nd Chris Osman
 3rd Paul Heath

Hydro Two:

1st Chris Osman
 2nd Paul Heaton
 3rd Paul Heath

Mini Eco:

1st Stephe Hart
 2nd Mark Shipman
 3rd Aran Bond

Mini Hydro:

1st Paul Upton-Taylor
 2nd Ian Philips
 3rd Rob Physick

Mini Mono:

1st Dale Marriott
 2nd Allan Shilitoe
 3rd Rob Physick

Mono One:

1st Steve Bennett
 2nd Dale Marriott
 3rd Martin Marriot

Mono Two:

1st Paul Heaton
 2nd Luke Burton
 3rd George McDonald

Super Cat:

1st Rob Physick
 2nd Phil Miller
 3rd Paul Upton-Taylor

Super Mono:

1st Phil Miller
 2nd David Harvey
 3rd George McDonald

Team Eco:

1st Kukorelli
 2nd LTU Racing
 3rd Team Torbay

Team Mono One:

1st Team Macca
 2nd NADS Lads
 3rd Team Torbay



The beast itself – what a boat

That's it, over to Ray for an update on the SWAMBC F/E Series:

HI ALL FAST ELECTRIC BOAT RACERS!

I hope you enjoy this, my first publication in the MMI as the New SWAMBC FE Secretary. First I have to say a big thanks to some guys for the help and support they have given me so far. That's, Jim Bond, Russ Chilcott, and Mark Shipman, without you guys I would be lost.

So far the SWAMBC season has had ups and downs, right from the close of last season where we lost a number of our race venues, we have been

manic trying to find suitable replacement venues to host us this season, and in the future. We managed seven meetings, with a few repeat trips to the same venue. We have a brand new venue on Exmoor at Wimbelball Lake and the club have agreed to host three rounds this season. This was all arranged by Jim Bond (thanks again Jim). The Dartmoor Club are hosting two rounds and The City of Plymouth MBC hosting one round at Millbrook Lake and one at Weymouth. This round was only agreed in June and I would like to thank the Weymouth Club and Mike Greenham, for allowing us to visit them on 15th September. It all fell together, just!

If there are any clubs in the South West of England that would be willing to host a round of Fast Electric racing, please get in touch with me. All my details are on the SWAMBC website. We would enjoy a visit to your club. And I'm sure we would entertain you with our FE fast and fun racing action.

At our AGM we agreed to run this season with two series, our normal SWAMBC rules Boats running 2S set-ups and the NAVIGA, Boats running 3S set-ups, and to a specific weight limit. This meant some of us were busy close of season changing our boats to suit the new set ups.

A good study of an outrigger hydro at speed – Paul Heaton's hydro 2 (courtesy Mark Thompson)



TOP THREE STANDINGS FOR THE 2013 CHAMPIONSHIP

F2 SWAMBC Rules

1st Alan Shipman 57 Pts
2nd Bill Hickman 42 Pts
3rd Keith Hickman 32 Pts

NAVIGA Rules

1st Russ Chilcott 63 Pts
2nd Aran Bond 54 Pts

F3 all SWAMBC Rules

1st Becky Jones 37 Pts
2nd Mark Tiley 21 Pts
3rd Ryan Tiley 18 Pts

F4 SWAMBC Rules

1st Gary Westwood 57 Pts
2 Phil Jenkins 55 Pts
3rd Aran Bond 47 Pts

NAVIGA

1st Roger Clark 60 Pts
2nd Russ Chilcott 52 Pts
3rd Mark Shipman 37 Pts

MINI Hydro

1st Phil Jenkins 60 Pts
2nd Bob Bryant 39 Pts
3rd Mark Sutton 16 Pts

Mini Mono

SWAMBC Rules

1st Gary Westwood 63 Pts
2nd Mark Shipman 21 Pts
3rd Steven Bryant 18 Pts

NAVIGA

1st Jim Bond 63 Pts

Mini Eco

1st Aran bond 57 Pts
2nd Russ Chilcott 54 Pts
3rd Bob Bryant 48 Pts

Hydro 1

SWAMBC Rules

1st Phil Jenkins
2nd Bob Bryant

NAVIGA

1st Jim Bond 60 Pts
2nd Gary Westwood 52 Pts
3rd Mark Shipman 36 Pts

MONO 1

SWAMBC Rules

1st Alan Shipman 60 Pts
2nd Ray Lee 57 Pts
3rd Jon Firman 16 Pts

NAVIGA

1st Jim Bond 60 Pts
2nd Gary Westwood 52 Pts
3rd Mark Shipman 36 Pts



What a place to race boats! Wimbleball Lake

The racing this season has been really great with lots of different class winners. And great fast action, there are lots of photos on the SWAMBC website. We had our first visit to Wimbleball, which was just excellent. This is a great place to visit; there is so much to do there with water sports, and things for all the family – definitely worth a visit.

The weather was very good to us it was sunny, which was very welcome. The racing as always was fast and great fun to watch, with a few crashes and the occasional flipped Hydro's and lots of laps being counted by the guys that managed to

finish their races. A big bonus for this new venue was the large number of public onlookers enjoying the action. Over all we are very pleased with the first 3 rounds of racing this season. And the season standings after three rounds are shown to the left – can't wait now for round 4 back at Wimbleball:

These positions can all change at the end of the season, as there are discarded rounds to take in to account. So watch this space for the final SWAMBC Championship Class winners.

SWAMBC FE Section will welcome any new drivers to events, we have a race PRO who is willing to advise any new driver, so if you are interested in having a go contact me by my email address or phone number listed below.

Hope to see you all racing soon.

Ray Lee, SWAMBC FE SEC

Email: ray-fesec@hotmail.com

Tel: 01752 509684

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Designed by Clive Halliwell

A simple attractive warship of a 1960's design Corvette class. Ideal for the beginner with plenty of space for RC and electric propulsions, which can be detailed to the builder's requirements. Scale 1:96, Length 63.5cm, beam 10cm. Balsa construction.

Free plan: MMI October 2009

Ref: **MAR 3407**

RRP: **£11.00 /US\$ 16.00** + p&p/s&h

Difficulty Rating ●●●○



CANADIAN LOG PUSHER

Designed by M Perrin

A unique boat used in the Canadian lumber industry to move logs and modelled at 1:12th scale. Model size is 310mm by 140mm designed for converted electric bow thruster unit. Makes a unique model full of colour and character.

Featured in: MMI APRIL 1991

Ref: **MAR2330**

RRP: **£11.00 /US\$ 16.00** + p&p/s&h

Difficulty Rating ●●●○



ETOILE

Designed by Bernard Gillier

A semi-scale model for 540 electric motors either as fast runabout or skiboat with 1:12th scale figure 700mm long 250mm wide. Single screw twin rudders all ply or balsa construction.

Featured in: MMI FEBRUARY 1991

Difficulty Rating ●●●○



ETOILE PLAN

Ref: **MAR2324**

RRP: **£13.00/**

US\$18.50

+ p&p/s&h

ETOILE WOODPACK

Ref: **WP2324**

RRP: **£31.00/**

US\$51.00

+ p&p/s&h

ETOILE SET

Ref: **SET2324**

RRP: **£40.00/**

US\$64.00

+ p&p/s&h

JOHN KING

Designed by Jim Pottinger

Bristol Industrial Museum's preserved 1935 built tug drawn as originally built and recently restored at 1:24th scale. Model is 880mm length and 220mm beam and the two sheet plans give many details but no model construction data.

Featured in: MMI MAY 1999

Ref: **MAR 2734**

RRP: **£18.50/US\$25.00** + p&p/s&h

Difficulty Rating ●●●○



NORDIC PRINCE

Designed by Charles Sells

General lines and elevations for a 1:128th scale working model of the Royal Caribbean Cruise Liner built by Wartsila in 1970s. Model length 1500mm by 185mm beam plans for experienced modellers only with no model construction data or fine detail.

Designed by Charles Sells.

Featured in: MMI March 1999

Ref: **MAR 2728**

RRP: **£14.00 /US\$18.50** + p&p/s&h

Difficulty Rating ●●●○



HMS MANCHESTER

Designed by Bill Dickinson

Two sheet plans at 1:96th scale for Stretched Type42 Destroyer built 1983 at Vickers. Model length 1470mm by 160mm beam. No model construction data.

Ref: **MAR 2695**

RRP: **£19.50/US\$25.00** + p&p/s&h

Difficulty Rating ●●●○



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MEETING POINT

REPORTS ON SHOWS HELD DURING
JUNE 2013

17TH ALFOLD CHARITY MODEL BOAT SHOW, 1ST AND 2ND JUNE, SPRINGBOK ESTATE, ALFOLD, SURREY, BY KIM BELCHER

Prayers were answered. After the coldest Spring for 50 years in the UK it was as if the Summer had at last arrived, along with some 30 model boat clubs, seven trade stands and yes, Graham Sheppard from Hunter Systems back to reasonable health!

This is the outdoor show with a caravan and tent village, flanked by trade stands opposite the three rows of club stands and with a close proximity to the picturesque boating (and fishing) lake for all; most set up on Friday afternoon with friendly banter and early barbeques. There was much talk around the words 'straight', 'running', 'ten point scores' and 'rudder settings' – well done Steph!



Just a small part of the wonderful lake area with exhibitors and some twenty visitors still enjoying the sailing late on Sunday afternoon

On Saturday I counted over 330 models, a fair number of which went onto the water over the two days, supported by an informed commentary from Chris Eager through the public address system. There was a large 'bring and buy' marquee containing many 'unwanted' boats, with 10% of the sales going to the host charity – the Merchant Seaman's War Memorial Society.

I will cover a few of the models that caught my eye. To take home would have been Brian Arnold's *Pisces*, a 1/12th scale beam trawler based on a Models by Design Cygnus hull and wheelhouse. Brian, from the Portsmouth and District Model Power Boat Club, had scratch-built the deck and all the fittings – the hardwood handrails were sublime; likewise the brass pulley system, hinged wooden net beams and all the detailed pneumatic, electrical and gas pipelines with their brass connectors, even the 'gas' flames lit under the kettle in the galley area! The external wheelhouse electrical and pneumatic control boxes were made from old servo case tops, whilst small cans from electric motors formed the base for the winch motors – effective! The crew figure, in his yellow brace and bib gear, just set the whole model off. It was powered by an MFA geared belt system on 12 volts, through an Mtronik's ESC. To compliment that it had a Technobot's standard sound module – designed by Alan Bond of the Solent Model Boat Club, who just happened to be a guest on the MBA Dover stand. A most polished and neatly finished model. Also on Saturday a fine Chinese junk took to the water, but I could not track the owner down for details, however, I could not leave it out as it looked very colourful and unusual against the distinct water hue of the Alfold lake!

I am showing a variety of boat types from the show and the ways of achieving an end product, from possible 'ready to run', buying a ready built running model and upgrading it to suit your purpose, through hull and wheelhouse buys to complete kits or a full scratch-build – something for everyone. Next is a Billings 1/25th scale kit of the modern Danish Coastguard boat *Thor*. Powered by twin water-

*Inset: Close-up detail on *Pisces*, showing the brass work connectors, hard wood handrails and those servo case lids posing as pneumatic and electrical box covers – ingenious!*



Brian Arnold's 1/12th scale *Pisces* – a most 'polished' and neatly finished beam trawler

jets and made by Keith Wright of the Southwater Dabblers MBC, running off two 2100 mAh 11.1 volt LiPo batteries, through R/C Line 30 Amp ESCs which were driving Graupner Turbo 700BBs – it looked fun!

And now for something completely different, Darren Jennings from the Southend MBC bought a 1/48th scale Calmac car ferry as a going concern. Named *Muirneag* out of Glasgow it is powered by a 340 style motor off 6 volts through a 7 amp Electronize ESC into a single shaft. It had a bow thruster, making it very manoeuvrable. Darren had added some die-cast scale model vehicles to bring it to life – there's nothing wrong with that – a quick and easy way to enjoy our hobby, whilst adding your own touch.

At the other end of the scale (in fact Fleetscale!) was the model of RMAS Roysterer, a Robust Class tug. This was built and displayed by brothers Ian and Nigel Carver of the Southwater Dabblers and Swiss Cottage MBCs, and was based on the Fleetscale 1/96th scale kit. The finish was superb. She was driven by two MFA belt drive systems on 12 volts through an Action mixe/ESC set at 100%. She took six months to complete and was sprayed using Halford (UK auto store chain) acrylic car paints. To add to the realism Ian and Nigel had wired in two Mtroniks large multi cylinder diesel sound modules – most impressive. Another similar style craft, but from the RFA, was MBA – Dover member Alan Poole's Loyal Mediator fleet tender at 1/96th scale. This model attained a Silver Award at the 1996 Olympia London Model Engineering



A junk it was, but junk it wasn't!

Show and had recently been coaxed out onto the water after 15 years in its carrying case! Based on a Model Slipway kit it has been vastly modified and detailed (mostly scratch-built) against the original ship's plans, as Alan had served as an engineer on the actual boat. The detailing and finish are exquisite – a real masterpiece! Even the angle-poise lamp on the chart table works and there is water at the bottom of the tank holding the outboard



Keith Wright's Danish Coastguard boat 'Thor' with its water jet propulsion being demonstrated



Alan Poole talks to brothers Ian and Nigel Carver all things Navy! On the Dover stand behind are Kelvin Castle's Archer Class A154 Explorer and his British Rail Cross Channel ferry



Not only can he build his own models, but Harvey Bagley can hold his own when talking to visiting members of the public – they were most impressed by him!

a modeller unable to attend the show. Some 200 paying members of the public attended. Mark Thatcher from Model Sounds Ltd summed it up, 'The Show was extremely well organised, I was made most welcome by all and was amazed to have sold out by 2 o'clock on Sunday!' The Merchant Seaman's War Memorial Society raised just over £1,500 across the weekend, for which their CEO – Trevor Goacher – was most grateful. Put 31st May and 1st June in your diary for 2014 and come and relax with your model boats!



Loyal Mediator, an award winning RFA fleet tender built by Alan Poole and taken out of 'moth balls' after 15 years in the workshop!

motor for the Gemini RIB! He was awarded a 3rd place in Class here at Alford. Finally, another one of Ken Murray's (West Hampshire Modellers) novelty water models – a large crocodile! Using a garden centre 'joke croc' head, scratch-built body from clay and polystyrene and with a 545 type electric motor built into the head alongside a rudder and all the normal electronics (utilising an Mtronik's 15 amp ESC working off 7.2 volts) this model had a menacing look when a 'wiggle' was given via the rudder – very lifelike – it was placed 2nd in the Novelty section of the Show. Ken is an ex 'Vindy' Boy from the National Sea Training School – what will he think of next!

These are just a few of the models which you would have seen, but some of my favourites. The whole weekend was enjoyable and relaxing, traders, clubs and exhibitors mixing well and interfacing with the public throughout. The Roffey Girl Guide troop provided their usual good quality refreshments, whilst too trying to raise funds to send seventeen young ladies to Africa on a Coco's Foundation Service Project dealing with orphans and AIDS. Visit www.cocoguides.weebly.com for further information. The West Hampshire Modellers sponsored the trophies along with a donation from



A model of the Calmac car ferry 'Muirneag' of Glasgow, owned by Darren Jennings, to which he added die-cast model cars to bring it alive



Ian and Nigel Carver's RMAS Roysterer, a Robust Class tug finished to a very high standard throughout



Members of the Southern Model Lifeboat Society with their presentation plaque

TONY OLLIFF REPORTS ON THE FUND RAISING PRESENTATION FROM THE RNLI

At the Alford Charity Model Boat Show on the weekend of the 1st and 2nd of June this year the RNLI Southern Area Fund Raising Manager Peter Tarrant called in to this very popular event to visit the Southern Model Lifeboat Society stand and to present them with a plaque in recognition of 25 years of fund raising for the RNLI.

Tony Olliff, founder of the Society, and Reg Woodcock, a long serving member, received the plaque on behalf of all the membership.

Not only do the members of the Society collect for RNLI projects by displaying their model Lifeboats at shows all over the south,



Life-like and a real novelty! Ken Murray's motorised crocodile with geko 'hitching' a ride. His motorised hippopotamus won 1st place in Novelty class – this gained 2nd place! What will we have next year?

they also promote the life saving institution and give help to other Lifeboat modellers on the building of Lifeboat models.

Our current project is to raise funds for a new Shannon class Lifeboat and shore works for Selsey West Sussex, which will replace the current Tyne class Lifeboat and slipway boathouse. This should happen sometime next year. We hope with the public's support to raise in the region of £5000 for this appeal.

CADMA SHOW, 8TH AND 9TH JUNE 2013, BY TOM GORMAN

The annual model boat show organised and run by Conisborough & District Modelling Association this year moved from the Aircraft Museum in Doncaster to the Doncaster School for the Deaf where extensive grounds, free parking and a large hall allowed traders and clubs ideal showing of model ships. The model trade gave excellent support to the venue and the weather for once, was friendly and encouraged visitors.

Running from 10 am to 5 pm on Saturday 8th June and from 10 am to 4 pm on Sunday 9th June the event was well supported. Saturday morning in particular was crowded with visitors and access to the stands was restricted due to the press of visitors, from about 1.30 pm to closing the crowd thinned and access became easier. Sunday, as is always the case, was a little quieter. The standard of ship models was high and many clubs had impressive displays, judging the models in the various classes was done by the writer and Peter Riches during the Saturday and completed on Sunday.



Stand of the Sheffield Ship Model Society



Vicker Water Models stand



Tom Gorman presenting the award for the best fishing vessel to Ray Bell of the Roker MBC



Surface Warship Association stand

The photographs show a number of the club stands and traders. By and large it proved to be a good show, the venue was an improvement upon the Museum where space was a problem. Here there was also the benefit of a restaurant upon the floor above with easy access by lift and the facility of being able to sit and enjoy a break at any time during the show. All the trade stands were round the walls of the hall with the club displays in the centre. The show for 2014 will be at this same venue on the 7th and 8th June. The following traders attended and it is understood that they had a successful show, Mobile Marine Models, Deans Marine, S H G, Models By Design, Mount Fleet Models, Squires, Action Electronics and the Component Shop. Apologies to any I have missed.

Prizes were awarded in Eight Classes as follows:

Rigged and Sail – Bounty by B.Smith.

Rescue and Life Saving – R.Abbott, Sheffield.

Naval Vessels – HMS Bulldog – Ray Bell, Roker Park

Tugs – Tollman – Bob Henderson, Roker Park

Fishing Vessels – Our Lass – Ray Bell, Roker Park

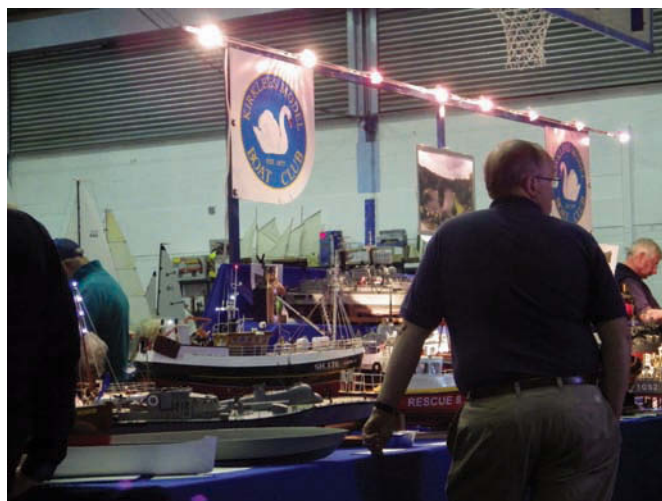
Work Boat/Best in Show – Balmoral – Ray Witton, Kirkless MBC

Pleasure Craft – Steam Launch – B.Smith, CADMA

Junior – HMS Amazon – Adam Holmes, Kirklees



Mike Allsop of Scale Flags and Ensigns talks to a client on his stand



Kirklees MBC stand



Brian Smith, CADMA Chairman, with the prizes

BOATS IN THE BAY AT CARDIFF, 15TH JUNE 2013 BY JOHN GITTINS

Boats in the Bay was the first model boat show organised by Margam Park Model Boat Club at Cardiff Bay Barrage. Despite all the hard work put in to the organisation unfortunately the weather took control of the event. The day dawned grey with high winds and a definite threat of rain. Despite the weather the event was well supported by Cardiff Marine Modellers, Barry Model Boat Club, Bryn Bach Model Boat Club, Cwmbran Model Boat Club and, of course, Margam Park Model Boat Club. In addition modellers from as far afield as Swindon and Fishguard braved the journey.

While the clubs were setting up there was a welcome diversion as the full size PS Waverley steamed past sailing from Cardiff to Penarth. As was to be expected the standard of modelling was high and mention must be made of two models. First the early French submarine Grondin built by Chris Netherway of the Cwmbran club. This was a very detailed model of an unusual subject. Secondly mention must also be made of the model tug Brecon Garth. This was based on a Mobile Marine Models hull and had been severely damaged in a burglary. Paul Wembridge, again of the Cwmbran club had restored this model and it was difficult to imagine that it had ever been damaged.

Unfortunately it was impossible to sail as the wind was whipping up the surface of Cardiff Bay. Not even the most intrepid model boater was prepared to risk their model.



Margam Park Display



Mark's Model Bits trade stand



S Waverley sailing past



Chris Netherway with Grondin

The trade was represented by Mark's Model Bits whose stand generated interest. Unfortunately no other traders supported the show.

Normally the area where the show was set up is popular with the public, but the weather kept them away. After a blustery morning the threatened rain materialised in the early afternoon at which point the day was abandoned. We can only hope that the problems with this year's show will not stop the organisers arranging future shows.

BARRIE GRIFFIN REPORTS ON THE WINGS 'N' WHEELS MODEL SHOW 2013, 29TH AND 30TH JUNE 2013

Another year, another Wings 'N' Wheels at North Weald airfield. This year was dry, but early on there was a keen North West wind that meant jackets on for the morning, however, there was sun and warmth later.

Unlike last year, where the number of models in the tent was a little sparse, this year there was a good turnout of clubs and models. Noticeably, there was a nice representation of model sailing barges by the Association of Model Barge Owners. Also, with much lighter winds the pond was calm and there were no mishaps afloat.

As always, there was an excellent selection of high quality models. Particularly taking my eye was a really superb large-scale model of HMS Velox, a torpedo boat destroyer from 1904. This



Seacat workboat



Trinity house ship Patricia



Centre castle of Hermes

was scratch-built right down to the engine, except the boiler, by Geoff Dixon of Southend MPBC. On Moorhen MBC's stand there was a pair of fishing boats, Andrea Gail and Lady Grace, built nicely from Billings kits by Allan Storrer, Moorhen's Chairman. One of the originals was used in the recent film 'A Perfect Storm'.



Fully working L.C.T

Since I spent twenty years running a boatyard in West Mersea, Essex, I was pleased to see a well-made model of an Essex Smack, CK171, on the stand of Brightlingsea MBC. The original, an eleven tonner, was built in 1904. Noticed on the pond, where it performed very well, was a small model of a Trent lifeboat built from an old Model Slipways vac-

form kit. This was built by Jason Greenwood of Moorhen MBC. At the poolside, but unfortunately not seen afloat, was a very well detailed and quite a large model of the Paddle Steamer Waverley. Among the more unusual models was a very large model of an LCT (landing craft tank). Peter Holt's skills also included the building of a working model of HMS Kent, a pre First World War Cruiser. Having built a model of Kent myself, I am aware that Kent is something of an historic ship, having taken part in the first Battle of the Falklands in December 1914, when after a long chase, she sank the German Cruiser Nurnberg.



HMS Velox 1904



Velox's Steam plant

form kit. This was built by Jason Greenwood of Moorhen MBC. At the poolside, but unfortunately not seen afloat, was a very well detailed and quite a large model of the Paddle Steamer Waverley. Among the more unusual models was a very large model of an LCT (landing craft tank). Peter Holt's skills also included the building of a working model of HMS Kent, a pre First World War Cruiser. Having built a model of Kent myself, I am aware that Kent is something of an historic ship, having taken part in the first Battle of the Falklands in December 1914, when after a long chase, she sank the German Cruiser Nurnberg.

complete with deck crew. On the Leighton Buzzard Stand was a model of one of the Second World War Liberty Ships. These ships were built in great numbers during the war to replace losses to U Boats in the Atlantic. They were built on a production line basis in sections and were of all welded construction. On the lake, I have already mentioned John Greenwood's Lifeboat, which performed very nicely: also on show was a schooner which sailed extremely well, a pusher tug doing a good job of controlling a heavy barge, and a small but fast PT Boat. I remarked last year that there were only three stalls at the show dedicated to model boats: this year there was only one. A sign of the times? However, there were the usual number of commercial stalls, offering modelling equipment and scratch building materials such as balsa wood etc. There was, undoubtedly, an increase in the number of ARTF (almost ready to fly) models, which shows the way the model aircraft hobby is going. It was pleasing to see that all the model ships, that I saw, were either well made from kits or scratch built, reflecting perhaps the average age of boat modellers, which is quite high.



AMBO Thames Barges



Essex Smack CK 171



Sailing schooner



1887 Pusher tug at work



Trent class lifeboat



Paddle Steamer Waverley



Some of Pierre (Jnr) and Pierre (Snr) model boats on the Penzance Model Boat Club stand

MODEL BOAT SHOW AT PENZANCE, 30TH JUNE 2013, BY PIERRE LE BRETTON (JNR)

On the last Sunday of June the Penzance Model Boat Club hold its Annual Boat show, which marks the end of the week long event that is called Golowan, with Mazey Day and Quay Fair being the main days.

This is a week long event which mark's the Cornish midsummer celebrations, over the week thousands of people come to Penzance to see this event with Saturday's (Mazey Day) being the

main day with a parade of arts celebration. There are artists, schools and members of the public taking part in a series of processions that include music and giant sculptures made by the local children. Golowan is the Cornish meaning for the midsummer celebrations.

This year the boat show had seen a drop in the number of people as only about 200 came to see the models as the weather was a bit overcast. Penzance Model Boat Club is looking to hold more events and open days over the coming year with the midsummer being its main day.

This year members from Hayle Model Boat club and members of Camborne Pond Hoppers showed their support with the City of Truro Mariners being the newest club attending. We are hoping that the 2014 model boat show will bring more clubs together for this event.

The model boat show was at the Penzance Boating pool at Wherrytown boating lake on the Western Promenade Penzance, where we sail every Sunday afternoon, for more info please feel free to email on penzancemodelboats@inbox.com **MMI**



David T Wellington (chairman) of the City Of Truro Mariners standing with some of his model boats



Camborne Pond Hoppers Model Boat Club



Hayle Model Boat Club display



Sennen Cove Lifeboat, the Diana White, a 37'6" Rother Class Lifeboat which was in service from 1973 to 1991. This model is owned by Godfrey Copeland, Chairman of the Camborne Pond Hoppers

*The gaff-rigged model in the
National Maritime Museum*



TROOP CARRYING GUNBOAT

PETE DANKS DESCRIBES THE DEVELOPMENT OF SIMPLE ROWING GUNBOATS IN USE IN THE LATE 1700S **AUTHOR: PETE DANKS**

These troop carrying gunboats were the ultimate development of the flat-bottomed boats designed in 1758 as the landing craft of the time, landing a half company of troops during amphibious operations. The flat boats, with little alteration, were used in large numbers throughout the revolutionary and Napoleonic wars. However, it was realised from their first deployment that they needed support to clear the way for the troops to survive the landing. Initially flat boats were modified to carry swivel guns or howitzers, and were then developed into gunboats carrying an 18-pounder gun. These gunboats were initially used to support the flat boats but then became offensive weapons themselves, taking part in a number of noteworthy actions.

It was a natural progression for the boats to grow; the larger hull allowed the carriage of a 24-pounder gun and the boats could operate in deeper or rougher water. In addition, it also allowed the combination of the two roles, with a gun and troops in one hull. These boats were bigger than the single-gun boats and produced essentially to one design, unlike their predecessors that showed various combinations of gun position and hull shape as they developed. All the draughts show a 24-pounder gun on a sliding carriage mounted over a full bow with a rudder fitted at the stern; these sliding carriages should not be confused with the carronade type slide that was a completely different design.

The boats were decked, with openings on either side for the rowers and larger openings aft of the gun on the centreline for the troops. One of the contemporary models shows all the openings in the deck fitted with covers while another shows covers only on the openings aft of the gun. All of the boats are fitted with thole pins for 14 oars on each side but draught number ZAZ5334 annotates only the five forward openings on each side for rowers, with the remainder annotated for soldiers. This suggests that the boat could be manned with 10 rowers in the forward openings, plus another two on thwarts in the bow, and carrying about 40 soldiers; 5334 was possibly prepared just to illustrate the manning for the troop carrying role. Perhaps significantly, by the time these boats were developed 40 soldiers was a half company, the capacity that the flat boats were designed for. With rowers in all the outboard positions up to 24 soldiers could be carried.

There is even less information on the production of these boats than is available for other types. Some were sent to Gibraltar in 1787, there is evidence that some were allocated to the Sea Fencibles for coastal defence, several were used on the Dutch canals in 1799 and the type played a part in the landings in Egypt in 1801. There is also some evidence that they were used on Lake Ontario in the 1790s and 1800s. The last note of production on the original draughts is dated November 1803.

Though the flat boat and single gun gunboat were both fitted for masts I could find no evidence that they were ever sailed, and none of the contemporary models of those boats in the National Maritime Museum and Science Museum in London were rigged. However, there is evidence of three types of rigging on the troop carrying gunboats – lateen rigs with one or two masts, and a gaff rig on one mast. Both variations of the lateen are included in the draughts listed with this article, but the only evidence for the gaff rig is the contemporary model in the Ship of War gallery in the National Maritime Museum at Greenwich.

THE SEA FENCIBLES

The Sea Fencibles was the naval version of the Militia, the Home Guard of its day, and was established by an Order in Council on 14th May 1798 to man the coastal defences against the possibility of invasion by the French. They were to be instructed in the use of cannon and pike, and be paid one shilling per day while on service.



The stern of the National Maritime Museum gaff rigged boat



The lateen rigged model in the National Maritime Museum

Their duties were to man the Martello towers and other coastal fortifications, and later to work the chain of signal stations around the coast.

By 1801 the organisation operated in 17 districts and employed 20 post captains under the command of the Admiral commanding the North Sea station. It was not an effective service and Captain Schomberg, who commanded the Dungeness Fencibles, complained in 1801:

"Notwithstanding the number of men who volunteered to go afloat, it is inconceivable the difficulty I find when the time appears to persuade them to embark. The people, who are mostly smugglers and wreckers, object to go on board the Revenue Cutters."

The force was disbanded during the 14 months of peace brought by the Peace of Amiens signed in March 1802. When Lord Keith was appointed to command the North Sea Station in May 1803 he and the Duke of York insisted that the corps be reformed. He got his way by that summer, against the wishes of the First Lord, Lord Vincent, who wanted to give the impress service time to press as many as possible of the seamen or seafaring men on the coast. Later, when the vote for the Sea Fencibles had been raised from £20,000 to £150,000 Vincent complained that it was no use other than to calm the fears of old ladies. However, Keith's organisation of the Corps was as efficient as it was possible to make it at the time.

In July 1803 Keith proposed to the Secretary of the Admiralty that a total of 120 rowing, gun, mortar or howitzer boats should be deployed between Brighton and Orfordness. Each should be commanded by a Lieutenant with two or three trusty seamen as the permanent crew to care for the boat and its equipment. He envisaged a crew of 30 men for each boat and proposed that they be drawn from the Royal dockyards, the Custom House in London, and from the East India Company's servants and other public companies. Keith thought a total strength of 4,510 would be sufficient but he was ignored and a force of 25,000 men was proposed; the strength peaked at 23,455 in 1810. In addition to providing the last line of defence at sea, Keith also thought they might be used to supplement the Revenue Service; a bit unrealistic bearing in mind Captain Schomberg's reservations!

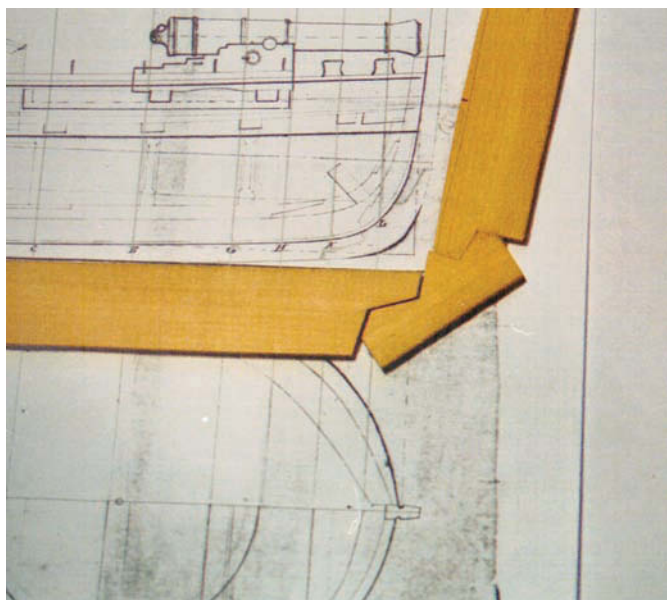
By the autumn of 1803 Keith was complaining that too many men were enrolling in the Fencibles and taking the pay while declining any service that interfered with their life. He argued that a flotilla would be useful from Harwich to Folkstone, in the mouth of the Thames and in the Humber but of no use on the rest of the coast. Parts of the Scottish coast and the Tyne might be well served but the men employed in the local craft of the Tyne could not be forced to serve since they had provided a draft of men to protect them from the Impress. In September, probably in answer to his complaint, he was ordered to discharge all unmarried men who had been to sea, those under the age of 45 with not more than two children, and all other seamen who were not otherwise entitled to a protection from impress. He was also to warn them that they were no longer entitled to protection from impress on discharge – no doubt the press was standing by to pick them up as they left the muster station!

In October 1803 he was advocating hiring small merchant craft from Harwich to Hythe to supplement his gunboats. In November one of his Captains was reporting good progress on converting the craft and by December 74 small craft in the Thames were being fitted for carronades.

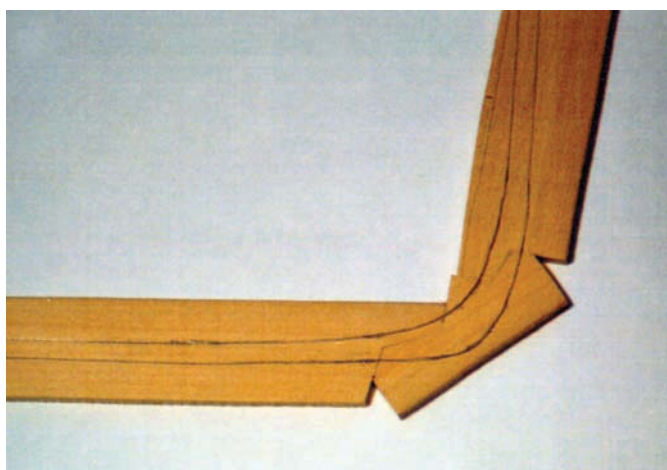
Steel's Navy List for April 1804 gives the Fencibles strength for England, Scotland and Wales as 36 districts and 98 captains. He also mentions an establishment of Sea Fencibles for the protection of Ireland under the direction of Rear-Admiral Whitshed and the appointment of four Captains, but does not go into details of districts or manning. Steel describes the force as:

"For the protection of the coast, either on-shore or afloat; comprising all fishermen and other persons occupied in the ports and on the coast, who, from their occupation, are not liable to be impressed."

Senior Post Captains were paid £1 10s per week with an extra



Forming the scarphs in the keel and stem assembly (of a single gunboat)



The keel and stem assembly glued up ready to cut out

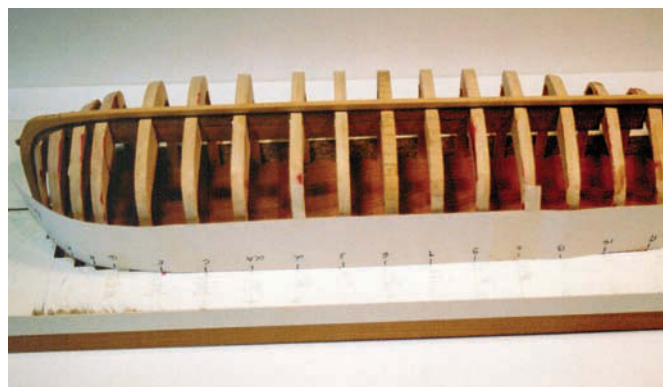
5s for contingencies, Junior Post Captains £1 10s and 10s 6d for contingencies, Commanders £1 1s and 10s 6d, Lieutenants 8s 6d per day. The Senior Post Captain of every District had command of all the armed boats and regulated the signal posts within his District. A Lieutenant commanded each signal post and there were from 3 to 6 Lieutenants at each District, according to the number of Fencibles enrolled.

After Trafalgar the threat of invasion reduced so there were calls for economies. A political pamphlet, Cobbett's Political Register published on 19th April 1806, perhaps prompted by Windham, the Secretary of State for War, drew attention to the cost of the Fencibles. It quoted Admiral George Berkley as having a salary of £1500 "for doing nothing here in England" and Admiral Hawkins Whitshed at the same salary in Ireland. The article also complained that the naval officers filling Fencible posts were fit enough to be employed at sea, and that the manpower should be employed in manning ships. There was also a suggestion that the protections against impressment that the Fencibles enjoyed encouraged smuggling. The Treaty of Tilsit in 1807 led to renewed fears that Napoleon would turn his thoughts once more to invading England but that possibility reduced following his moves into the Spanish Peninsula. Abolition was announced on 31st January 1810.

DUTCH CANALS

In 1799 there was a widespread perception that the Netherlands was more in favour of the House of Orange than the republicanism

of its French occupiers. The British decided to mount an expedition to restore the Prince of Orange to the throne. A force of 27,000 British troops was assembled under the command of HRH Frederick Augustus, Duke of York, to be supported by 17,593 Russians. The first troops landed at Den Helder on the morning of 27th August and were initially successful, easily occupying the town. They successfully repulsed a large attack on 10 September and the rest of the British troops, the Duke of York and the Russians landed on 13th. The next advance by the Anglo-Russians was a disaster and they were driven back with the loss of 2,550 officers and men. During the day three gunboats under the command of Captain Sir Home Riggs Popham lost four killed and eight wounded while supporting the troops from the Alkmaar canal. After another crushing defeat on 7th October the Army was evacuated.



The hull frames bevelled ready for planking. The card template marks the top of the wale

It was a very costly campaign that left nearly 5,000 British and Russian officers and men killed, wounded or prisoner, and the navy lost four ships, including the 64 gun HMS Nassau. The Dutch squadron of 12 ships in the Texel was taken in the campaign but they were of little value to the British. It also gave rise to the nursery rhyme:

The Grand Old Duke of York
He had ten thousand men
He marched them up to the top of a hill
And he marched them down again!

LANDINGS IN EGYPT

On 2nd March 1801 a large fleet commanded by Lord Keith anchored in Aboukir Bay and prepared to land Sir Ralph Abercrombie's army of 16,150 troops. Bad weather and the late arrival of a Turkish contingent delayed the landings until the 8th. Troops began climbing into the 20 flat-bottomed boats at 2 am and the landings began at 9 am under the command of four captains and two commanders. By the end of that day 7,000 men were ashore and the remainder were landed next day, suggesting excellent organisation and inter-service co-operation at about 1,000 men per wave. The advance began on 12th March and was given valuable support by the gunboats from the banks of Lake Aboukir and later the Nile.

By August moves against Alexandria, the last French Stronghold in Egypt, were started. On the 16th boats carrying 5,000 troops were escorted by a flotilla of gunboats under Captain James Stevenson to attack the west of the town across Lake Mareotis. At the same time another flotilla, under Captain Sir William Sidney Smith, made a diversionary attack against the sea front that caused the French to destroy nearly all of their small boats to avoid their capture. Moving 5,000 men would have needed 100 flat-bottomed boats, or considerably more ship's boats, but hired local craft were probably also used.

The French capitulated soon afterwards to end a campaign that had cost 2,200 British men killed, missing or wounded. Ironically, it

could have been avoided. Smith had negotiated an agreement with the French that allowed their withdrawal from Egypt back to France, but Keith was instructed to refuse to ratify it.

Smith appears regularly throughout the period of rowing gunboats and he suggested a number of designs, none of which were particularly successful. One of the more unusual, the Mosquito class, is illustrated on page 150 of Lyon's Sailing Navy List; the relevant draughts in the National Maritime Museum collection are ZAZ5261-5263 and 5265 in Folder Number 311. Born in 1764 Smith entered the navy before the age of 12 and was a post captain at 19. After the American Revolution he served for Sweden against Russia and gained considerable experience of gunboat operations in the Baltic. He travelled to Toulon at his own expense to offer his services when Hood took possession of the city in 1793, and was entrusted with destruction of ships and facilities when the city was evacuated. He was later involved in landing agents on the coast of France and, when captured on a cutting-out raid, was accused of having landed assassins, but he escaped with the help of a French officer. Smith was a truly heroic man who went looking for war when the Admiralty had none to offer, but he also alienated his contemporaries who did less to publicise their own courage.

CONTEMPORARY DRAUGHTS AND MODELS

The Admiralty Board decided naval policy at the time, including which vessels would be built, and directed the Navy Board to arrange the building. The Admiralty would have preferred to meet all of its requirements in the Royal dockyards at Portsmouth and Plymouth on the south coast, and at Deptford, Woolwich, Dartford, Chatham and Sheerness on the Thames. Unfortunately, their capacity was woefully inadequate to meet the demands of war so civilian contractors had to be used. The cry of modern defence contractors is that they can do the job quicker, cheaper and better than the services, but in sailing days the opposite was often true. Contractors in the 18th and 19th centuries had to be closely supervised to guard against malpractice. The majority of the flatboats and gunboats were built on the Thames by contractors and then taken to a Royal dockyard to be fitted out.



The planking round the bow

For each batch of boats a master drawing was made and retained in the Navy Office and copies were sent to each contractor and to the fitting out yard. After building, the copies were returned to the Navy Office. The Admiralty collection contains a mix of masters and copies; many are annotated with notes or amendments. The draughts in the list at the end of the article are all those known by the staff of the Plans department of the National Maritime Museum to be held in the Admiralty collection. I suspect that ZAZ5324 is the only master drawing in the list, the six other hull draughts are copies of it or of other masters. They show, I think, three or four different batches of boat, essentially to the same design.

There are a number of contemporary models of the boats in the National Maritime Museum at Greenwich in London. The collection includes examples of two of the three types of rigging. A model on display in the Museum shows a gaff rig on one mast, while another in the reserve collection shows a lateen rig with one mast. Both of the lateen rigs include a bowsprit but the gaff rig does not. In addition, the gaff-rigged has a double forestay that would allow the gun to fire with the mast stepped, though with sails struck below. The lateen boats would need the bowsprit and yard struck down in action.

THE DRAWINGS AND A MODEL

I've drawn the hull of a single mast lateen-rigged boat with dimensions in millimetres for 1:48 scale, but I've included a scale so you can alter the size to suit your requirement. I've also outlined my interpretation of all three of the possible rigging arrangements used on the boats, at half the scale of the main drawings. Note that the slope of the mast is different on the two lateen rigs. The rigging details are not to scale.

I made my model of this boat many years ago from plank on frame. Few of the photographs I took at the time are worth publishing so I've supplemented them with photos of similar models. It took some thought to plank round the bluff bow, and I remember having to fiddle it a bit (and being glad the hull was painted so it would not show).



The hull ready to start deck planking

The boat could be modelled by plank on bulkhead with covers over the troop spaces, but some detail in the open cockpit at the stern and under the rowers' positions would still be needed. Plank on frame would allow more detail to be shown, but would need a fair amount of experience. A paper hull would probably be easier to make and give a better result for the less experienced. I'd put frames on station lines 3, 3½, 4 and so on up to 14½, with cant frames at bow and stern at the same spacing at the wale.

I've drawn the gun run back for sailing in the side view, but have left it off the section for clarity. In the plan view I've omitted the gun and pump for clarity, but included the fitting for the single pump. The mast and pump fittings are similar to the gun cap squares, hinged on one side and locked with a tapered pin that was hammered home. When struck down the spars would have been stowed in the oar racks on the side, while the pump would probably have been stowed in the bottom of the boat. The bowsprit is stepped in a square socket in an iron fitting that locates in a hole in the foremost ledge on the gun slide. It is supported at the bow by a similar but circular fitting that is pivoted on a bolt in the stem to drop out of the way of the gun.

In the hull plan view I've shown the deck detail on one side and the deck beams and knees on the other side. However, aside from the pump, the deck is symmetrical about the centre line. I've not shown any of the eyebolts or cleats that support the rigging on the hull drawings, other than at the stern, so if you want to rig a model you will have to locate the necessary fittings from the rigging plan. The ringbolts drawn on the breasthook at the bow are for the gun tackles and breeching rope. The four rectangular openings in the side of the hull are scuppers, lined with lead flanged over the inboard and outboard planking. I'd simulate the scuppers with a piece of paper 1 mm greater all round than the hole with it, and the inside of the hole, painted grey to represent the lead.

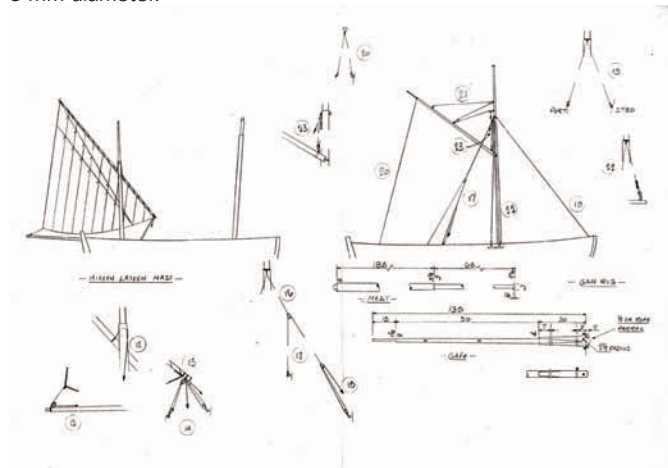
In addition to the 14 rowing thole pins on each side there is another on each side of the stern, presumably for a steering oar if the rudder were lost. Every pin is stepped in a shaped reinforcing piece fixed to the wash strake, and there is a chock between each of them. There are additional chocks at roughly the same spacing towards the stem and sternpost. The repetition of making so many of the same piece would have fallen on the shipwright's apprentice but lacking one of those (the wife supplying tea doesn't count) I cast them in resin. There is a fairlead on each side of the bow, a simple but wide sheave between two chocks.

Draught/Folder No	Details
ZAZ5323/336	Length 48'-6", moulded breadth 13'-6", depth 4'-0". Single mast 28'-0" long, 8 1/8" dia; yard 40'-0" long, 7 1/2" dia. Oars 20'-0" long midships, 18'-6" long afore. Copies were given to Mr Burr on 16th Oct 1787 and to Mr Harris on 18th October 1787. (Burr and Harris were shipbuilding contractors). May be a copy of 5324.
ZAZ5324/340	"Draught of a Gun Boat to carry one 24 Pounder in the Bow as shown on the Draught with a requisite quantity of ammunition; prepared pursuant to an Order from the Right Honourable the Lords Commissioners of the Admiralty of the 26th September 1787" dated Navy Office 9th October 1787, approved by the Lords Commissioners 10th October 1787. Length 48'-6", moulded breadth 13'-6", depth in midships 4'-0".
ZAZ5325/338	"A Draught of a Gun Boat" dated Navy Office 17th October 1787. Length 48'-6", moulded breadth 13'-6", depth in midships 4'-0". Note on back of Draught says "A Gibraltar Gunboat".
ZAZ5326/332	"Draught of a Gunboat as fitted at Portsmouth 1788", length 48'-6", moulded breadth 13'-6", depth midships 4'-0". One mast. Some notes on fittings.
ZAZ5327/332	Rigging plan for a boat with 2 masts at Portsmouth in 1788. Copied to Deptford and Woolwich 23 November 1803. Shows sails, spars and rigging, with spar dimensions. Shown in Lyon's sailing Navy List on page 156. Probably for the boats in 5223.
ZAZ5328/336	Length 48'-6", moulded breadth 13'-6", depth 4'-1". Draught shows 1 mast. Copies were given to Mr Burr on 17 May 1790, Mr Harris on 27th May 1790, Mr Roberts 1st June 1790 and Mr Wallis 27th July 1790. (Roberts and Wallis were also contractors).
ZAZ5332/340	Dated Navy Office 18th February 1793. Sent to Deptford and Woolwich on 7th November 1803 for each yard to build 2 boats. Two masts, rake of foremast changed by an undated amendment, amendment also raises sheer at bow. 5327 is probably the rigging plan.
ZAZ5333/340	Same as 5332, with note saying Draught prepared for the Admiralty 16th October 1803 but never sent. May have been prepared for approval by the Admiralty Board of the boats in 5332, but the Board approved the order without needing the draught.
ZAZ5334/326	"A Plan of the Gun boats Deck" no date or other information, no scale, shows 3 sections and a half deck. 5 scuttles at the bow are annotated "Scuttles for Rowing" and 6 aft of them are annotated "Scuttles for Soldiers"

The deck beams are straight, not curved. The curve of the deck is achieved by separate firings fitted on top of the beams outboard of the coamings, as shown in the sections. The side coamings for the troop spaces are straight but not parallel, they come together slightly towards the stern. The rowing spaces are also inclined towards the centre; all but the aft most have parallel sides.

LATEEN RIG

The lateen rig plans are developed from the original draughts. The spars are simple so I've not drawn them but give the dimensions below. The lateen main mast is 5 mm diameter at the deck tapering to 4 at the shrouds then stepping down to 3 mm up to the top. The lateen mizzen is 4 mm diameter with a step reduction to 3½ at the sheave, tapering to 1½ with a 3 mm button. The yards are 3½ and 2¾ at the point of suspension, tapering to 2 and 1½ respectively at the ends. The outrigger for the mizzen is 100 mm long, 2¾ mm diameter and is stepped on the port side, just outboard of the swing of the rudder head. It would be reasonable to assume similar fittings as for the bowsprit for the outrigger, though it may have been lashed to the mast at its inboard end. There are no shrouds or stays supporting the mizzenmast on the original draughts, though they are well detailed on the main. The bowsprit is 82 mm long and 3 mm diameter.



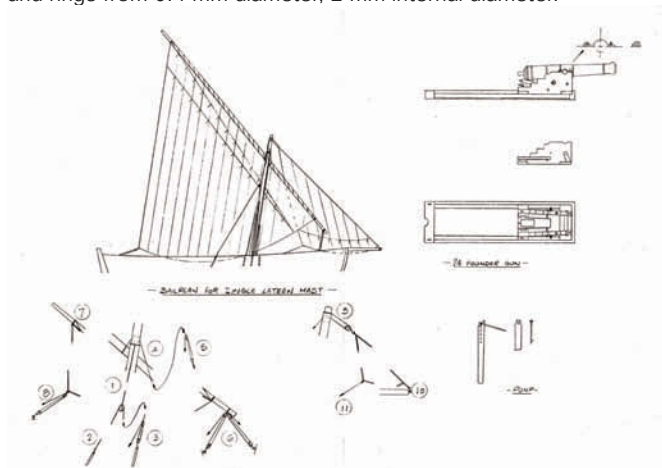
Details of lateen and gaff rigs

GAFF RIG

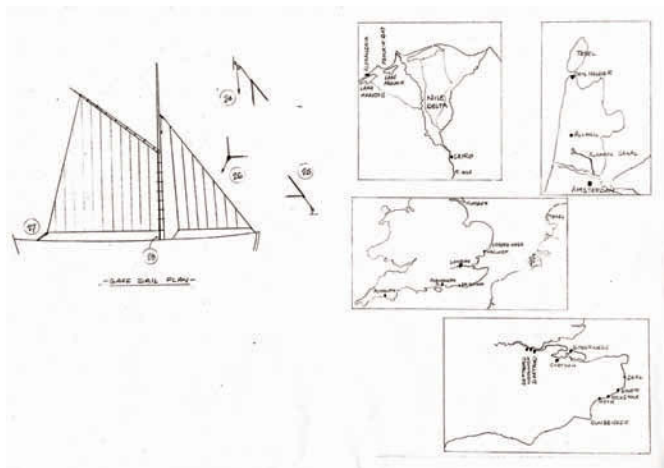
I've collected a fair sized library over the past 30 years, but it was not much help in developing the gaff rig. This boat falls neatly in size between cutters and ship's boats so is not covered by the usual texts. However, I built a model of Chapman's Hoy some years ago and used Fincham to develop the similar rig for that, so I scaled it down for this one; not the ideal solution but typical of the compromise needed when scratch-building unusual vessels.

The vang is split with an eye spliced in its centre slipped over the end of the gaff, each leg then drops to hook into an eyebolt halfway up the inside planking on either side. The forestay is also split, spliced round the mast with each leg seized to a hook hooked into an eyebolt in the aft face of the breasthook at either end of it.

There are no chains as such on the boat, just a 5 mm wide channel carrying two eyebolts. The shrouds are seized to themselves at the mast and seized to hooks hooked into the eyebolts. The backstay runners and tackles are hooked into eyebolts set in the top of chocks at the side. There are no trucks on the parrel tying the gaff to the mast, just a 1/2 mm diameter rope knotted at both ends. Bear scale in mind when making hooks, eyebolts and ringbolts; 2 mm is over 4". I generally use 1/4 mm diameter wire for eyebolts with eyes as small as I can make them, and rings from 0.4 mm diameter, 2 mm internal diameter.



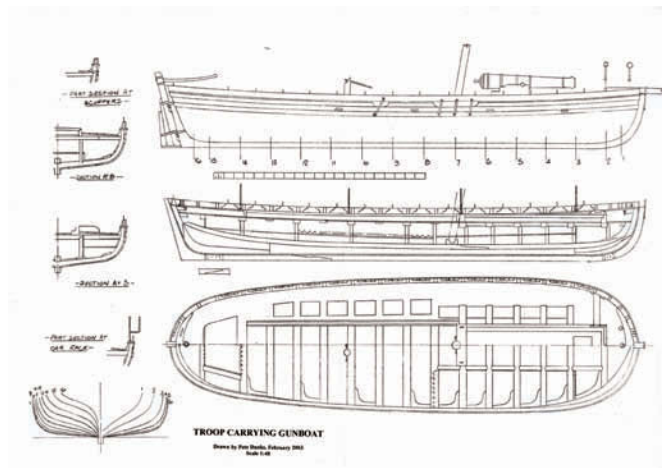
Sail plan for single lateen mast and details of 24 pounder gun



Sail plan for gaff rig and maps

The shrouds and stays are served where they go around the mast, and for an additional 13 mm down each leg of the forestay, and 7 mm on the other ropes. The order of fitting over the mast is forestay, backstay, starboard shroud, port shroud. The mainsail is tied to the gaff with robands, short strops tied to the boltrope and then round the gaff. The sail is secured to the mast with rope hoops.

The following tables give my slightly simplified thoughts on the rope and block sizes, and information on belaying to supplement the drawings. I'd make the sail bolt ropes 0.3 mm diameter.



Plan for Troop Carrying Gunboat

REFERENCES

The Royal Navy, A History from the Earliest Times to 1900, Vol III & IV, William Laird Clowes.
The Naval Miscellany, Vol V, Navy Records Society
The Keith Papers, Navy Records Society
A History of England, Keith Feiling
Sailing Navy List, David Lyons
A Treatise on Masting Ships and Mast Making, Fincham
Draughts of Boats Carrying a Single Gun and Troops in the Collection **MMI**

LATEEN RIGS

No	Description	Rope Dia	Block Size	Belaying Point
1	Main tackle pendant	0.5	4	Seized round mast
2	Main tackle runner	0.4	3	Hooked into aft chain
3	Main tackle	0.3	3	Hooked into middle chain, belayed on cleat in side inboard of chain
4	Main yard sling	0.5		Seized round yard
5	Sling purchase	0.3	3	Hooked in port eyebolt at foot of mast, belayed on cleat on fore side of mast
6	Main yard braces	0.3	3	Hooked on eyebolt on inside of hull, belayed on cleat aft of eyebolt
7	Sail lace	0.25		
8	Sheet	0.3	3	Hooked into eyebolt and belayed on cleat at stern
9	Jib halyard	0.4		Cleat on aft side of mast
10	Tack			Hooked into eyebolt on end of bowsprit
11	Sheet	0.3		Cleat on inside of hull
12	Mizzen yard sling	0.4		Cleat on aft side of mast
13	Sheet	0.3	3	Cleat on top of outrigger on inboard end
14	Mizzen yard braces	0.3	3	As main
15	Sail lace	0.25		

GAFF RIG

No	Description	Rope Dia	Block Size	Belaying Point
16	Back stay pendant	0.5	4	Seized around mast
17	Back stay runner	0.4	3	Hooked into eyebolt on inside of hull
18	Back stay tackle	0.3	3	Hooked into eyebolt on inside of hull, belayed on cleat aft of eyebolt
19	Forestay	0.4	4	See text
20	Vang	0.3		See text
21	Gaff peak halyard	0.4	4	Blocks and end hooked in eyebolts, belayed on cleat inboard of aft eyebolt on port channel
22	Shrouds	0.5	5	See text
23	Gaff throat halyard	0.4	4	Upper block hooked into eyebolt in mast, lower hooked in eyebolt in gaff, belayed on cleat inboard of aft eyebolt on starboard channel
24	Jib halyard	0.4	4	Block hooked into eyebolt in mast, belayed on cleat at foot of mast
25	Jib tack	0.4		Hooked into eyebolt on top of breasthook aft of stem
26	Jib sheet	0.3		Cleat on inside of hull
27	Mainsail sheet	0.3		Hooked into eyebolt and belayed on cleat at stern
28	Mainsail tack	0.4		Hooked into eyebolt at foot of mast

MMI VISITS

A SHINING PEARL: THE DOSSIN GREAT LAKES MUSEUM OF DETROIT

AUTHOR: CHRIS KOENIG

GERMANY



The Dossin Great Lakes Museum is situated at Detroit's Belle Isle

They are commonly described as 'North America's 5th coast', although they are situated inshore in what is also known as 'the heartland'. They sport an impressive 12,000 km of shoreline and an area of 245,000 km², and the vessels navigating them have earned themselves a reputation as Super Lakers. They hold a mere 15% of this planet's water reserve, and about 40 million people can be found living in the direct vicinity of them. Major cities include Chicago, Milwaukee, Detroit, Buffalo and Toronto, while Minneapolis and Montreal are within reach.

'They' are the Great Lakes in North America, forming a vital link between Canada and the US. The big lakes are – East to West – Lake Ontario, Lake Erie, Lake Huron, Lake Michigan and Lake Superior. The Great Lakes' history comes to life in the Dossin Great Lakes Museum of Detroit.

It's 9.30 am, and Dennis Kelly proudly unwraps an American flag. "This is the first thing I do every morning when I am here," the former college professor says. Smiling, his eyes follow the star spangled banner as it gently moves upward on the flagpole in front of Dossin Great Lakes Museum. After raising the stars and stripes, state flags and the flag of the City of Detroit will be raised, too. A Super Laker navigates down the waterway connecting Lake St. Clair and Lake Erie. Dennis glimpses at the huge ship, sailing in the

middle of a waterway serving as national boundary between the US and Canada. "I sailed on one of these for a couple of years. Come on in, and I will show you around in the museum" – an invitation, one simply could not refuse.

The museum consists of two major full size exhibits outside the main building, and a fleet of models and artefacts displayed within. The first full sized craft is the unlimited multi-step hydroplane Miss Pepsi, designed by the late John L. Hacker, a world famous naval architect, between 1949 and 1950, and built by Lester Staudacher of Kawkawlin Wood Production Company. She was the first boat to qualify for races at more than 100 mph! Measuring 36 ft in length by 9 ft 3" in width Miss Pepsi was built utilising spruce, oak, mahogany, teak and aluminium. A massive cowling hides two Allison-V-1710 89/91 engines taken from surplus stock and originally intended to power Lockheed's P-38 Lightning fighter aircraft. Connected by a special gearbox in 2.02:1 ratio, the engines produce nearly 3,500 hp at 4,000 rpm. State of the art at the time, the hydroplane's single 13.5" two-bladed prop is carved from a block of solid steel. Fully fuelled up and lubricated, Miss Pepsi is ready to go with 230 US gallons of 115/145 Octane aircraft fuel and 40 US gallons of aircraft grade oil.



A marvel: the pilothouse of S.S. William Clay Ford



This is what a Super Laker's pilothouse looks inside



The multi-step hydroplane Miss Pepsi was built in 1950



Powered by twin V-1710-Allisons, Miss Pepsi reached 107 mph in 1950



Former US Coast Guard Cutter 40560



Dennis Kelly of the Dossin Great Lakes Museum raises Detroit's city flag



Amanda Marie van Poperin helps Dennis with the Canadian flag

When competing at Detroit's 1950 Silver Cup Race, Miss Pepsi managed an impressive top speed of 107.654 mph. After just twelve races the boat retired in 1952, but returned to the circuit in 1955-56, just to leave again for another seven years. Last sailed in 1963 it became the beautifully refurbished exhibit at the Dossin.

Not quite as fast, but definitely as beautiful is former United States Coast Guard cutter 40560. She now serves as 'gate guard' between the museum and the nearby parking lot. She is an inspiration to model builders as a walk around would not be possible if she were still afloat.

After entering the main building of Dossin Great Lakes Museum, the Gothic Room of the former Great Lakes steamer City of Detroit (III) welcomes the visitor. The City of Detroit (III) was built for the Detroit & Cleveland Navigation Company at Detroit in 1912. A luxury ship of her time, the paddle wheeler offered her male passengers a smoker's lounge furnished in oak and decorated with a huge stained glass window depicting ancient travellers, Indian folklore and early settlers. When the ship was scrapped in 1956, a private collector obtained the precious Gothic Room. When the collection became available in 1965, the Great Lakes Maritime Institute and thousands of donors raised funds and eventually took over the room.



The railroad ferry Pére Marquette 18 sailed between 1902 and 1910, when she foundered off Sheboygan, Wisconsin

The Dossin is known for its extensive collection of ship models and several are on display and rotate annually. Dennis tells fascinating stories about freighters, bulkers, railroad ferries, paddle steamers, pilots, smugglers, tourists and commuters and the 'Bob-Lo' Park. The Bob-Lo was a famous local recreational and amusement park on an island between Canada and the US. Features included a swan boat, photographs of original Bob-Lo Park ferries and their respective models in a multitude of scales. Some vessels are shown in more detail, e.g. the William Clay Ford or the Edmund Fitzgerald.



The 'Gothic Room' used to be the smoker's lounge aboard City of Detroit (III)



The Boys at Ford Trade School of Dearborn, Michigan built this masterpiece of the bulk freighter Henry Ford II (1924-1994)

William Clay Ford obviously was a lucky vessel, whereas Edmund Fitzgerald was not. She was the biggest laker of her time, and set many records navigating the Great Lakes.

William Clay Ford belonged to a fleet operated by Ford Marine Transportation. Between the 1920s until the end of the 1980s the Ford Motor Company's fleet provided transportation means for raw materials delivered to the Ford Steel Plant/Rouge Steel. By the mid-1980s, the fleet had decreased to five vessels, with William Clay Ford being the largest one. Each year more than 6.5 million tons of iron ore, coal, dolomite and limestone were shipped to Rouge Steel. When William Clay Ford was to be scrapped, her pilothouse was saved and now forms a vital part of the Dossin Museum.



Originally built as Mary C. Elphike in 1901, this vessel was converted to an automobile transport in 1936, when shipping cars from Detroit to the world became more common. T. J. McCarthy sailed until 1966



The Georgian Bay Line operated three luxury cruise ships on the Great Lakes. South American (1914-1994) was one of them



The Detroit River's favourite passenger ferry to Bob-Lo was Columbia, built in 1902



Photo of Britannia, a Bob-Lo ferry that sailed 1906-1943



Bow view of the popular passenger ferry Columbia



Map of Bob-Lo, an amusement island at the shores of Lake Erie



Built in 1910 and measuring (L x W x D) 181 x 50 x 15 feet, Ste. Claire was the last of the large Bob-Lo boats built for the Detroit, Belle Isle and Windsor Ferry Comp



Swans like this one had been all-time favourites amongst children in Bob-Lo

During an ultra-violent gale on 10th November 1975, the Fitz sailed Lake Superior. She had left Superior (Wisconsin) and was destined for Detroit, with a cargo of 26,000 tons of iron ore. Following her was another Super Laker, the Arthur M. Anderson. Aboard that ship a fairly young helmsman was standing behind his wheel, and became an eyewitness of a tragedy. The helmsman visited the Dossin while we

were there and told a story of waves being taller than the windows of his pilothouse. All of a sudden, the lights of Fitz were gone – and so was the ship. His vessel immediately radioed distress signals and looked for survivors. The crew of William Clay Ford also volunteered to leave the safe haven to search for surviving crewmembers. However, nobody could be retrieved.

The Dossin Great Lakes Museum celebrated its 50th birthday in 2012 and is situated at Strand Drive, Belle Isle, Detroit/Michigan, USA. Opening hours are Wednesday-Saturday 10 am – 5 pm. Please refer to www.detroithistorical.org/main/dossin/index.aspx for additional details. Thanks to Amanda and Dennis! All pictures by author, any reproductions are full courtesy of the museum. **MMI**



Sorry for the reflections, glass covered models are tricky. Picture of Ste. Claire



Try it! Amanda Marie van Poperin tests all whistles



Former helmsman of Arthur M. Anderson tells Dennis Kelly about the fateful night when Fitz sunk just in front of them. The astonishment in Dennis' eyes needs no explanation



Launched at the Great lakes Engineering Comp. in 1958, Edmund Fitzgerald vanished 10th November 1975 on Lake Superior



Painting of a Great Lakes luxury paddle wheeled steamer at night



Unloading bulkers was extremely labour intensive. Conveyor belts allow unloading without men working in the cargo hold, as is represented by a model of Detroit Edison



No wonder ships like William Clay Ford are called Super Lakers

Combining marine modelling and fishing at a serene Lake, Bonnie Doon, Victoria, Australia



INTERCEPTOR

A NOVEL WAY OF FISHING?

AUTHOR: JOEY DEMCZUK
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Fishing will never be the same after you try it with Glen Wilson's remote control fishing boat. This ingenious invention took him three years of development and, after eight models, he has now built a prototype which has caught over twenty fish so far including golden perch, Murray cod, silver bream, English perch, and European carp.

HISTORY

A pest controller by day and an inventor by night, he started building remote control fishing boats after he bought his son (at least he claims it was for the child, his wife seems to be of a rather different opinion) a toy speed boat online and after adding a fishing line he found himself pulling it apart and improving upon it. The first version was a small and what he calls a primitive type made of wood and powered by a brushed motor. A red and blue boat made from balsa wood, was the first remote control boat he ever built, but it had no fishing rod. The second one evolved into a remote control fishing boat, which he sold to a content fisherman. Three years and eight models later he has developed a prototype, capable of fishing independently with a range of 100 metres.



An early boat conversion



R/C range beyond any fisherman's cast



Flame decal'd twin propeller model



The Interceptor seeking fish with its line out



Rear buoys assist in turning the craft

SPECIFICATIONS

Driven by a brushless outrunner motor and equipped with a 12 inch propeller, this sweet water boat can proudly announce its biggest catch yet, an 8 lb carp (3.6 kg).

It has a 50 A speed controller and twin 7.2 V high capacity Venom batteries joined to make 14.4 V. The transmitter is a 2.4 GHz ParkZone married up to a Hi-tec 3-channel AR500 surface receiver. The gearbox for the fully functional fishing reel runs on 12 V (24 kg of torque) and sits in its own watertight compartment. The Interceptor weighs in at 15.2 kg when fully loaded with all the batteries and the camera. He even included a camera bay where Interceptor's adventures can be viewed on YouTube via the link: <http://tinyurl.com/aswp5lq> (or search YouTube for Gleno2008). Despite its water displacement the craft is still very buoyant with sealable compartments. A feature of the design includes aerial stabilizer floats at the stern, which prevent the boat from submersing when pulling in big fish.



The balsa hull is running out of space to tally the catches

The boat is also fitted with navigation lights, which blink green and red and a large 12 V LED down light that shines down to the back of the boat for night time fishing.

His boat is hand made from scratch out of balsa wood, aluminium, stainless steel, brass, glass, and whatever else he had lying around at home.

How does the Interceptor not go under when it pulls in an 8 lb catch you may ask? It is equipped with a self-deploying emergency flotation device which unravels automatically should it be pulled under water by a large fish.

FUTURE

Glen Wilson of Mooroopna is not done though; his next project will feature an underwater propeller with ballast that should be robust enough to be used in saltwater fishing. Some further improvements will include the use of Arduino circuitry to remotely alarm the pull of the line via Radio Controlled Telemetry sensor feedback. This will also return the craft, on autopilot, back to base then return to the same spot again using its own GPS.

EXPERIENCE

All these specifications don't tell you anything about the boat until you have a chance to use it. So, what's the experience of fishing with the Interceptor like?

First and foremost you will notice its great range of coverage and that it can move in two dimensions, the boat can be pushed away from you, which is impossible with a normal rod unless you recast. The Interceptor can get close to those fishing hotspots around tree trunks, reeds and rocks, where fish like to 'hang out' and that are quite hard to get to, without getting your line caught. Would you swap your traditional fishing rod for the remote control fishing boat altogether though? Well, fishing with the Interceptor won't guarantee you a secure catch, but what fishing method can ever promise you that? If adding extra lines improves your chances of catching a fish, then why not add the Interceptor to your collection? It can guarantee you one thing for sure: you'll have lots of fun trying to get a fish on the hook! **MMI**

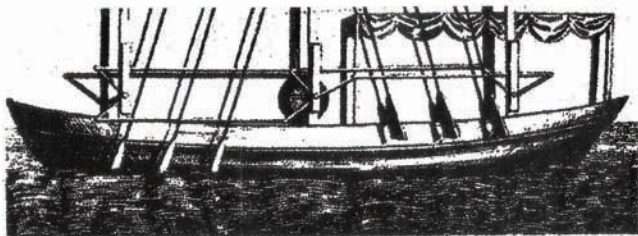


Over twenty fish have been caught

THE BEAST

MICHAEL DESCRIBES HOW HE BUILT A MODEL OF THIS VERY UNUSUAL CRAFT HAVING LITTLE INFORMATION ON THE ORIGINAL AND A COMPLEX DRIVE SYSTEM TO DEVELOP

AUTHOR: MICHAEL J SHEPPARD



MY PLAN

AMERICA'S FIRST POWER BOAT was a 34-foot craft designed by John Fitch in 1786. It was driven by 12 vertical oars connected to a steam engine in such a way that they alternately dipped in the water for a stroke and were then lifted out and carried forward for the next stroke.

The information which inspired the building of The Beast

RESEARCHING THE ORIGINAL CRAFT

What is it? Well it's the start of all things maritime with an engine, as we know them. It was in the late seventeen hundreds when a chap in America called John Fitch first put a steam power plant into a boat hull, 34' long, double ended, and had, I believe, been a sailing boat. The steam plant, for those into that sort of thing, was a 'crankshaftless' (yes that's right) atmospheric item and I believe it had a block of wood for the piston. Sorry, I'm not well enough informed to be able to explain any further. A form of ratchets, cranks and levers did the actual power transfer. The vessel is documented as having achieved about eight knots, which says all that needs saying about success or not.

Of course at that time, propellers and paddle wheels had not been invented. Not surprising really, as so far no application had been found for them. So he used, shall we say, Indian style paddles; twelve of them. Crude it may well have been, but very clever for all that. He balanced the power load out by only dipping half the blades in the water at each stroke thus when the front six were wet the other six were fully out of the water. His ship is considered to be the world's first steam powered paddle ship.

Now with my longish history of rowed and paddled models (see many of them on YouTube, Michael J Sheppard) I just had to have a go at it. A couple of chaps, Bob and Harry, got involved, encouraging me. Both are friends living in The Wirral. Harry did a considerable amount of the original research (before I got onto the Internet) and between us we sorted the basic design of the power gantry. That's a very swift gloss-over of the discussions, by phone, often as not arguments as to how to get it to work. No original plans were available, having apparently been destroyed in a fire many years ago. Little or no help was to be had from many of the sketches (see heading illustration) and photos of models obtained via the magic box. Some models obviously could not possibly have worked properly, and were intended only as static display. Many seemed to have, for one reason or another omitted the long drive beams, which would have resulted in the paddles not performing

a complete revolution. They could only have rocked, dragging the ends in the water and so could not have worked (one claimed to be a museum piece).

BUILDING THE HULL

The pictured hull/frame was in fact the second attempt. The first had been a flat-bottomed; slab sided brute, rather like a canal barge. In other words I was lazy. I don't like making hulls at the best of times. Eventually, as the ugliness became apparent and I accepted it was far from good enough, I STAMPED ON IT. Then I started again by drawing some proper looking frames. The hull design is imaginary. I knew from research it was double ended and of a rounded form, about 34' long. My hull is 5' long, just about 1' wide and near to 6" deep. The frames were made from 8 mm ply, cut with a jigsaw. The end ones, slightly smaller were cut out and jiggled into place until they seemed to fit. If I ever do the job again I'll use two at each end to make the planking easier. You can also see the first of the planking, which is 3/32" semi hard balsa sheet. Please excuse the standard tidiness of my workshop. A friend of



Keel and frames used in the second attempt at a hull



The hull is planked in balsa strips

mine admits he spends more time tidying and cleaning than he does building, NOT a discipline I ever intend to follow.

The remaining planking was simply done by cutting strips of balsa between 15 mm and 25 mm wide with staggered scarf jointing to sheet over the frames. No serious attempt was made to do an oh-so-careful-a-job. It was going to have glass fibre each side of the timber and then a heavy paint job to fully support the lead ballast. I'd sort of accepted in my mind that it would take some considerable weight to take it down to a realistic water line. Experience to date with rowed and paddled models has suggested they need to be fairly heavy to stop them bobbing about on the surface of the water like a cork. Stability gives a much better performance.

SEALING THE HULL AND BALLASTING

The finished basic hull has the outside glassed over with that very fine woven glass cloth and epoxy resin, the same stuff as used by our aeroplane cousins to skin their plane wings and tailplanes and of course some fuzzes as well. The inner glassing was far cruder, simple polyester resin with fine CSM. Not a tidy material to work with but I was far more concerned with the structural integrity of the hull.



Ready for the fibreglass covering, inside and out

The stern pillar is at the lower end and I didn't yet know the shape or size of the rudder blade. The next job was a visit to the builder's merchants for a roll of new, clean, sheet lead. I bought an 11 kg roll about 250 mm wide for about £40. The model was placed in the on-site test tank (fish pond) and the roll of lead slipped in under the deck beams to get a sort of mental picture as to the state of things. It was going to need all 11 kg plus my estimated build weight, to get it down to a realistic level. The lead was then cut carefully into suitable size pieces and glued in between the frames with polyester resin.

The reason for this approach was that one fine day, if things turned out successfully the deck would be removed and a major rebuild would take place to replace the electric drive motor etc. with a steam plant. I've got the engine in the form of a Stuart Turner D10 all ready and waiting on a shelf. The original you should understand was an open boat. The decision to incorporate a full deck in the first build was simply as a trial run and to make life easy for me.

DEVELOPING THE MECHANICS

Many hours of brain lubrication (coffee for me) was involved in the detailed planning of the power gantry. What should it be made from? How big? How heavy? How strong did it need to be? Plus all the tiny though very relevant details like, what bolts? What glue? Etc., etc.

The first trial rig was made from odds and ends, even including a few bits of cardboard. Nothing I'd made previously in the modelling



The mechanical unit being built on a board, which is actually the centre deck area

world, nor in my previous occupation of designing and making aids for disabled people seemed to be of any practical use. But thinking and planning, making small steps forward eventually produced results. One thing I did buy was a new Proxxon, small circular saw. Costly? Oh yes. Beautiful? Yes again. Accurate? Most definitely. It proved to be a jolly good investment. It was now possible to cut wood to a fine tolerance and with a very good finish off the blade, even allowing me to modify them to suit my evolving design. The saw cut faces really were very good, very few needing further sanding. The timber used was Iroko as my first choice of mahogany was no longer available. Originally Iroko was known as a poor man's teak.

One thing I decided fairly early on was that the whole unit would be fully sectional. Bolted or pinned together, as opposed to gluing everything tight. It could then be easily dismantled for modification as and when circumstance or new thinking dictated. I hope you understand by now that I was swimming in very mucky water and totally unsure as to where I was going.

The first set of parts, for one side of the gantry got cobbled together and a set of cranks was then produced. This you understand was a trial run, rehearsal. I needed to see that it really did work. It did, but I soon found that it needed to be made far more carefully. It was tight in one spot and needed a lot of slack in the bearing holes to free it up.

Eventually I had the first proper build of parts that would go forward into the model itself. It was soon found that the cross-drive shaft needed to be telescopic to get it in and out, arranged with a spell on my lathe. Then a set of gauges were made so that all the drilling was compatible with each other, a bit like the drive shafts and wheels on a steam loco, though I suspect they have to be even more accurate. A detailed design had to be worked out to assemble and disassemble the oar beams and the long drive beams when it became time to incorporate them. One way, though discarded, was to use split bearings. I was not over keen on that method. A lot of work and care needed to be exercised in making them. For my money, too much to go wrong as I'm not a trained engineer; an amateur; a dabbler, as they say.

You can see in the photo that the unit is being built on a board. This is in fact the actual, cut to size, centre deck area. It is designed to simply drop into place on the model when the time comes and fixed with just six small brass screws. One thing at about this time generated a re-think. The cranks had been held together with 4BA socket grub screws, which proved not to be man enough as some of them kept coming loose. They were all replaced with 5 mm socket grubs, which was a monster task as the whole rig needed to be disassembled right down to individual pieces. None have given any trouble since. I did give each thread a careful dab of thread lock. Shafts of course were all flattened at appropriate points.

OK, yes a few needed to be moved around slightly. All shafts by the way are 3/16" (5 mm) mild steel rod. Permanent joints were all hard soldered in a specially devised jig so as to get them square to face. All bearings are 10 mm bronze, cut and drilled in the lathe. These were all then pressed into their drilled housings using my bench vice as a press.

I did cheat slightly on one aspect. You can see it on the underside of the long drive beam at about the middle of the picture. It shows as a thick black line lashed to the wooden part. The black is a section of carbon and alloy arrow shaft. Very light weight and very stiff, both being essential attributes for that beam. My thinking had been that as these beams would be thrashing around and providing the power to drive the oar beams, they might be inclined to create an out of balance situation. Those beams are about 60 cm long between centres. The large section oar beams 1' or 300 mm long between bearing centres. All are gauge drilled as mentioned previously.

THE DRIVE SYSTEM

Modification Number something or the other was performed. The gantry height was reduced by about 60 mm and the board dropped neatly into place as planned. The electric motor is also visible; it is a second-hand, car, rear wiper motor (they are slightly smaller than the front ones). The drive crank on the motor was replaced by a chain sprocket, and it was a fairly simple exercise on the lathe to turn up an appropriate hub. The corresponding sprocket on the cross drive shaft has been hidden between two crude, turned wooden discs. The chain and sprockets, about half size compared to a bike chain, came from Model Motors Direct (Tel: 01747 812440). Wiper motors are notoriously thirsty so two large capacity (9 Ah) battery packs were obtained from Component Shop (Tel: 0843 289 8528). Now whilst on the subject of equipment I'll include the speed controller. Like most of my models it has an Electronize controller (Tel: 0121 3087411), I like these units. Some I have specially factory modified for rowboat configuration. What happens is: the unit is programmed to allow the rowing crank to turn at two different speeds per ONE WHOLE REVOLUTION of the crank. This facility is adjustable. It allows for a slow recovery of the stroke and a good hard pull on the looms for the power part of the stroke; just like we do full size.



The drive system attached to the hull

Pretty well everything important was now loaded aboard and the model lowered into the fishpond. It was near to level and down as near to the intended mark as one could wish for. The engine cover box is included, though why it should be back to front I do not know.



Checking the setup and buoyancy on the home pond

The size of the paddle blades had been giving me some head scratching, as research had produced no useful information. So it was down to experience and that old standby, imagination. The loom lengths below the pivot points had been left deliberately generous allowing the length to be determined when fitting the blades. Although a good depth of wetted area is most desirable, so also is a good clearance between the water level and the raised position of paddle or oar blade, and you sure can't have both.

My experience to date regarding blade sizes and depth of wetted area, suggested they be made as large as could reasonably be got away with. It being easier to reduce any excess later, and square across the bottom also seemed a good idea for these. Lengths of 8 mm quadrant were then glued down each outer edge to avoid as much slip as possible (that's water slipping off sideways and not producing any power. You have seen curved blade tips on racing blades). Experience also suggested the blades should be screwed to the loom stubs, not glued. This precaution should result in them being knocked off, without a lot of peripheral damage by the sides of pond. (NOTE: The blades as first fitted have never been altered. Good guessing? Or was it luck? Your call).

THE RUDDER ASSEMBLY

The picture shows the rudder assembly. I say assembly, because to my way of thinking, it needed to be dismantable for transit and storage. This took quite a lot of planning. From experience I knew the rudder needed to have as wide a sweep as possible. The stern deck area was not wide enough to accommodate the sweep of the tiller, and the crew member whose hand will be on the tiller, cannot bend as far as would be needed, a person would of course walk. So, an executive, high-level decision was reached, the tiller would not actually move.



A clear view of the rudder assembly and paddles

The rudder is operated by what is called a closed loop and uses a standard servo. As space is very limited in the after end of the hull, both exponential and differential components of operation were incorporated. The latter is simple enough to understand, it means that the fixing point onto the moving part (rudder) is beyond the centre (hinge point), aeroplanes often use this so that the ailerons move more one way than the other, usually giving more up than down. With closed loop, both sides get the same travel. Exponential, for those who don't know, is achieved with a specially shaped cam and as far as I'm aware exponential can only be achieved with a closed loop system.

In this instance the tiller arm actually retains the rudder on the pintols and is held itself by a small brass nut. This way the rudder can be very quickly unshipped for transit. A generous rudder extension was made to clip on in case trials proved the need, however, although the turning circle remains large, I've never used the extension.

With the oar banks split apart as you see them in the photo; it is easy enough to imagine them turning anti-clockwise. As the front ones go down, so the rear ones go up. They then power the model alternatively. Clever? And this was 1786/7.

THE CREW

My crew were all bought in. Yes, near to £70 worth, with more to be added at the planned rebuild, detailed later on. Making the figures is easy enough BUT, fiddling about dressing them would have taxed my ability and patience beyond acceptable levels. I did, however, make that chap's top hat. The one that came with him was unusable. I've had an Email from a contact in the USA who says, "Top hated chap could not possibly be Fitch 'cos he was a scruffy, cove." I've also been told there is a photograph of my model to go on the wall of the Fitch museum. I get the majority of my small figures from The Dolls House Emporium (Tel: 01332 912989).



The model people bring the craft to life

MOVING THE BEAST

Off to a show somewhere. The wheeled stand/trolley was made originally for my 66-oared Mediterranean galley. Then the trolley got a second tier. It works fine but with The Beast and others aboard needs careful handling, especially coming down the ramps. Both the galley and The Beast are big models and are difficult to handle by one person. Neither is heavy, just a bit ungainly.

RE-DESIGN OVER WINTER

Over the winter months of 2011/12 The Beast was stripped back to the basic hull and the deck discarded, a new floorboard level was installed to create an open boat just like the original. The new boards were fixed to the frames just above the lead ballast. Now, was the time I'd promised myself that the steam engine D10 would



Safe transportation is always an issue



Almost ready for the water

go in along with all the other essential gubbins. I know little or nothing about steam, so had a bit of a conference with myself, what to do? When in doubt do nothing, as the Politian's say. The electric motor was reinstalled, though now at a different angle and a new box casing made.

A dummy boiler was constructed with thin wood strips being glued onto a light alloy box shape with a rounded top rather like an old fashioned steamer trunk. That tall and stately smoke stack is in fact a discarded cardboard roll. I admit the smoke diffuser on top is possibly not authentic (my boat, my choice), but I fancied making it. The material used is litho plate, as used in a printing process. It was drawn and cut out with a small pair of curved scissors and then shaped and glued into place. A thin coat of epoxy glue, stiffened with talcum powder finished it off. Inside the boiler is an oil fired smoke generator obtained from Graham at Hunter Systems (Tel: 01323 503336).

You can see some new crewmembers scattered about. I think they are investigating some worrying clanks, creaks and groans emanating from the structure. One chap is being most helpful and offering a spanner or big hammer to solve the problem. The white cords across the deck need explaining, they are used simply to tie model and stand together for transit.

For those who would like to investigate further, go to YouTube, John Fitch Steamboat by Michael J. Sheppard
Happy boating. **MMI**

 GERMANY

LUFTWAFFE FLIGHT OPERATIONS BOAT MARS

AUTHOR: CHRIS KOENIG

CHRIS OUTLINES THE STORY BEHIND THE '40 K' FAST ATTACK CRAFT AND DESCRIBES HOW HE BUILT A MODEL OF THE LUFTWAFFE FLIGHT OPERATIONS LAUNCH FL. F I MARS



Starboard view of Luftwaffe Flight Ops. Launch Fl. F I Mars

THE ORIGINAL SPANISH CONNECTION

While the vast majority of German Luftwaffe Flight Operation Boats and Launches in WWII were of a German origin, the class Fl. F I was not. It stemmed from France and the United Kingdom, depending on your personal point of view. The class Fl. F I was based on the French fast attack craft called 40 K, initially designed by French naval architect M. Picker for a Spanish contract.

During the Spanish Civil War in 1936/37, the Spanish Republicans had been looking for suitable fast attack craft, but, unable to find the desired boats approached Aero-Marine-Engine Ltd. at Kent House, Telegraph Street, London EC 2. Aero-Marine-Engine Ltd. showed an interest in taking on a contract to deliver fast attack craft. A vital link between Aero-Marine-Engine and the French Chantiers Naval de Meulan yards of Meulan, France resulted in their chief designer, M. Picker taking over the task to develop the craft. Consequently, several different designs emerged,

including a 'Vedette de Haute Mer' (a fast craft for offshore use) or a 'Vedette Lance Torpilles' (an MTB), as well as an unarmed version for customs patrol services. Very obviously all designs incorporated the space needed to install an AA-gun forward of the bridge and possibly two torpedo launching devices. However, within a short time twelve boats were ordered and the contract was split to allow fast delivery. Three French and a British yard started to build 40 K craft:

40 K/1 – 4. Les Chantiers Naval de Meulan, Meulan
40 K/5 – 6. Les Chantiers Jouett & Cie., Satrouville
40 K/7 – 11. Les Chantiers Romano, Antibes, and Aero-Marine-Engine Ltd.
40 K/12. Aero-Marine-Engine Ltd. and Les Chantiers Romano, Antibes



Wartime shot of a 40 K boat (SA I – IV series). © Dirk Tjalsma, Rijs/NL



When cruising, early 40 K boats could lower their mast, as may be seen on this summer 1942 shot. © Dirk Tjalsma, Rijs/NL



When designed in the late 1930s, the boat's lines were extremely progressive. © Dirk Tjalsma, Rijs/NL



Germany's Kriegsmarine did not use the boats in their designated role but rather for surveillance and training duties. Picture was taken ca. 1942/43 by Dirk Tjalsma's grandfather. © Dirk Tjalsma, Rijs/NL



DKM crew aboard a former fast attack craft of the 40 K type. © Dirk Tjalsma, Rijs/NL



Powered by four huge Lorraine 12 H Pétrel gasoline engines, a 40 K boat approaches the Seine at Paris, France. © Dirk Tjalsma, Rijs/NL

incorporated six engines of 2,200 hp in total! When cruising around, the boat was capable of 15 knots, driven by two six-cylinder gasoline engines each rated at 100 hp and built by Société Lorraine of Argenteuil, France. Both engines were connected to a transmission driving two shafts. For combat runs the six-cylinder cruising engines were switched off and another four high power engines took over. Picker developed the idea of four twelve-cylinder gasoline engines delivering power to a transmission system driving the two shafts. Each of the four Lorraine 12 H Pétrel twelve-cylinder engines installed was rated at 500 hp. These power plants had been designed as 60°-V-engines, and hitherto had powered experimental aircraft. With water-cooling, super charger and gear train assembly attached to the crankcase as was standard

POWER AND PERFORMANCE OF THE 40 K CRAFT

Harald Fock, a well-known naval officer and historian who used to be a lecturer at the German Naval Academy (Marineschule) Flensburg-Mürwik wrote several books on fast attack craft. In his book 'Schnellboote', volume 1, Harald Fock lists the main dimensions of the 40 K series as 20.20 m in length, 5.00 m in width and a draught of approximately 0.90 m. According to him the displacement was calculated at 23 tons, although another 7 tons of fuel, ammo, torpedoes, weapons and crew could be added. Two 18' torpedoes, a single 3.7 cm AA cannon in front of the bridge superstructure and another machine gun mounted in the elevated gun position behind the helmsman made 40 K a dangerous weapon. With a crew of two officers and up to six NCOs and ordinary soldiers, the designs seemed to offer enormous firepower operated by just a handful of determined men.

A fast attack craft falls short unless its main weapon is speed. Picker's 40 K design



Off duty, sailors pose aboard a DKM SA I-V series boat at Horten, Norway. © Dirk Tjalsma, Rijs/NL

for fighter engines between the wars, Lorraine's 12 H Pétrel sported these details, too. All four engines driving the two shafts easily propelled the craft to 40 knots. Picker's design reached the intended speed and manoeuvrability right away. To top these already compelling results test runs were ordered and one boat was sent for intensive sea trials off Honfleur during July 1938. A few engineers manned the recently finished 40 K/6 and unleashed the 2,000 horses held captive in the engines' crankcases and achieved 45.8 knots. An idea then struck the crew. What would the boat be capable of if all unnecessary weights and weapons were removed? In a calm sea with a fully fuelled boat they reached 53 knots.

By now the French navy took an interest as Aero-Marine-Engine Ltd. and Les Chantiers Naval de Meulan had come up with a superior fast attack craft. Another boat was to undergo test runs – 40 K/9 – which was also evaluated by the Royal Navy. It is understood that the results, without weapons, resembled those of 40 K/6. In due course the engine power was increased to 2,400 hp as the Lorraine's Pétrel-power plants had evolved to variants 12 H frs (720 hp) and 12 H ars (860 hp). However, Lorraine's power plants wore down the transmissions on a regular basis and kept the boats unusable for long periods in their service life.

THE INFLUENCE OF WWII

Everything seemed ready, but then a weapons embargo hindered the delivery of any of these fast attack craft to Spain. Nearing completion of 40 K/1-4, Chantiers Naval de Meulan was forced to realise by December 1938 that delivery to Spain was but a dream. In the meantime Germany was about to unleash another war in



Camouflage is always a bit tricky. This shot depicts three 40 K boats, and each one seems to sport another grey. © Dirk Tjalsma, Rijs/NL

Europe, a situation which became a reality by the end of 1938. However, the yard's personnel continued to work and expected to deliver one 40 K boat each three months until September 1939. When they were about to finish their contract, WWII broke out.

German forces did not invade France right away, but by May/June 1940 they literally overran the Netherlands, Belgium and France within weeks. After defeating their French opponent, German naval intelligence officers checked out all yards in order to find the superior and much needed fast attack craft. A variety of 40 K craft were discovered and Commander Graef of the OKM Oberkommando der Kriegsmarine ordered the French yards to hastily finish these boats. Designated 'Schnellboot Ausland' (foreign fast attack craft) and abbreviated SA, nine vessels were completed for DKM:

SA 1, ex. 40 K/5. Built by Les Chantiers Jouett & Cie. at Satrouville and completed in April 1941. Patrol boat at Abwehrleitstelle Le Havre until 1942, when the boat was re-designated FH 24 and used by harbour patrol flotilla at Le Havre, France

SA 2, ex. 40 K/8. Constructed by Les Chantiers Romano, Antibes, and finished in September 1941. Originally intended for DKM's Admiral for Norway, boat became FH 25 in 1942 and sailed for harbour patrol flotilla at Le Havre, France

SA 3, ex. 40 K/9. Completed by Les Chantiers Romano at Antibes by October 1941 and intended for Admiral of Norway. Lost by 24th March 1942, off Borsmose, Denmark

SA 4, ex. 40 K/10. Delivered to DKM by November 1941, after completion by Chantiers Romano, Antibes. Used to train new crews, boat was redesigned to FC 40 in 1942 and used by harbour patrol flotilla at Cherbourg, France

SA 5, ex. Serie 40 K/1-4. One of the original Les Chantiers Naval de Meulan-boats, the craft entered service at a training unit in Le Havre in Oct. 1941. By the spring of 1942 SA 5 was renamed FK 2 and served the harbour patrol flotilla Kanalküste (Channel coast)

SA 6, ex. 40 K/11. Delivered to AA – and Coastal Artillery School in April 1942, this boat was built by Les Chantiers Romano at Antibes

SA 7, ex. 40 K/12. Another Chantiers Romano-boat, SA 7 was damaged shortly before delivery and had to undergo extensive repairs. Delivered in June 1942 and designated FK 3, the craft was transferred to AA and Coastal Artillery School in 1943

SA 8, ex. 40 K? Delivered to DKM by June 1942, this boat stemmed from Les Chantiers de la Loire, St. Nazaire. Early in 1943 the boat was renamed FK 58 and navigated for harbour patrol flotilla Kanalküste

SA 9, ex. 40 K? Another boat from Les Chantiers de la Loire, SA 9 saw delivery in July 1942 and was also transferred to harbour patrol flotilla Kanalküste in 1943, renamed FK 59

Besides these nine vessels another two failed to escape to the United Kingdom and were confiscated by DKM. However, DKM handed over both craft to the Luftwaffe. They formed a new class of Luftwaffe flight operations boats called Fl. F I. Although Luftwaffe flight ops boats usually carried an abbreviation of their class code and corresponding numbers, these craft received names: Mars and Jupiter. Both allegedly stemmed from the Meulan-production series 40 K/1-4. Luftwaffe officers showed themselves deeply impressed by the speed – any downed aircrew could be reached within minutes with these extremely fast boats (provided the transmissions did not jam). Not surprisingly Luftwaffe asked Les Chantiers Naval de Meulan to produce another ten boats, although only seven can be clearly tracked. DKM operations of 40 K boats ended by the end of 1943, while the flight ops boats of the Fl. F I class saw intensive action until at least June/July 1944 on behalf of the 'Command of Distress at Sea' (Seenotdienstführer) 2 (south) and 3 (west).

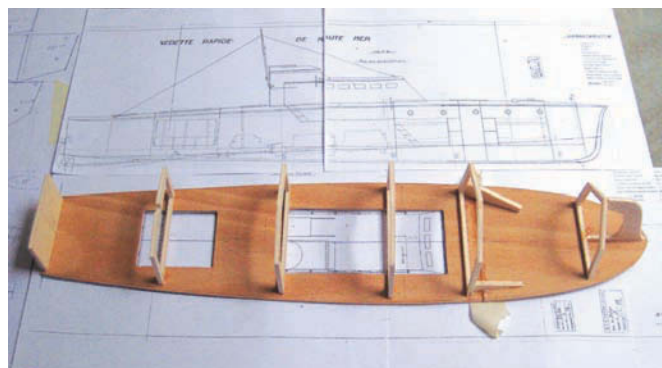
Luftwaffe flight operations boat expert Christian Grams of Wedel, Germany, tracked a 40 K design which became part of GM/SA

German Mine Sweeping Administration in March 1946. Named Flyer (author's note: what a true name!), she sailed for the French navy in 1952 and was called VED 620 or Y 620 after 1955. Not too bad for a design constantly suffering from transmission failures.

MODEL

The other day I attended a business meeting and the keynote speaker explained that so-called social networks were nothing else than "capitalistic networks". In the end, somebody wants to make money – there is nothing such as true intrinsic motivation to share anything. He made his point quite clearly. However, his perspective may have been a bit biased as I experienced quite some assistance from fellow modellers through networks on the Internet. I wanted to build a model of a 40 K French/Spanish e-boat design stemming from an Anglo-French yard ever since I knew about their existence, but failed to obtain any photos or even plans for nearly two decades! Then I decided to join www.forum-marinearchiv.de and analysed www.historisches-marinearchiv.de, which both allowed me to virtually meet people with the same interests.

I eventually got in contact with Dirk Tjalsma of Rijs, Netherlands, whose grandfather used to sail on various specimens of the Schnellboot Ausland in WWII. While serving DKM, Dirk's grandpa



Bulkheads and deck made from plywood will be covered with balsa



Made entirely from wood, GRP was used to strengthen the hull



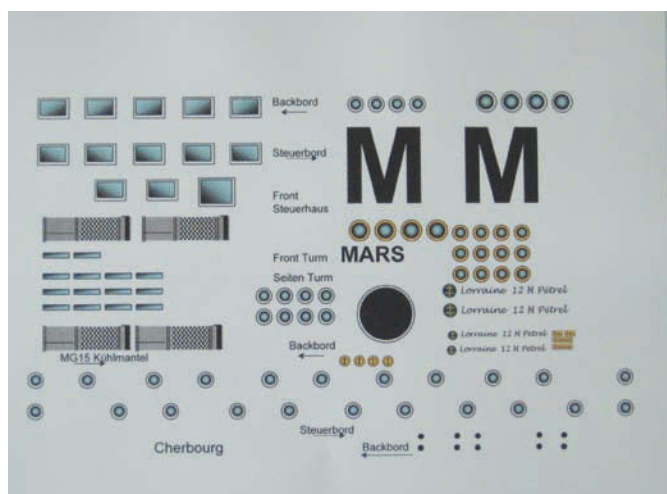
Balsa deck and a plywood cabin give an indication of the boat's future looks



After finishing the majority of wooden and metal parts, the boat received several layers of primer and paint



The deckhouse seals off the opening to access the R/C equipment



Decal sheet made in Microsoft Powerpoint

took a bunch of pictures between France and Norway, and Dirk allowed me to analyse the vast majority of them. Further, he assisted in getting plans of 40 K/ 1-4, supposedly stemming from Aero-Marine-Engine Ltd. and Les Chantiers Naval de Meulan, dated 12th July 1937! The plans indicate the boat would have become a high sea MTB as its header is Vedette Rapide de Haute Mer (S/N 40 K/2), Dessin Nr. 1651. With a plan at 1:20 scale available building a R/C model of Mars (Fl. F I) was easy.



Extra firepower was provided by MG 15 machineguns

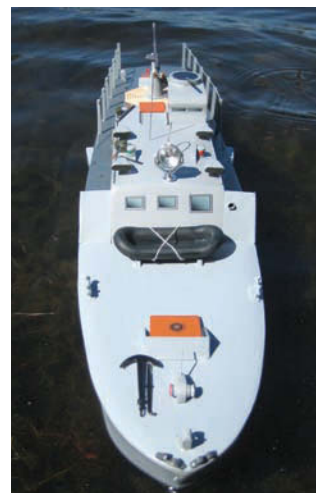
Based upon the 40 K/2-material and Dirk's pictures I designed a couple of formers, which then had to be cut from ply. Along with a sturdy deck, cut also from plywood, a balsa nose cone and some balsa sheeting to cover the frames resulted in the wooden hull being completed in less than a day. A thin layer of polyester and well soaked 80 g/m² glass fibre was applied to the inner side of the hull to strengthen the construction and make it absolutely waterproof. Sanding and applying four layers of protective coats to the outside of the hull finished this part of the project.



Built from balsa and brass: anti-aircraft gun 2 cm Flak 38



The slim lines reveal the late 1930s Anglo-French origin of the type 40 K



The raised deflector seems to stretch the forecastle

The superstructure was formed using ply for vertical surfaces, while balsa made up virtually all horizontal surfaces. All hatches, vents, the windlass, bollards, the weapon mount etc. were made from ply and balsa sanded into shape. The rudder assembly was soldered from brass and is not true to scale. This small boat runs best with a single rudder, a single Graupner 6 Volt Speed 400-motor and a single prop. The paint job and self-made decals transformed the wooden construction into the flight operations boat Mars as she appeared by 1941/42, serving the Seenotdienstführer (West) based at Cherbourg, France. **MMI**



Original visibility was poor, thus Luftwaffe enlarged the helmsman's window



Luftwaffe boats seldom sported a name but Mars did



Meant to protect the crew from spray and mist, the deflectors keep the model dry, too



A powerful searchlight eased rescue operations



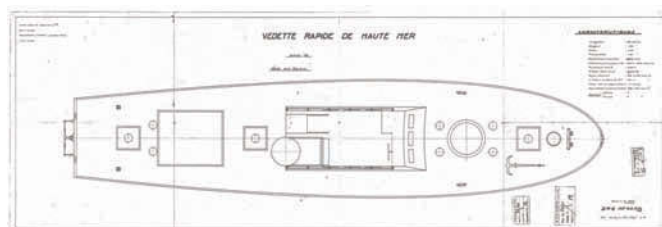
A characteristic detail of 40 K boats, the weapon turret usually housed MG 15



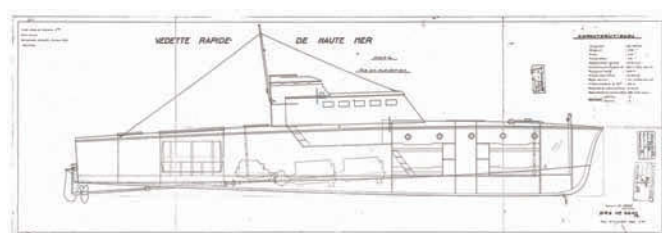
The letter 'M' helped to identify Mars, while the yellow ribbon indicated the craft belonged to Luftwaffe



High graded aviation fuel was needed to power the boat. The bridge needed a stencil for 'Essence', the French word for petrol



Deck lines of 40 K/2. © Dirk Tjalsma, Rijs/NL



Side elevation drawn by Les Chantiers Naval de Meulan, 12th July 1937. The plan shows a Vedette Rapide de Haute Mer (S/N 40 K/2), Dessin Nr. 1651, which later in the war served Deutsche Kriegsmarine. © Dirk Tjalsma, Rijs/NL

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AUTHOR: GEOFF DIXON

Why Annalie? Well it's a combination of my two daughters' names, Annabel, who is 15 and Natalie who is 23. Both are beautiful and for sentimental reasons I wanted to name one of my models after them. This model has been rather long in gestation due to domestic circumstances so whilst initially started four years ago it is only now (2012) in the final stages.

By way of background I had helped to restore a very large pond yacht with my friend John, and once it was sailing I realised how much fun it was. John's boat is about 100 years old and is a large, 55" x 13" beam, gaff rigged yacht with three jibs and is massively constructed with a deep keel, and I wanted something of a similar size so we could race.

CHOOSING THE DESIGN

I spent some time searching for suitable plans and initially focused on a 'J' class yacht as I liked the hull shape and image and potential performance. Whilst I had some plans they were

only a few inches long and when scanned onto a PC and scaled up the lines became too thick to manage accurately. Of more importance was that I was looking to have a yacht of similar dimensions to my friend's and when scaled up to 55 inches the 'J' hulls were too narrow and too shallow to carry the size of rig I wanted.

My intent was to create a large semi-scale, radio controlled, model of an old style gaff rigged racing cutter, in the style of the early Britannia from 1892, as I wanted something that had majesty, spectacle and a scale like appearance as opposed to a pure racing machine. I did an Internet search and found that plans of Britannia, albeit to a different scale, were available from Marine Modelling plans service and they were duly purchased. On receipt I found they were quite detailed but followed an unusual construction method that was not appropriate to me. I also found that the bulkheads were individually shown as opposed to a set of lines that would have helped when changing the scale.

In practice, to obtain the size I wanted the plan length was scaled up 120%, with the beam and depth by 140% with some further addition to the keel depth for added stability. The scaling up may seem excessive but I had sailed John's yacht in rough weather which was great fun, but it had been blown flat a couple of times, and I anticipated I would need maximum stability if I was to carry a similar rig in such conditions. The scaling produced a hull 12½" wide and 56" long with a maximum depth of about 16". The hull was to be plank on frame with a covering of fibreglass both inside and outside for strength and water tightness.



Deck edge capping rail glued (two pieces of wood dry bent and glued/pegged for shape)



Early frame construction showing solid bulkheads in line with the main shrouds

mains electric fret saw (about £40 from Screwfix – very good value and it works well), which eased construction. The keel was also cut from 4 mm ply complete with a continuous deck beam (looking rather like a coat hanger from the side) but amidships the keel was sandwiched to a maximum of five times so I could build in two 12 mm brass tubes to hold the keel bolts in place and to spread the loads. This gave a maximum keel width of 20 mm plus the width of some frames and the planking and should provide a very strong backbone to the hull and fixing area for the lead keel that would form the bottom 3" to 4". The bulkheads and keel were glued together using epoxy for strength. The majority of the bulkheads had the centres cut out with several left solid in the way of the mast stays for added strength, and if too small to make any practical difference. Once slotted they were glued to the keel and left to dry and then the whole lot turned upside down and fixed to a building board ('T' shaped using two 6" wide melamine boards from a DIY shop like B&Q).

Five of the bulkheads had extended height so they could be fixed with battens to the building board to keep the main deck beam and keel straight with additional bracing blocks used where needed. The first step was to glue in a 1/4" square stringer at the deck edge to define the basic hull shape. This was done in two 1/8" layers to ease construction. The bulkheads were then trued to final shape with very coarse sandpaper. The keel section was also smoothed to shape fore and aft to facilitate planking and provide a suitable water-dynamic section.

PLANKING THE HULL

The planking was started with 1/8" x 1/2" wide obechi planks with smaller 3/8" wide planks being used at the bilges and elsewhere where the turn is too tight for a 1/2" plank. Planking was started

FORMING THE FRAMES AND KEEL

I photocopied each station and drew round them to create a set of lines that could be scanned onto the PC and scaled up as required. Despite the disproportionate scaling up the hull lines remained true and produced a sound shape. The horizontal lines were also plotted on a separate sheet of paper as if building a bread and butter hull to check the lines were still fair. This showed up a potential problem with one of the aft frames that eventually had to be enlarged during building to get the planks to lay fair, which was curious as it was an accurate transfer from the original plans!

The lines were transferred to 4 mm ply and the bulkheads cut out using a



Planking underway

in the middle and followed the natural run of the planks. The initial planks were scarf jointed with superglue to provide a continuous length from bow to stern, planking upwards towards the keel area and then down towards the deck edge. The keel area was planked last as there were some awkward curves to contend with.

Initially I found planking quite difficult, as the obechi was both harder and springier than I anticipated and I had trouble making it stick. Dressmaker's pins hammered through with a metal weight or small hammer held the planks in place and each was glued using 'Resin W' waterproof glue, both to the bulkheads and along the edge to the next plank. All pins were removed after the glue had dried.

As planking progressed it was necessary to taper the planks at each end to provide a good fit and insert stealers where needed. One plank was fixed per side to minimise any potential distortion of the frame and despite the size of the hull progress was quite rapid once I got into it, with the basic hull being planked in about two weeks of spare time. The deck edge planks were fixed after the hull had been removed from the building board, as they assist to define the sheer from the side and facilitate the construction of the bulwarks which are about 3/4" higher than the deck, which will necessitate freeing ports for water taken onboard, but creates a more scale appearance. The bulwarks are overlapped, double planked to give a strong 1/4" thick edge to the hull.

A difficult area was towards the stern where the bulwarks are a complex shape. At the stern the planks were soaked and pinned to a board to produce a near 90-degree twist and when dry were glued and pinned to the hull. The stern transom is also curved in two dimensions and this was constructed with a double layer of overlapping short planks about 2" long to form the scallop shape.

SEALING THE HULL WITH FIBREGLASS

The hull was then sanded smooth with very coarse sandpaper and filled where needed with wood filler ready for fibreglassing. Once smooth it was again fixed to the building board and covered externally with 1.8 oz fibreglass matt and epoxy finishing resin. This was purchased from Fibretech who gave an excellent same day service.

I have frequently seen articles where people fibreglass a hull but little actual detail as to how it's done. I will list the steps I took and the reasons:

1. First paint the bare hull with a layer of epoxy resin and when dry, sand smooth (otherwise the wooden hull can absorb too much resin causing dry patches in the cloth – this advice came from Fibretech). Do this with a very thin coat, as the resin is extremely runny. A paintbrush is fine, but watch out for loose bristles.
2. 1.8 oz cloth when cut does not seem to have much stretch but once wet there is a reasonable amount of stretch. It is very smooth in texture rather like a fine silk shirt. Try to avoid hairs of fibreglass,

as they will show as ridges on the hull. Lift up any with a sharp knife and cut away – put the blade edge on the cloth to avoid pulling.

3. If you can't avoid a crease just lift and cut the cloth and overlap – messy but the only way and stronger than just sanding off the ridge.

4. Cut the largest panels possible to avoid joint lines and lay on the hull dry, then wet from the middle outwards. Use a foam roller as this is very much easier than a brush and does not drag the cloth. The resin can be rolled for quite some time depending on the external temperature.

5. Again use as thin a layer of resin as possible and keep rolling to ensure full saturation of the cloth and adhesion to the hull. More resin can be added if needed. Avoid runs at all costs as they are difficult to sand out.

6. Curing will take between 24/36 hours depending on temperature before sanding can begin. Sand off all the imperfections and any joint lines and fill any obvious imperfections with car body filler, sand and repaint with another very thin layer of epoxy resin and sand to a smooth finish. Very coarse dry paper is good for correcting any ridges or runs or slight bulges in the cloth in problem areas. Keep doing this until you are satisfied with the finish.

7. Only mix up a little of the resin at a time – half a plastic cup will saturate the cloth for a complete hull with spare! It goes a long way and has a good 45/50 minutes pot life, longer if the temperature is lower (NB you need 15/18 degrees as a minimum to ensure proper curing) – use a hair dryer if the temperature seems low to start the process.

8. When dry the cloth is a silver/white colour, but once wetted with resin and then dried the cloth becomes 100% transparent to the extent that even the grain on the individual planks is readily visible. This might be important for someone who wants to waterproof an old hull without changing the appearance.

9. When dry if the grain of the cloth is just detectable this is ideal, as you have not over-wet it. A further thin coat of resin will fill in any grain effect for little added weight.

Blocks of wood 2" deep by 3/4" wide were epoxied and screwed between the solid bulkheads at the deck edge for the shroud points and the interior was then fibreglassed for additional strength. This took a lot longer to do than the exterior, as the cloth has to be cut to fit between the bulkheads and pushed into place, a messy business using both brush and roller. Some very heavy cloth was scrunched up and forced with resin into the lower part of

the hull in the keel area for added strength to spread anticipated loadings.



The cast lead keel in the plaster mould showing the fixing bolts



Fibreglassing completed showing the final position of the lead keel

FORMING THE KEEL

At this point the hull, without the lead keel or deck, weighs in at 7 pounds 4 ounces which I found acceptable for a hull 57" x 12.5" (I seemed to have gained an extra inch in length during construction!). The bottom of the hull is shaped in steps – see photographs for positioning of the lead keel.

A dummy keel was built in ply and balsa and sanded to shape and once painted a mould was taken. Originally I intended to use Plaster of Paris but at £3 a kilo this worked out expensive due to the size as I estimated I would need about 15 kilos. Ordinary house plaster

was used instead as this is much cheaper and very temperature resistant. The plaster was poured into a wooden box and the original, covered in Clingfilm was pressed into the mould and held in place with weights to half its depth. Once dry it was removed and the mould allowed to fully dry. The original was then placed back in the mould and the whole covered in a layer of Clingfilm and a further 7.5 kg poured on top to complete the mould. Once dry the two halves were separated and cleaned up and allowed to dry out. Pouring channels and air vents were then cut into the mould to permit casting.

A 1/2" square mild steel bar was drilled and tapped to take the keel bolts which were screwed in and bolted for additional security to form a 'U' shape, and the whole inserted into the mould prior to casting the lead. This will ensure the keel bolts cannot tear out as they pass through the lead keel, and bolted from the inside both at keel level and fixed just beneath the deck to adjacent bulkheads, again to spread the anticipated loadings and prevent twisting forces splitting the keel to hull joint.

The two mould halves were bolted together with four bolts done up finger tight to avoid cracking and the joint line filled with 'No More Nails' as a caulking in preparation for casting.

In the event I decided that to melt 28 pounds of lead on the gas stove was too ambitious and I enlisted the help of a local blacksmith who cast the lead for £35 which I thought reasonable. In the event 28 pounds of lead was not sufficient to completely fill the mould, which left a shortfall at the forward top edge that later caused problems.

FLOATATION TESTS

Removal of the lead was easy and whilst the mould had cracked a little the rough shape was generally fine. The keel was temporarily attached and floatation tests were carried out. To my surprise the hull floated very much stern down albeit if the bows were pressed down hard the overall weight seemed to be correct. By chance I found I could just float the hull in the bath with the overflow stopped up with a floatation clearance of about 1/4"!



First floatation test showing unanticipated bow up angle and the Hi-tec sail winch

Be degrees I hack-sawed and cold chiselled off more and more weight from the aft of the cast keel to reduce the stern down angle. Approximately 5 pounds was removed by this method, which was a very arduous process. I later cold hammered (forged) several large chunks of lead into 'V' shaped sections which were fixed to the front of the keel with steel pins hammered in to shift the weight forwards. The lead was then soft soldered together using a gas blowlamp making a nearly homogeneous keel assembly. The rear of the keel was re-built in wood, bread and butter fashion, and blended in with filler where required. My belief is this anomaly was caused by the cutter shaped hull which tends to be quite full forwards but

has clean run aft and this was exaggerated by scaling up the width and depth.

Further floatation trials were carried out which were much more successful. The keel assembly was then glued with epoxy and bolted through the keel with the two threaded rods and left to dry, and any imperfections smoothed out with car body filler. Once satisfied with the shape and smoothness the whole keel was covered in fibreglass cloth which was overlapped onto the hull for finish and strength, and again sanded smooth with any imperfections dealt with by using car body filler until satisfied.

COMPLETING THE HULL AND DECK

A capping rail was formed out of two 1/4" square sections bent to shape on a building board and glued together with Resin W and added to the bulwark using cocktail sticks as reinforcement, and stained in mahogany and gloss varnished for protection.

The hull was then sprayed with Halfords high build acrylic primer and a couple of coats of grey primer, sanding between, before being sprayed gloss black. Four coats of gloss black were sprayed and allowed to harden before being smoothed off with T-cut. The hull underneath was then sprayed gold (Rover Cashmere Ggold) and the name added in gold lettering and then the whole hull sprayed over with clear acrylic for a better finish. A white 1/4" thick plimsoll line was added using car side stripe tape which sets the hull off nicely.

Internally a short sub deck was installed near the stern to hold the rudder servo and sail winch, and a false 3 mm ply deck was then glued and screwed in place using epoxy and planked over with 1/16" x 3/8" bass wood planks. Some difficulty was experienced in bending

the planks and in practice I found I had to use numerous pins to hold the planks in place. Double centre planks were laid and this allowed wedges (like the fingers on a fan) to be used to assist holding the side planks in place. In addition I inserted pins along each plank edge to provide a gap between the planks for subsequent caulking. The deck was then rubbed down and stained a very light English oak and the whole gloss varnished for protection. Deck access panels were cut out following the plank lines to disguise them. Caulking was 0.5 mm black cord wedged into the gaps and gloss varnished over with several coats to fix and seal.

A scale like superstructure and hatches were constructed in basswood, stained in mahogany and fixed in place to replicate the appearance of this type of racing yacht, with the forward hatch sitting on top of the bow sheeting pulley to disguise it.

MASTS, BOOMS AND RIGGING

The main mast and booms were all constructed from pine and stained mahogany and varnished for protection. The mast was joined 2/3rds of the way up in the traditional stepped fashion with the topmast being removable to ease transportation. Brass connectors for both gaff booms were designed and fixed to the mast and allow maximum movement in any direction.

There are two main shrouds each side to support the lower mast and these are bicycle stainless steel wire inner gear cables with brass turnbuckles for adjustment. The cables were looped back on themselves and bound/sized with strong cord that was then soaked in superglue. Following full size practice the shrouds go from the deck, loop round the mast at the crosstrees, sized together and back down to the deck. Thick copper wire was threaded through both turnbuckles and through the loop in the shroud and soft soldered together. A similar arrangement was done at the lower end of the turnbuckle that in turn was screwed through the deck into the supporting blocks with 1 1/4" long brass screws. The topmast is also supported with four shrouds from 150 pound wire fishing line connected to smaller turnbuckles.

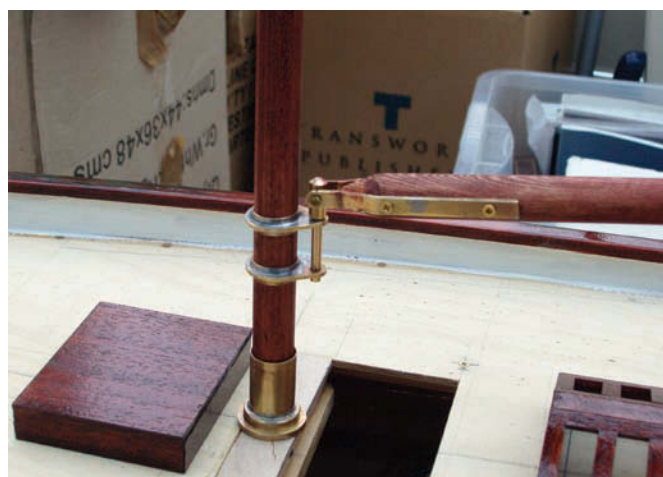
The main forestay is also wire and is connected to the bowsprit fitting which is a length of brass plate with two sections of brass tube soldered at each end. An inverted 'U' shaped section was also soldered to the forward tube to form the fore stay attachment point



Deck planking underway showing liberal use of pins, and pins used for plank spacing



Superstructure underway and main boom joint – note ports for water drainage and hole behind mast for the battery



Main boom fitting – brass soldered and hole for battery

which in turn is screwed to the deck. The bowsprit proper can thus be slid in and out for transportation purposes.

The wire stays provide an extremely rigid and strong support for the mast, with virtually no stretch at all and worked well on John's yacht in very windy weather. I'm a great believer in using tried and tested systems and would prefer to over-engineer solutions for longevity and reliability and this is reflected in all my models. My personal aim is to create models, which are consistently reliable and tough and can stand up to both long usage and function correctly all the time.

RADIO CONTROLS

A 1/4 scale Hi-Tec servo and drum winch were installed for the rudder and sail control and cost about £27 each and are easily strong enough for the job. The 1/4 scale rudder servo is probably over large but as above it should prove reliable over a long period of time.

The rudder is quite large and is based on 6 mm brass rod stem with two holes drilled through and a wire frame inserted and soldered to form a 'D' shape below the waterline with the interior filled with ply and fibreglassed for strength. Car body filler was then added and the whole smoothed to shape. The rudder is supported in a brass tube at the top end and a brass hinge 1" from the bottom.

The rigging layout followed the same pattern as my friend's yacht with the sail winch beneath an access panel slightly aft of amidships with the sheeting lines exiting above decks going forwards and aft through home-made brass goosenecks. The cable goes forwards round a large deck mounted pulley (just behind the bowsprit), which is disguised under a raised deck hatch, then heads aft via a tensioning spring to a side mounted pulley and further aft to the rear pulley and back to the other gooseneck and to the winch. The distance between the forward pulley and aft side pulley needs to match or exceed the winch travel to permit full operation.

The sail lines for both the mainsail and the jibs are attached just forwards of the tensioning spring. The mainsheet line goes aft through a deck-mounted eyelet on the port side, then up through several eyelets beneath the boom and joins to false pulley blocks for appearance. The jib lines go aft to a fixed brass pulley then forwards to a second roving pulley and then aft to a fixing point. The jib sheet lines are both taken off the roving pulley and lead forwards through eyelets to the forward two jibs through a brass ring stitched to the sail and then a little aft to a fixed eyelet on the other side of the deck forming a triangular shape. The third upper jib is manually adjustable for simplicity. This arrangement gives a reduced length of pull to the jibs of about 50% of that of the mainsail which is necessary given the different pivot lengths of the jibs and mainsail, and also because I recall reading that the jibs should be loosened at about 50% of the mainsail rate to maintain good sailing qualities and balance on this kind of rig. 50 pound black monofilament fishing line was used for the sheet lines as this is both very strong and smooth with some give and does not unravel or twist or tangle under loading.

The arrangement with the tensioning spring ensures that the endless cord to the sail winch is always under some tension whether sheeting in or out. The spring therefore ensures that the winch lines cannot become loose enough to jump off any pulley. All cords to the sails are connected by using spring clips (from a dressmakers shop) which means all lines can be shortened by the simple expedient of unhooking and tying a knot in the line and reconnecting. If the layout of the winch lines and jib lines seem complicated it is not, and in practice is a simple system that is discrete in appearance yet very accessible for repairs and monitoring.

THE SAILS

I was actually quite staggered when I test fitted the mast and booms as to how large the finished sail area was! Once the main and gaff booms were fitted, exact measurements for the sails could be taken and marked on cotton sheet ensuring the weave of the cloth follows the longest length of the sail. Seams were made by ironing a fold over a steel ruler, which keeps the seams very straight. A second fold was then ironed in and the sails stitched on my sewing machine. Sail panel lines were then marked in pencil and stitched using grey thread taking care to minimise any pulling. A strong bolt rope was then hand sewn along the bottom and sides of the main sail to facilitate fixing to the booms. The main gaff sail was fitted before the measurements were taken for the topmost gaff sail. All sails were starched and ironed to restore flatness and then sprayed with a silicone waterproofing spray (camping shop).



Sailing at Southend in a heavy breeze – early (small) top jib

The gaff sail is attached to two sub booms that in turn clip to the topmast and main gaff boom to facilitate its removal in windy conditions. The three jib sails were measured and sewn in the same fashion with the main jib being sewn to the forestay. The topmost jib is also removable for very windy conditions.

I was trying to purchase some pulleys for the rigging and could not quite find what I was looking for. Also in my experience a lot of pulleys jam when the rigging cord gets caught in the clearance gap between the wheel and the chassis, particularly if thin cord is used. I gave the matter some thought and felt that it should be relatively easy to design a 'jam free' pulley. The concept is quite simple. A standard pulley chassis made in brass (pear shaped) but with a circular raised ledge fitted to the chassis round the base and top of the wheel. Basically the top and bottom of the wheel are countersunk below the surface level of the chassis. This means the rigging can't get underneath the wheel, as it has to bounce over the ledge first which will direct it onto the wheel. The pear shaped chassis is also rounded at the edges such that a pull on tangled rigging will lead the rope to slide down the side and onto the wheel. Time will tell if this works in practice but the theory appears sound. I think this design is particularly suited to fishing line, which tends to be a little stiff.

Now that all the sails are on I am a little concerned that the mast structure will take the strain given the huge sail area – only time will tell.

THE FINISHING TOUCHES

As a personal item there is a watertight container in the bows, which contains a photograph of my two daughters together with a lock of their hair for posterity plus a small note as to the date and time of the build.

Other various items included:

- A red ensign was purchased and fixed to the stern (this was cut clean off in a minor collision – first time out!)
- A steering wheel and binnacle have been made for show and can be removed if needed to avoid tangled lines when sailing (so far not a problem)
- The name Annalie was written using gold rub-on lettering on the quarters and aft top rail
- The underwater part was sprayed a copper colour to represent plating (Rover Cashmere Gold) with a white plimsoll line. I was tempted to plate the hull using self-adhesive copper tape for appearance and may do so at a later date but have been advised this may increase the drag significantly
- Radio is a twin channel Hi-tec Zebra 27 MHz costing £20 from a show (without the servos)
- The standard AA battery pack was replaced with a 4.5 amp/hr lead acid battery. I also have a 'D' cell version as an alternative
- I may try to introduce some lightweight crew figures for appearance if I can find a source

In order to transport the model the topmost gaff booms are removed along with the gaff sail and topmast, all the sail lines are unclipped then the forestay turnbuckle is unscrewed together with the main shroud turnbuckles and topmast stays, the bowsprit is slid out and the whole laid horizontally on the deck. Elastic bands are stretched across the deck to keep everything in its place and the hull with stand then fits readily into my hatchback. Reassembly only takes about five minutes albeit some of the lines can easily tangle in a strong wind if care is not used!

Out of curiosity I worked out the sail area:

Mainsail = 1,006 sq in

Gaff sail = 276 sq in

Flying jib = 134 sq in

Fore jib = 222 sq in

Main jib = 235 sq in

All in all 1,873 sq in, so quite large! I have now also increased the flying jib and gaff sail and now have 1,970 sq in of sail area!

The final all up weight is 37 pounds so she is quite heavy.

ON THE WATER

The first sail took place on 17th June 2012 at Southchurch Park, Southend, with strong and very gusty winds. By happenstance there was a very good turn out from Southend Model Power Boat club on that day, of which I am a member, and it was a particularly crowded day for yachts with probably a maximum of 12 on the lake at any one time which made for interesting sailing.



First sail in Southend in a calm moment

Somewhat as anticipated she does require a strong breeze to get moving but the stability and turning circle were much better than anticipated and tacking rarely a problem. Despite the long keel she turns very rapidly and not too much inferior to the other yachts albeit she does seem sensitive to the helm. As above her stability was much higher than anticipated and she readily carried all sails even in some very hard blows and my concerns about losing the mast, even with the topmost gaff sail up, proved baseless.

It was observed that the jibs are not being let out far enough, with which I agree, so I have made some rigging changes and will do some further testing. My own opinion is that she is a little heavy forward, due to the large 4.5 amp hour lead acid battery, so I may experiment with lighter power supplies but the large battery did prove more than adequate as after three hours continuous sailing there was still plenty of life left.



Sailing on the round pond, Kensington, showing her colours!

Some problems were encountered with tangled rigging and some further thought is needed but overall I was very pleased with the appearance on the water. Sailing was ultimately terminated due to water penetration into the receiver – just a couple of drops but they landed right on the receiver connections! I have subsequently repositioned the receiver and built a water resistant plastic box to ensure this doesn't happen again. I washed the receiver in fresh water and after drying all seems to be fine.

I also found a volume of water at the base of the rudder, which I think was forced up the rudder tube given the angle (acting like a water scoop). I have put a small 'O' ring round the rudder stem outside the hull with a view to either sealing the tube or deflecting the flow of water. I have also fitted a short length of silicone tube internally at the top of the rudder tube to seal the stem. Despite these modifications I still find that a small volume of water is taken onboard and have yet to trace and rectify this, but it is something I can live with.

I have also re-made the mainsail so it is about 1" or so deeper than before as I think this will improve the appearance. It also gave me the opportunity to create a flatter sail with less seam ridges – my sewing has got better!

Whilst nowhere near the fastest yacht on the pond I do feel she is one of the more majestic vessels and captures the spirit of sailing long past! I look forward to many hours of sailing with her, and in due course a race with my friend John's yacht of similar size and design albeit 1914 vintage.

"... all I ask is a tall ship and a star to steer her by" (Sea Fever – John Masfield). **MMI**



Catching a good breeze on the round pond, Kensington

'WAVERTREE': SOUTHAMPTON'S IRON WINDJAMMER

THE 'WAVERTREE' ILLUSTRATES THE FASCINATING FINAL DAYS OF THE WINDJAMMERS AND DEMONSTRATES HOW SOME CRAFT MANAGE TO SURVIVE NO MATTER WHAT OBSTACLES ARE PUT IN THEIR WAY

AUTHOR: NEV WADE



Wavertree today, in New York, at South Street Seaport Museum

EXPONENTS OF THE FULL RIGGER

When thinking of big iron and steel windjammers in the last years of the construction of such ships, the names of Scottish and then German shipyards spring first to mind. Certainly, Southampton would not be uppermost on any list of construction sites, but the fact remains that there was a shipyard there, which built nine of the largest, and in the opinion of many at the time, most brutish sailing ships ever constructed. The yard was that of Oswald, Mordaunt & Co., and they built these ships for R.W.Leyland & Co, of Liverpool, who was among the last owners who favoured the big, full-rigged ship, as their rig of choice.

A full-rigger is a square-rigged vessel, with three or more masts all of which carry square sails. For many long years, as sailing ships were built for all purposes, from Men o' War to the Tea Clippers they had three masts, rigged with square sail. When steam power came on the scene and sail was put on the back foot, sailing ships increased in size to make them more economic. Hence full riggers



Seen here loading in 1910, for what proved to be her last passage, she has lost her painted ports, and has become a workaday sailing tramp of the ocean



A painting of 'Wavertree' as originally built. No doubt the artist has used his famous licence, to elongate the hull a little, and make her more shapely than she was. Nevertheless, she does look a 'picture'



'Wavertree' at San Francisco, in the 1890s. With all her gear stowed to perfection, she is a fine example of the big sailing ship

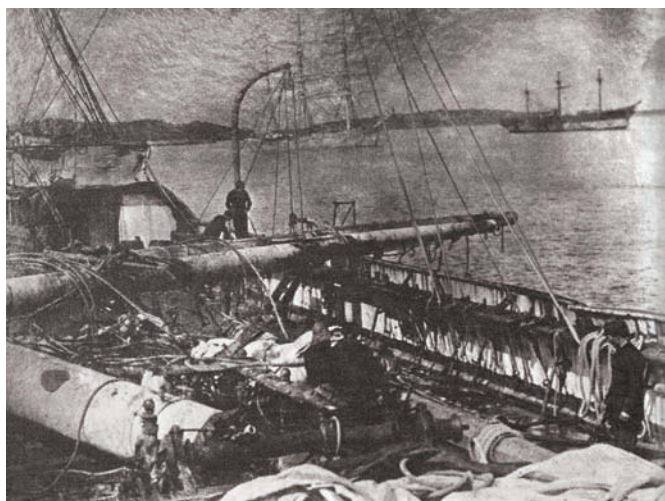
became ever bigger, rapidly leaving behind ships of the size and delicacy of the Cutty Sark. As with everything there is a limit, and when sailing ships reach 285/300 ft long, the distance between the three masts allows very long yards to be swung from one tack to the other. Very long, steel yards are heavy, as are the large sails that they accommodate, bearing in mind that all the swinging and sail handling has to be done by hand. So many sailing ship owners turned to four masted, particularly the four-masted barque (where the aftermost mast is fore and aft rigged, like a yacht), so that yards and sails returned to more manageable proportions, an important consideration as the size of crews decreased for economic reasons.

Messrs' Leyland begged to differ and continued to build the big full rigger culminating with 'Speke' and 'Ditton' at 310 ft long. 'Wavertree' was simply one in the series of their vessels, from their point of view a natural progression from what had gone before. She was made of iron in 1885 (actually, as 'Southgate', for Chadwick & Pritchard), was 279 ft long, with a registered tonnage of 2170, and could carry in the region of 3500Ts of cargo. In effect, she was a box, with pointed ends, built to carry, rather than to be a beautiful sailer. That is not to say that she couldn't cover the ground. Being powerfully built, with steel wire rope rigging and steel spars, she could use fair, strong winds to good advantage in going about her business.

Nevertheless, brute she was. Full riggers, with all that square sail on the aftermost mast were difficult to steer, as the cloud of sail at the after end pushed the stern about making the vessels yaw about their courses. The lowest yards, carrying the largest sails, were of such a diameter that sailors couldn't 'grip' them easily with their stomachs and lean out from the footropes over them as they handled the canvas. So they were more precarious to hang on to as the adage, 'one hand for yourself, and one for the ship', was not practical as both hands were essential if the work was to be done at all. Older and smaller sailing ships had four square sails per mast, the course, topsail, topgallant and royal. As ships' size increased, the topsails were divided into upper, and lower, to make them as



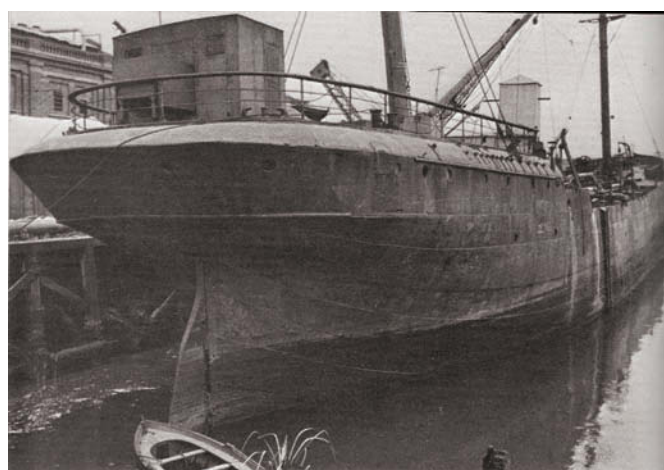
This is 'Fulwood', sister to 'Wavertree' seen around 1919, not long before she went missing with all hands. Her utilitarian looks are apparent, though she still has the grace of the strong sailer. Note the 'man-killer' huge single topgallants (highest sails set on the fore and main masts)



Port Stanley in 1910/11, and this is 'Wavertree' after her dismasting. The havoc caused by fallen rigging is apparent. Seen in the background, to the right, is Brunel's 'Great Britain', for so long abandoned in the Falklands, before her recovery to the UK for restoration



'Wavertree' at Punta Arenas, in 1946, when she had been in use for more than thirty years as a storage hulk, holding bales of wool from the huge, local sheep farms. Her original fore and mizzen lower masts still stand, but the 'mainmast' is an expedient, rigged for her use as a barge

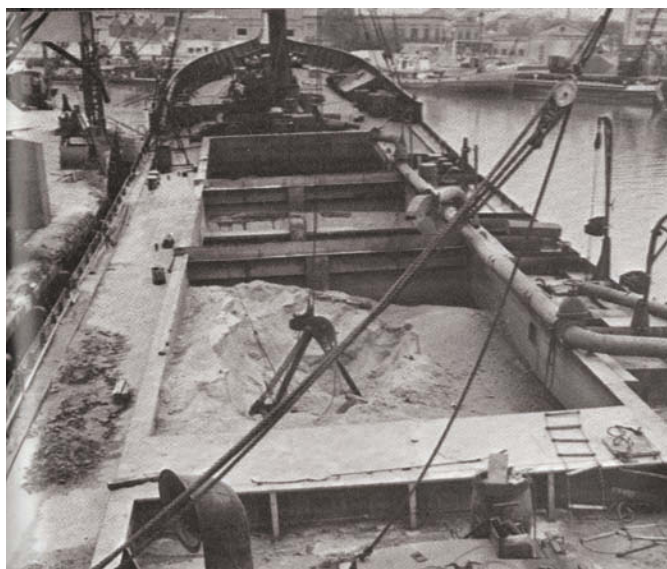


The old ship, as she was discovered, in Buenos Aires, in 1966. It's apparent, from this picture, that even a big carrier like 'Wavertree' can have a graceful, counter stern

easy to handle as possible. On many bigger four-masted barques the topgallants were also split into uppers and lowers. However, on the last big full riggers the topgallants were left as one big sail, making them real man-killers in the heavy weather that made their furling necessary. To quote Alan Villiers, in his Foreword to Capt. Spiers' book mentioned in the references, "...the most awkward, work-making, man-killing rig a big Cape Horner could have."

CAREER OF A BIG FULL-RIGGER

In February 1886 'Southgate' left Southampton for Cardiff, there to load for Singapore. She was built to sail in the jute trade, from Chittagong to Dundee, and remained in that trade with its generally good weather passages, out and back around the Cape of Good Hope until 1888, when she was sold to Leyland Brothers, of Liverpool, and was re-named 'Wavertree'. By this time the carriage of jute to Dundee was coming to an end, and the newly re-named ship was put into the Australian grain business. From that time on, the big ship took her share of the work open to the last sailing ships. She appears in all the far flung ports that these wanderers frequented up to WWI. We see her on the west coast of South America, Rio, New York, Calcutta, Mauritius, Colombo, Sydney, South Africa, Argentina, Victoria, BC and Port Townsend, Washington State, carrying, among other things, nitrates, jute, grain and timber. Her worst problem during this period seems to have been a fire aboard, when at Sydney, in 1892. Finally, on 17th June 1910, she left Cardiff, loaded with coal, for Talcahuano, on what was to be her final, ill-fated passage.



Decks much modified, to allow access for the grabs of sand, she endures, in the Rio Riachuelo

The next we hear of her is on 29th September, when she puts in to Montevideo, in distress. She had encountered severe weather off Cape Horn, between 24th August and 6th September, sustained damage to her lower topsail yards, and steering gear, and had six of the crew stricken by frostbite. She remained at Montevideo (a thriving repair port for Cape Horn damage) until 15th November, when she set sail once again for Talcahuano. Once again, the Horn



The huge hull, that made her useful as a sand barge, is seen to good effect here, as 'Wavertree' starts her journey to New York, in 1968. Note that the fore and mizzen lower masts are still standing!



The old ship, with her consort, 'Peking', at South Street Seaport

was to prove her undoing. This time she was partially dismasted, and had to put back to Port Stanley, in the Falkland Islands, where, incidentally, the hulk of Brunel's 'Great Britain' was undergoing its long wait for recovery and restoration.

Her main mast had snapped at deck level (at that point it was a three feet diameter steel tube!), causing damage to the main deck. This in turn had allowed seawater to contaminate the freshwater tanks, for which the carpenter was held responsible through his not properly sealing them. As the crew were trying to make the deck watertight, they were swept off their feet by the seas coming aboard, and three of them had their legs broken. Finally, the fore and mizzen topmasts came down, causing more deck damage. There is no report of the havoc that this would cause on deck, but remember, all the rigging was steel wire rope, so all these fallen spars would still have been attached to the ship, and over the side, knocking against the ship's hull! The ship was now helpless, and drifting. Somehow, they got her back towards the Falklands, and she was towed into Port Stanley on 7th December, where the Carpenter supposedly developed mental trouble, and was held securely in the local gaol! To cut a long story short, economic repairs were not feasible, so she was sold as a storage hulk.

She was towed to Punta Arenas, in the Straits of Magellan, there to join a small 'fleet' of dismasted sailing ships as 'warehouses', a job for which their large, box like hulls were eminently suitable. She became, in the Chilean Registry, 'Barge, 'Wavertree', no. 1040', and was used for the next 37 years to store baled wool from the large local sheep farms. In January 1948 she was towed to Buenos Aires ostensibly for scrapping. Again, however, her luck held, and she was bought to be used as a sand barge called 'Don Ariano N., no. 3973' in the Argentine Register. She changed hands several times while at Buenos Aires, and seems to have been used mostly to accept the sand, dredged from the bottom of the River Plate, and towed to transport it to shore for unloading and re-use. She lost her bowsprit, bulwarks and fo'c'sle head to facilitate the process, but she was still known to the people of this waterfront, so familiar with sailing ships, right up to 'Passat' and 'Pamir' in the 1950s, as "el gran velero", the great sailing ship.

RESCUE AND RE-BIRTH

By an unlikely chance she was found by Capt. Karl Kortum who was on the hunt for sailing ship hulks, in an effort to preserve what he could of them, before they all finally rusted away. His searches led him, in 1966, to Montevideo, thence to Buenos Aires, and armed with a Spanish phrase book, he sought the help of the locals, who directed him to a stretch of the Rio Riachuelo, where a sailing ship was known to be languishing. In the kind of cliché that you might expect by now, from this tale of survival against long odds, he thought he had failed to find anything, and was walking back towards the bus to Buenos Aires, past the piles of sand from which the city's skyscrapers were built, when, on rounding a corner, he spotted the old ship.

The upshot was that in November of 1968 she was acquired for the South Street Seaport Museum, being towed to New York somewhat later. Using what pictures there existed of the ship, and some plans that the Argentinians had drawn, when converting her to a sand barge, she was restored to the state in which she can be seen today in New York.

COUNTERPOINT

Remarkable as 'Wavertree's' tale is, there was another of Leyland Brothers' ships that could tell one almost as involved, and, in its own way, more unusual. That was another full rigger, very similar, but slightly bigger, named, Leyland Brothers. She was built in 1886, the year after 'Wavertree', and had the distinction of setting a skysail on the mainmast, that is an additional square sail, above the royal. She sailed for Leyland's until 1910, when she was sold to Portuguese owners, as 'Empresa Nacional'. As such, she only lasted until 1912 when she was hulked.

Normally that would have been the end of her story, but in 1944,



The last big full rigger to sail commercially, 'Grace Harwar'. She went to the breaker's yard in 1935, but is here seen in her prime, before WW1. Note that on this ship, the topgallants on the fore and main masts had been divided into upper and lower, only that on the mizzen was a single sail

presumably as a result of the need for shipping during WW2, she was resurrected as the motor ship, 'Nacala'. The picture shows the form that this remarkable transformation took, and the metamorphosis kept her going until 1967, when she was, at last, sent to her long home by the shipbreakers.

AN UNCERTAIN FUTURE

At the time of writing (September 2012) 'Wavertree' lies nearby to another great square-rigger, 'Peking', a four-masted barque of the Laeisz Flying P Line, at South Street Seaport Museum, New York. After having her for thirty-eight years, the Museum can no longer look after 'Peking', and it is hoped that she can find a home in Hamburg, her old home port, though this is by no means certain.

As for 'Wavertree', well it is estimated that she requires \$20 million worth of work, to carry out a new restoration, for these ships can only decline with the years. Whether this will happen, what the future holds for her, whether enough people care, we can only wait and see. I, for one, hope that her luck holds, and that she can continue to illustrate to us today, the lives of our predecessors in the days of the big square-rigger.

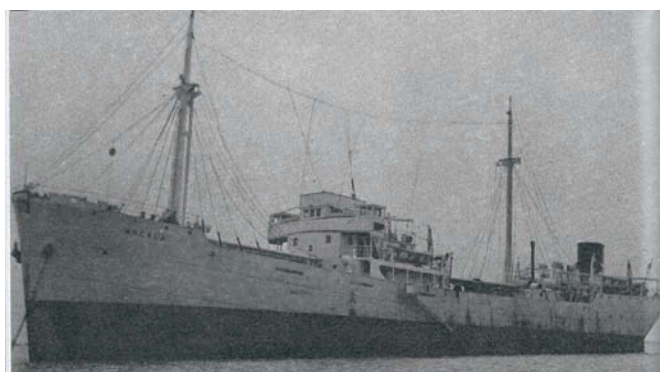
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This is 'Leyland Brothers' at Portland, Oregon, around 1907. By this time she has lost her main skysail but you can see the extra height of mast that accommodated it



Motor Ship 'Nacala', lying in Tagus Roads, Lisbon, in 1964. Gone are the lofty masts, and her bow has been replaced by something much less elegant, but this is the former 'Leyland Brothers', with new midships, and stern superstructures. She was finally scrapped in 1967



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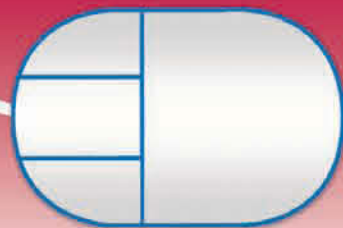
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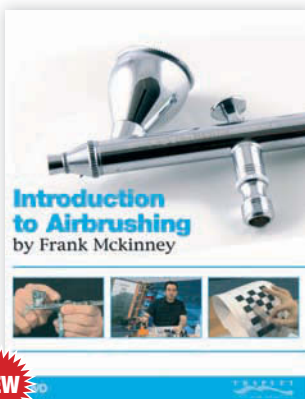
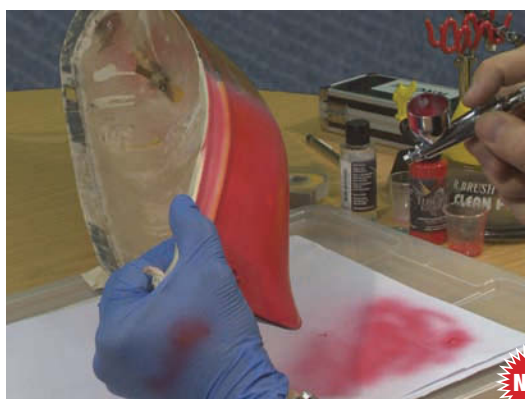
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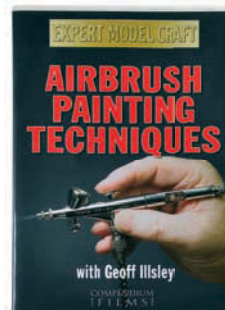
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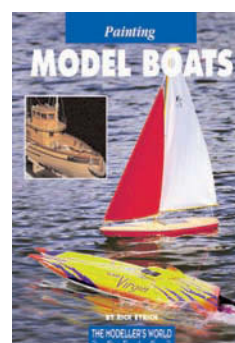
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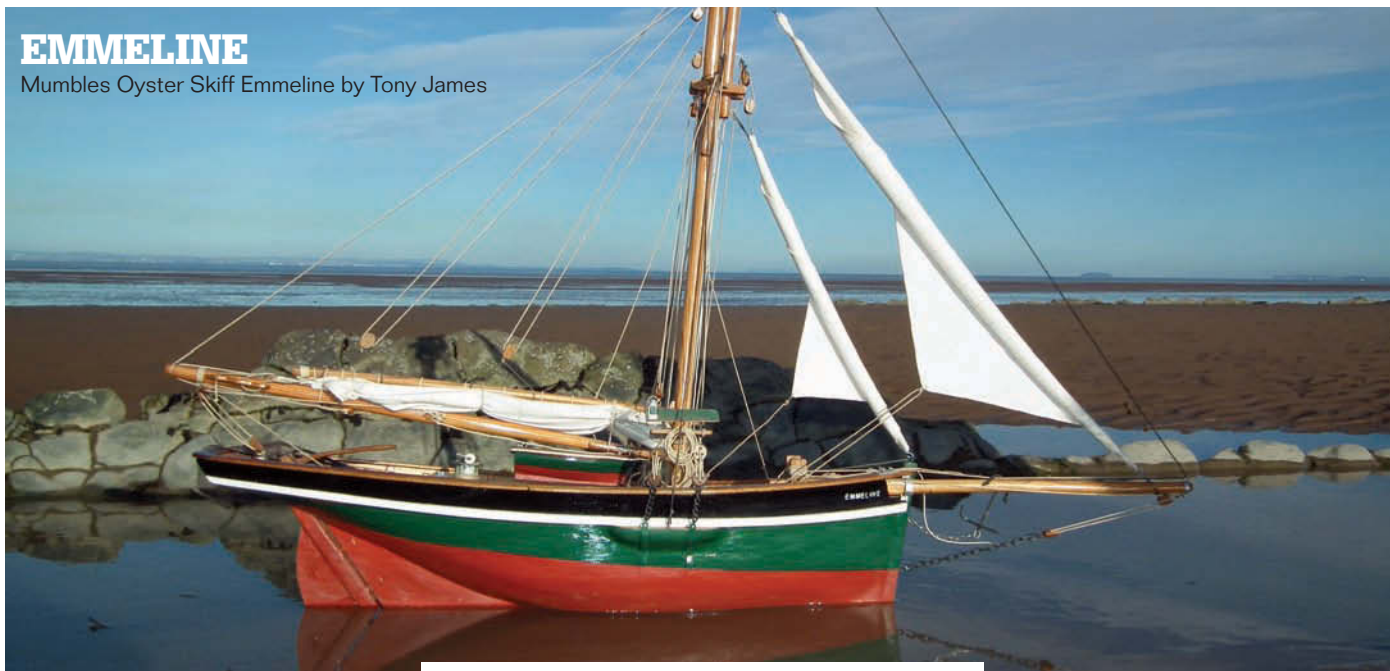
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Astec	23	J Class Hulls	57	Nylet	57	The Model Dockyard	75
Boca Bearing	57	Maritime Models	57	Plans and Parts	28-29	Tony Green Steam Models . . .	57
Cornwall Model Boats	76	Midlands Model Engineering Exhibition .	21	Prop Shop	12	Traplet Digital	69
Dean's Marine	57	Mobile Marine Models	7	Puffin Models	9	Traplet Products	70
Dennis Nixon	57	Models By Design	57	SHG Marine	12	Web Directory	68-69
Electronize Design	13	Mountfleet Models	17	Seaforth Publishing	21	Westward Mouldings	23
Howes Model Shop	2-3	Nautical Marine	21	Subscriptions	73	Westbourne Model Centre . . .	12

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