

The Journal of the Electric Boat Association
Volume 24 Number 1 Spring 2011

www.electric-boats.org.uk

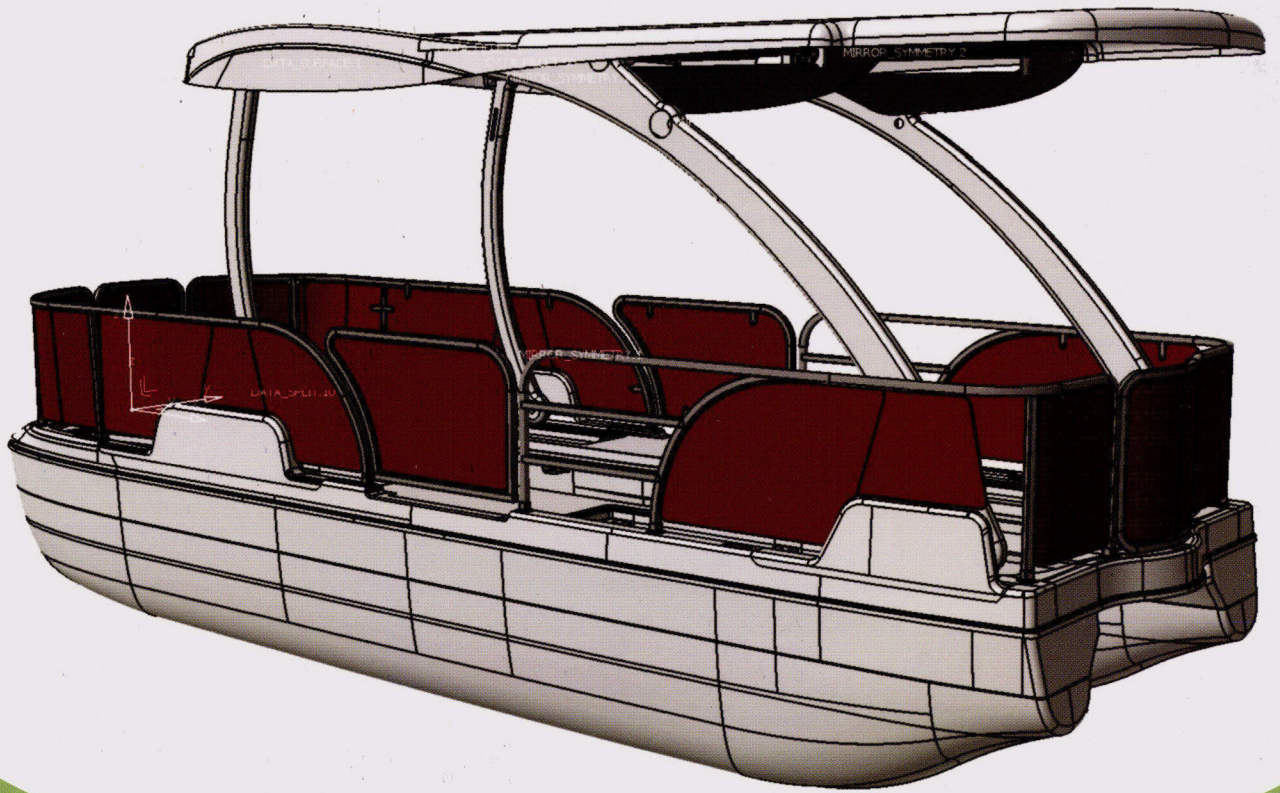
Electric Boat **NEWS**



**A Green Boat in Greenland • Solar Circuit in France
Boat Shows in Paris and London • Historic Boat goes Electric**



Ride a Solar Wave!



This is the much-anticipated, solar-powered, 8-passenger Loon, the new-millennium boat which says good-bye to petrol and extension leads. We are very proud of it and believe that it speaks to the times. We look forward to introducing you to its many benefits. Production begins spring 2011, dealership, purchase and investor enquiries welcome.



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EBA Calendar

April

30th – 2nd May EBA interest IWA National Campaign Rally, River Nene, Northampton

May

28th – 30th EBA Event Boat Show and Cruise St Ives, Cambridgeshire

28th – 30th EBA interest National Trailboat Festival Resolven, Neath Canal, Wales

28th – 30th EBA represented Crick Boat Show Crick, Northamptonshire

June

10th – 12th EBA represented Beale Park Boat Show Lower Basildon, Berkshire

25th EBA Event Thames Cruise Lechlade

July

8th – 10th EBA interest River Festival Evesham, Worcestershire

9th – 10th EBA interest River Festival and Regatta Kingston-upon-Thames

16th – 17th EBA represented Thames Traditional Boat Rally, Henley-on-Thames, Oxfordshire

29th – 31st EBA represented IWA National Festival and Boat Show, Burton on Trent

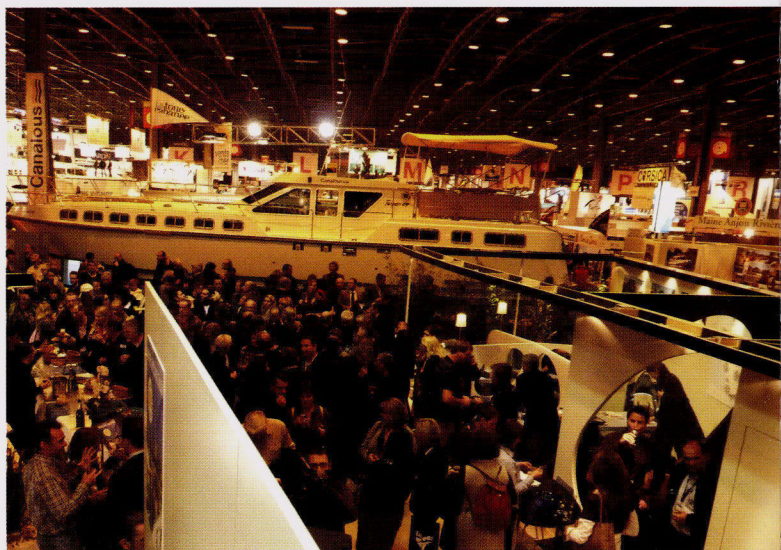
Please note that events and dates may change and others are still being planned. For more details of the above, or notice of other events, contact the Secretary or check the websites.

Cover Picture: Ecotroll at Brede Glacier in Greenland see report on page 2



A soggy show in Norfolk

Page 8



A snowy show in Paris

Page 10



A sunny show on the Thames

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Copy Deadlines

Material to be considered for inclusion in Electric Boat News should be sent to the Editor (preferably by email) by the following dates:

Spring 31st January
Summer 31st May
Autumn 30th September

For more information about the EBA contact
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Tel: 01491 681449 email: secretary@eboat.org.uk

Details of the other EBA Committee Members are on page 24

From the Editor



I'd like to thank everyone who got in touch to say how much they enjoyed our first full colour EB News last autumn. Thanks to a lot of interesting contributions from EBA members, and more advertisements from business members, this next one is a 'bumper issue' with extra pages to report on interesting events last year and to look forward to more in 2011.

Just before Christmas we heard the sad news of the death of Peter Freebody, a very supportive EBA business member since 1999. A number of our members own beautiful boats which Peter built or restored and it is some consolation that his skills have been passed on to his family, and many others, who will continue the tradition of wooden boat building. A tribute to Peter is on page 15.

Seven years ago, EB News featured a narrow boat commissioned by British Waterways to demonstrate its commitment to new technology and the protection of the environment. Named after BW's new website guide to the inland waterways, *Waterscape* was fitted with a diesel-electric propulsion system by EBA business members the Thames Electric Launch Company. This allowed it to run on silent electric power when cruising and manoeuvring or travelling up and down flights of locks, with the option of diesel for faster and longer stretches.

The EBA was very sorry to learn that this innovative boat is now operating on diesel power only and the team in charge say they 'haven't a clue' about the electrics. With increasing interest in electric propulsion among canal boat owners, and our EBA business members from Birmingham University promoting their hybrid electric narrow boat, we hope that BW will look again at *Waterscape*. It would be lovely to see it at boat shows demonstrating the many advantages of electric power over noisy and polluting diesel engines on our canals and rivers.

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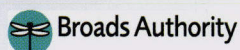
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Electric Boat News welcomes contributions from members and readers, although we cannot be held responsible for any damage or loss which may occur to this material. Items of interest include letters, reports of rallies, events, trips and cruises, articles and advice on building and running electric boats and on items of equipment. We also welcome manufacturers' reports on new equipment and boats.

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We are grateful to the Broads Authority for their support for the Electric Boat Association



Ecotroll in the Irish Sea

A Green Boat in Greenland

Last year a new hybrid electric boat made a 7,700km journey by river, canal and sea from Lyon in France up to Greenland and back. Kevin Desmond, Founder Editor of Electric Boat News, tells the story.

Ecotroll was the vision of a team who believed that a vessel could make this epic voyage with only one third of the quantity of fossil fuel required by a traditional motor boat.

The crew consisted of Eric Brossier, a 42-year-old ocean engineer, his companion France Pinczon du Sel, a marine artist and experienced yachtswoman, and their two little daughters, three-year-old Léonie and her baby sister Aurore. Between 2004 and 2009 Eric and France used another boat, the *Vagabond*, as their base camp for a European programme to study and model the Arctic ice floes. The use of electric propulsion in *Ecotroll* meant that they could study the wildlife of the Arctic at close quarters, as well as the atmosphere and water, in a way that was impossible with a purely diesel-engined boat.

Almost 12 metres in length, with a 97 cm draft, *Ecotroll* was designed and built by the BMO Prod group in the Rhone-Alpes region of France. The 'B' stands for her designer Jean-Pierre Brouns, a naval architect with 35 years' experience. The 'M' is the Meta shipyard in Tarare, where Patrice Passinger and his team applied their patented STRONGALL system in the resin-free construction of her extra-resistant recyclable aluminium hull. And the 'O' is the Olbia shipyard in Hyères where Hakim Ranoun and his team fitted her out with eco-friendly materials such as interior walls in cork, a wood-burning stove and seating made of soya foam.

The boat's hybrid propulsion system, which was developed by NanniDiesel, consists of two 60hp diesel engines coupled to two 7kW electric motors. Supplementary power is supplied by solar panels on the 10 square metre roof and by three small wind generators. There is also an experimental cone-shaped kite sail of 60 square metres from Omega Sail to pull the boat along.

Ecotroll's voyage began in mid-April on the River Saône at Lyon. One month later, after 643 km on waterways passing through 159 locks, the boat arrived in Paris. Negotiating a further eight locks over 89 kilometres, they logged up a final 340 kilometres to get to the salt water of the English Channel at Le Havre. On June 1st the little alloy cabin cruiser crossed the Channel from Ouistreham to Salcombe. It continued on through the Irish Sea to Scotland, the Faeroe Islands, Iceland (July 3rd) and finally, on 13th July, Greenland.

The crew's report following this stage of the voyage said: *"On the third attempt, breaking or pushing drifting ice, the aluminium hull found her way to the village of Ittoqqortoormiit. It took us almost 24 hours to do the last 10 miles, sometimes waiting for pack ice to release us: the anchor was dropped on a big ice floe, on which we could walk a bit and stretch our legs! While drifting with pack ice, up to 1 km/h away from our*

destination... What a pleasure to start sailing, silently, using electric engines, when ices are scattering again.

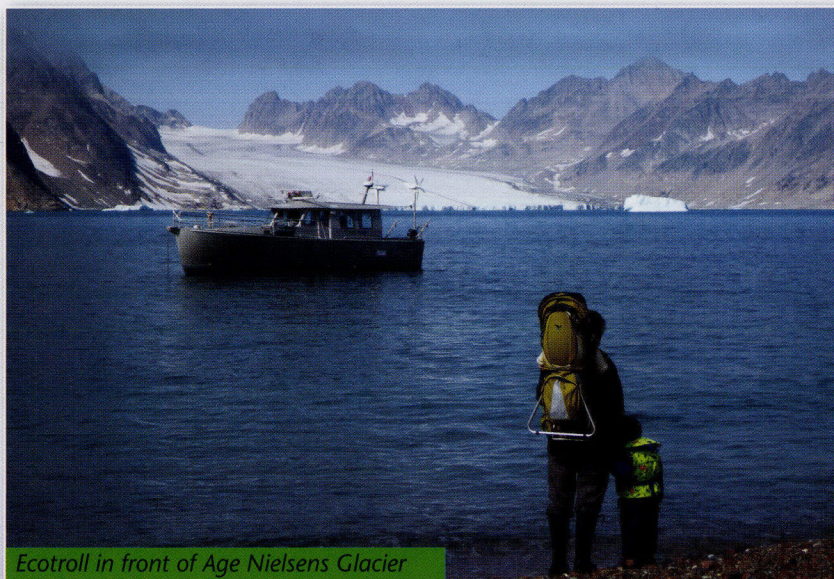
Since we arrived in Greenland, we didn't run the diesel engines; solar panels and wind generators keep charging batteries. The wood stove has not been used either since we left Iceland, sun is heating very well the saloon, thanks to all windows. We still enjoy very much Arctic summer!"

Accompanied by filmmakers, scientists and artists, Eric Brossier, France Pinczon du Sel and their little girls cruised around and studied the Arctic so they could better understand and describe this threatened ocean.

After several weeks of polar research it was time to return home. Starting on

15th August the reverse sea voyage took in Iceland, the Faeroe Islands, Scotland, the Irish Sea and then a public appearance at the La Rochelle Grand Pavois Boat Show on 15th September. After that, they re-entered the French inland waterways system, taking the Canal du Midi to Sète, then the Petit Rhône and then the Rhône and home to Lyon.

This may be the first time since the journeys by *Mansura* that a hybrid-electric boat has made such an inland-offshore-inland voyage. The final word goes to *Ecotroll's* architect Jean-Pierre Brouns: "I would like this boat to become available to all yachtsmen who dream of making the least possible impact on the ocean."



Ecotroll in front of Age Nielsens Glacier



Dropping anchor on an ice flow

A Solar Circuit in France



Photon-Agile

French EBA member Philippe Boegner describes his 500 kilometre voyage around Normandy and Picardy, demonstrating the delights of solar powered boating to many of those he met along the way.

After organising four solar challenges, three in France and one across the Channel to England, Concept Hélios Propulsion decided to undertake a 500 kilometre tour of the 'island' of Normandy and Picardy which is bordered by the Channel and the Rivers Seine, Oise and Somme. So on a chilly May 12th last year we launched our solarised catamaran *Photon-Agile* at Pinchefalise boatyard near Saint Valéry on the right bank of the Canal de la Somme, the start of our inland navigation.

Photon-Agile is a Tiki 26, a James Wharram design, amateur built probably in the 1970s. It was recommissioned in 2003 and registered as a coastal vessel in

Rouen harbour. It has six 120W Solarex solar panels providing 24 volts for eight 6 volt Ni-Cad 140 Amp/h batteries. This battery pack drives a Torqeedo 2000W 24 volt motor. It can run for an eight hour day with normal consumption of 700 watt hours at a speed of 7 kilometres per hour, with a maximum recorded range of 55 kilometres, but on a fine day it could probably do more. Top speed (critical maximum speed of boat) is 11 kilometres per hour. With a full crew load of six consumption is 1300 watt hours.

On Friday 14th May we motored upstream, accompanied by *Ampères-Peinards*, a sailing cruiser with the mast removed and replaced by a strut-mounted canopy covered in 12 square metres of solar panels powering one 1kW Minn Kota outboard and a second 3kW Propelec outboard. During office hours we negotiated the five swing bridges and the 24th lock, leaving Abbeville, the home town of the archeologist Boucher de Perthes, the pioneer founder of prehistoric studies. Under an overcast sky we reached Long, a scenic village overlooking the peat bogs which were the source of its past fortunes until the 1920s. We had covered 31 km from the start.

During the weekend of 15-16th May we were able to demonstrate the efficient operation of three solar powered vessels when *Charmian*, a canoe from Chambéry with Patrice Flottes at the helm, joined us from its home waters of the Lac du Bourget. We took turns in taking a hundred people for short trips which added 10 to 30 km to the log-book of the three boats. Thanks to Véronique Blondel, the Communications Officer of CHP, who introduced us to the mayor and regional councillor for tourism, we were accommodated for a week next to the electric power-station which was in operation from 1903 to 1968.

We spent the week cruising between the downstream and upstream harbours of Amiens, enjoying chatting to the passers by who were offered 'joy rides' and also enjoying the riverside



Back home in Rouen Marina

restaurants in the Quartier Saint-Leu with its Gothic cathedral and Jules Verne residence. To the east of the city are the 'Hortillonnages' which were featured in the last issue of Electric Boat News. These private gardens reclaimed from the bogs are unique and deserve a visit.

At the end of this leisurely spell, thanks to the efforts of Jean Briche, the skipper of *Ampères-Peinards* we attracted the attention of the local press and the regional television channel FR3 Picardie which shot a good two hours of rushes.

At Samara the open air museum was having an open day over the weekend of 22nd to 23rd May. The

canoe went home to the Lac du Bourget. The other two 'heavies', *Ampères-Peinards* and *Photon-Agile* could have been lifted on to their trailers for the return journey, but undoing all the ties on our catamaran is a day and a half's work for four people, not to mention the time involved in towing back by road. So, since both boats had proved their reliability so far, the skippers decided to enjoy a leisurely 12 day return trip by water.

For the journey from Amiens to Péronne, the junction of

the Canal de la Somme to the Canal du Nord, the weather became overcast and head winds slowed our progress. On 24th May we reached Corbie (31 km) and

the Propelec representative disembark, before enjoying the relative comfort of a proper 'fluvial marina'. We decided to take a two day break to let the sun charge the batteries. The real return trip started on 29th May when we went from the Canal de l'Oise Péronne to the Sermaise Lock (41 km) and the Venette Lock on the right bank of Compiègne (27 km) where significant works are in progress at the large locks in the centre of town. On Monday 31st we reached Creil and on 1st June we enjoyed a scenic stage at

l'Isle Adam with its flocks of waterfowl. On 2nd June after a stage of 44 km we moored at the shallow draft inlet and friendly Nautical Club of Port de Vaux-sur-Seine.

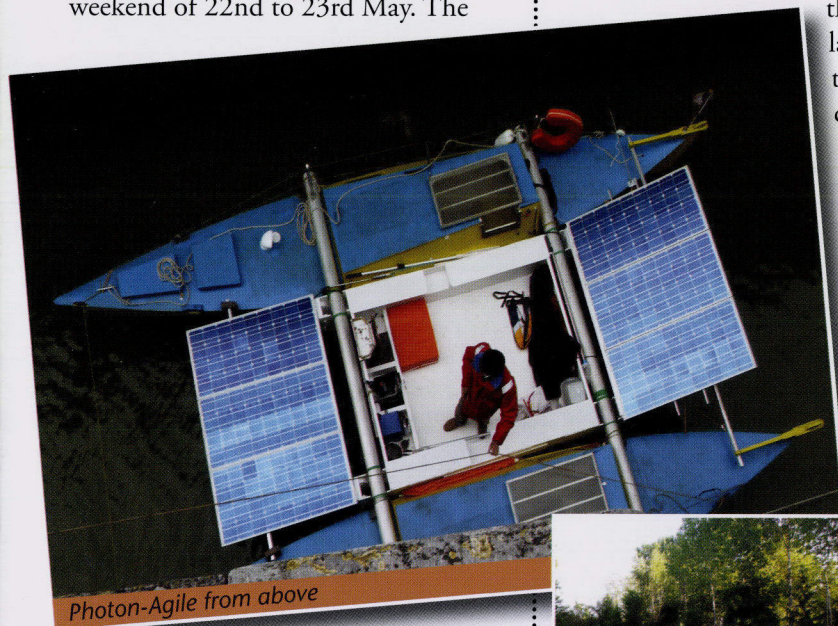
After this the fine weather allowed stages of over 50 km a day at Bonnière-Bennecourt on 3rd June, then a stop at acquaintances on the Isle du Bac on 4th June to reach our home base at Rouen on 5th June with a record distance of 54 km covered in a day.

So we have logged 470 km for the 'tour' and a further 100 km during demonstrations in the week of 'Nature in Picardy'. I'm happy to have conveyed the vintage converted sail-boat safely to its base, free of charge, albeit with a few scars acquired in the 41 locks and some bad piloting by trainee skippers!

on 25th May Cappy (23.5 km) where we met Bruno Barbieu, the technical director of the Port de l'Arsenal Canal Saint Martin in Paris. The restaurant Tante Tartine has an interesting menu as well as 'community singing à l'anglaise'. On the Thursday we managed only 25 km under head winds and heavy showers, with a lunch stop under a bridge to let



Families queuing up at Samara

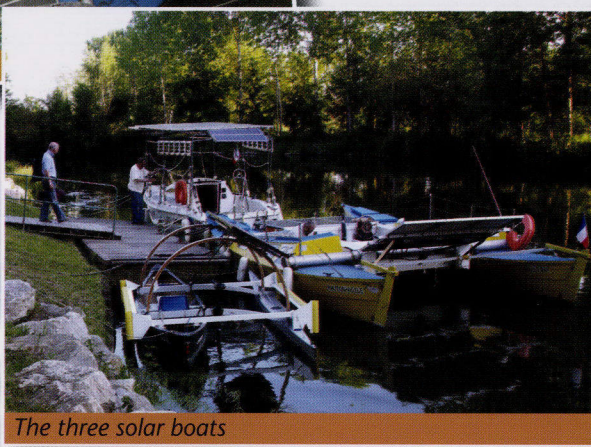


Photon-Agile from above

embankment along the Canal de la Somme was crowded with angling clubs, a hot-air balloon and our three solar boats giving rides every quarter of an hour for a one mile trip to interested visitors, mainly family groups. We were honoured by the visit of Président Christian Manabbe of the Picardy Department.

Members of CHP, including our President René Mulot, handled the bookings and the boat rides for the 300 visitors over the week-end to everyone's satisfaction, particularly the park organisers. Our Vice President J-N Letoulouzan was able to master his organising skills for the benefit of the smooth running of these unusual demonstrations of solar navigation.

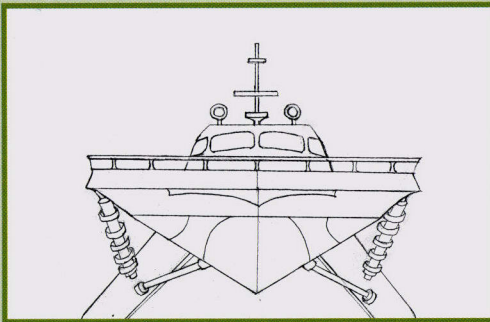
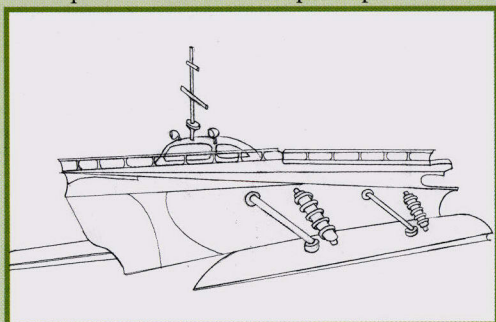
After the weekend Patrice Flottes'



The three solar boats

A Self Propelled Electric Catamaran

Jacob Byzehr has written from Tblisi in Georgia with details of his design for a electrocatamaran which uses wave movement to generate electric power. His invention incorporates pontoons hinged to the boat's hull by bars and springs so that they can move independently. These springs and hydraulic pistons act as both shock absorbers and pumps. As the pontoons rise up and down the pumped liquid operates water wheels which rotate the generator shaft to produce electric power, so the catamaran will not require fuel. The same principle can be used on trimarans.



Mr. Byzehr patented this design in 1997, although he says that the basic idea was invented a hundred years ago. If you would like to learn more about it, his email address is byzehr.111@gmail.com

New Wheelyboat for Rollesby Broad

Wheelchair users will be able to enjoy tours of Rollesby Broad in a new electric boat to be based at the Waterside café and restaurant from Easter. The Broads Authority Sustainable Development Fund provided just over £2000 towards the £17,000 cost of the Mark III Wheelyboat, which can take eight people in wheelchairs and is available for hire on an hourly or half day basis.



Mark III Wheelyboat



Gentleman Jim

The electric fleet at the Waterside includes the picnic launch *Lady Belinda*, dinghies with electric outboards and *Gentleman Jim*, an Otter 26 fitted out by Classic Boatworks. Since its launch in May 2009 *Gentleman Jim* has carried hundreds of passengers on 40 minute wildlife tours of the Broad, an award-winning internationally important nature reserve where only electric, rowing and sailing boats are allowed.

Electric Deliveries in Amsterdam

A 20 metre long barge is providing zero emission freight transport in Amsterdam. It can carry 56 tons, replacing five or six standard lorries in the medieval streets of the city centre, and has been used to supply building materials to the Anne Frank house after damage caused by the fall of the famous chestnut tree in the garden.

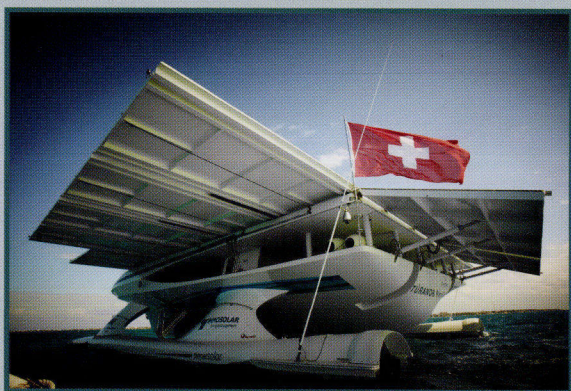
Built by Shipyard Bocxe in Delft, with electrical installations by Koeleman electro in Mijdrecht and operated by Mokum Mariteam, the boat is a diesel-electric serial-hybrid with a Siemens 52kW electric motor and full traction battery pack of 180 kWh. It can travel silently along the canals at 7 kilometres per hour, stopping to offload goods with its electric hydraulic crane. When away from the city centre its batteries can be charged by mains power or, if necessary, two Lancia diesel generators, each producing 480 volts DC at 35kW.

On 19th January Mokum Mariteam announced that they are doubling the size of their fleet with the launch of a second electric freighter this year.





Fastest Solar Transatlantic Crossing



Turanor PlanetSolar at Cancun

an important role in nature conservancy. Having now covered the longest distance ever travelled by a solar electric vehicle, its round the world journey continues across the Pacific via Bora Bora and Tonga to Australia and then China and India.

TURANOR PlanetSolar now holds the record for the fastest crossing of the Atlantic under solar power with a time of 26 days, 19 hours and 10 minutes, beating the record of just under 30 days set by *Sun21* in 2007.

The name TURANOR comes from Tolkien's Lord of the Rings trilogy and means 'The Power of the Sun'. At almost 102ft in length, the catamaran is the largest solar boat ever built. It has 537 square metres of solar panels with 38,000 individual photovoltaic cells whose energy is stored in lithium-ion batteries. Four electric motors with a maximum output of 120kW drive two contra-rotating carbon propellers with a diameter of almost two metres.

On 8th December the boat arrived at Cancun for the U.N. Climate Change Conference, in a practical demonstration of the use of solar energy to reduce reliance on fossil fuels. After a Christmas break it left Cartagena in Colombia and travelled through the Panama Canal, the first solar boat to do so. Next stop was the Galapagos Islands, where sustainable development plays

Mansura Trophy

The new Greenline 33, pictured on page 12, is among the entries for the 2010 Mansura Trophy for hybrid electric boats. Mermaid Cruises and Shipping from Thailand, who featured in the Spring 2008 EB News, are another new entry with two boats of different sizes and Solar Sailor Holdings of Australia, runners-up in the 2007 competition, have entered their entire fleet of Hong Kong Jockey Club ferries. Also in the competition is a new hybrid system from EBA business member Graeme Hawksley along with three boats from EBA members: *Solarly.ch* from Switzerland, the 'Loon' from Canada and Thames-based cabin launch *Eddy Current*.

The Royal Thames Mansura Trophy, in association with Bosch Engineering, will be presented in May at the Royal Thames Yacht Club's London headquarters.

Electric Boats in America



CraigCat



Edison Cruiser

Kevin Desmond has sent news of two very different American boats. The CraigCat E2 Hybrid is an ergonomically designed power catamaran and personal watercraft with side-by-side seating and dual-action controls. The hulls are two one piece polyethylene pontoons, filled with urethane foam, and the deck carriage is made from hand laid GRP. Two bucket type seats sit side by side, aft of which is the double A-frame housing a CD player, two watertight storage boxes, bimini cover and halogen navigation and docking lights. A GRP footplate is part of the deck carriage, where a see-through screen is designed to deflect spray.

The boat has a removable generator and a 55 lb thrust MinnKota trolling motor giving it a cruising speed of up to 5 mph. Measuring 11ft 4in LOA with 5ft 5in beam, its draft with the e-outboard up is just 3in and it has an all-up weight of about 500 lbs. During the past two years, over a dozen CraigCat hybrids have been launched in the U.S. and around the world. The boat has recently received a CE certificate for Europe.

Inspired by 1940s-style runabouts, the 17ft *Edison Cruiser*, is built of beautifully varnished solid mahogany planks with a barrel back stern. Its top speed is 31 mph and it can cruise at 4-5 mph for 8-10 hours. It features twin high-performance 9in Warp DC motors running at 144 volts, twin 500 amp controllers with J.R. Merritt throttles and twin props turning at a maximum 3600 rpm. The Edison is unique in offering twin 13in drives/propellers in a 17ft boat, since normally twin 'screws' are reserved for large vessels which can handle the space required for twin motors. The smaller size of an electric motor over a traditional internal combustion engine makes this possible.

The boat has a 144 volt AGM battery pack with 15kWh of energy which can be upgraded to a 15kWh lithium-ion pack, saving over 500 lbs in weight. The on-board Manzanita Micro battery charger can take either 110V or 220V AC input and there is also an optional on-board petrol generator for remote charging.



Grabachance braves the elements

A Wet Weekend in Norfolk

Barbara Penniall reports on a rather different Norfolk Cruising Weekend.

EBA members brought boats from all over the country for our regular September cruising weekend incorporating the Broads Green Boat Show. Jeff and Georgina Waterson trailed *Adelaide* from Essex, Les and Elaine Fidler's open launch came from Erith in Cambridgeshire and Roger and Julia Woodhouse arrived from Sheffield with *5 Amp*. Nick, Yvonne, Barry and Val Goldring brought *Silent Adventure* from Berkshire and John Hustwick's Essex-based *Rhapsody* stayed at her summer mooring in Stalham. Tony and Sylvia Rymell with Adrian and Penny Dalziel had an especially long journey, towing the solar powered catamaran *Collinda* from Somerset via Liverpool, where she had been used to demonstrate the potential of using electric boats at the new Liverpool Boat Show, planned for April 2011 but sadly now cancelled.

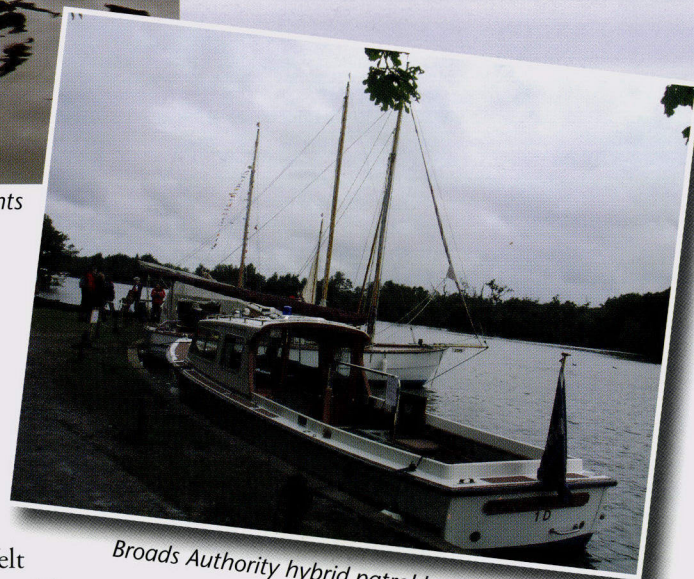
Unfortunately we were unable to arrange suitable boating weather for the weekend and with winds of 28mph, gusting to 40, along with

torrential rain, it was felt that the smaller boats could be swamped on the wider rivers and Broads. So for the first time in the EBA's history we made a last minute decision to cancel the cruise and instead the majority of the party took a round trip on the Bure Valley narrow gauge steam railway from Wroxham to Aylsham. This was one occasion when electric propulsion gave way to steam.

The dinner that evening at the Staithe 'N' Willow, Horning was extremely well supported. The proprietors closed the restaurant to cater solely for our party and 32 diners had a convivial meal, enjoying the atmosphere and being able to catch up with old friends.

None of the trailed boats was able to take part in the Green Boat Show the next day, but the EBA pennant was proudly flown (in appalling conditions) on *Grabachance*, the tiny Seahopper brought by Jack Street from Surrey. Jack demonstrated the practicality of a small boat and his ability to launch it

from the shore, and in between squalls *Grabachance* was to be seen braving the conditions on Salhouse Broad. Other electric boats attending from the area included *Mock Turtle* and *Terrapin* owned by David Williams, *George Thetford*, Peter Howe's yacht with auxiliary electric motor, the Nancy Oldfield Trust's *White Admiral* and the Broads Authority hybrid electric patrol boat *Charles Collier*. There was also a small unnamed canoe with an electric outboard.



Broads Authority hybrid patrol boat Charles Collier

The 5th Broads Green Boat Show was opened by Adrian Ramsey, Deputy Leader of the Green Party, with a speech commending the organisers for supporting environmentally friendly boating in the Norfolk Broads.

It was very disappointing for the organisers that the weather prevented the usual number of boats on the water and kept attendance numbers down. However, the atmosphere in the main marquee (where a slightly smaller EBA stand had to be sited) was good. We were there with Dave and Jennifer Millin of Pb Batteries and were kept busy as it was guaranteed that every visitor preferred to be out of the elements. Adrian Ramsey spent some time on the EBA stand and was very interested to hear about our work encouraging people to try electric boating and promoting the variety of propulsion systems which are kind to the environment.



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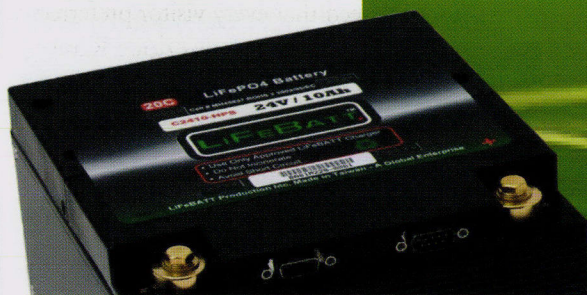
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Boat for Sale



See Classified on page 24

Henwood and Dean

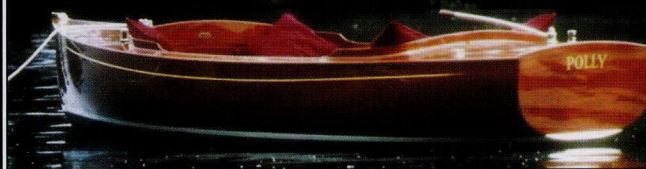
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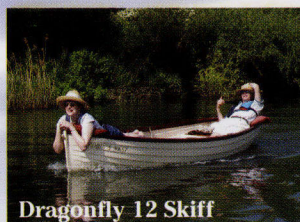


The Thames Electric Launch Company

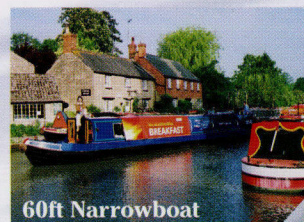
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Boat Shows in Paris and London

January's London Boat Show escaped the bad weather of last year, but it was exhibitors and visitors to the Paris Boat Show in December who had to contend with ice and snow. Pat and Paul Wagstaffe describe some interesting boats in Paris, and Ian and Sylvia Rutter report on the London show.

The 50th Paris Boat Show was held at the Porte de Versailles from 4th to 12th December. Although our journey by Eurostar, and the show itself, were both adversely affected by snow this did not detract from the interesting electric boat exhibits.

On the Press Day one of the world's largest holiday groups, TUI Travel, launched their new flagship 'Le Boat Hybrid 1500'. Formerly Thompson Holidays, TUI now incorporates Sunsail, Connoisseur and Crown Blue Line. Their hire boat fleet has over 1,000 craft spread across Europe including the River Thames, Norfolk Broads, Scotland and Ireland.

The new Le Boat is very innovative. It was designed by Seaway, whose Greenline 33 has already been very well received within the UK, and is being built by Groupe Beneteau, one of Europe's leading power and sailboat builders.

The design is aimed very much at the five star holiday hire boat customer. Three double cabins and the main saloon are fitted with flat screen TVs and there is an almost 'walk-in' size fridge in the galley.

The innovation includes a comprehensive electric management system with a large array of solar panels and a generator fitted between the diesel engine and the steering pod drive system. The drive is linked to two steering positions with conventional throttle and wheel and also to a joystick control linking the drive pod and bow thruster. It is all aimed at making the big boat easy to handle for the hirer. The engine can drive the boat and/or provide mains electricity and re-charge the battery pack. The input from the solar panels is also delivered to the batteries.

TUI are keen to promote the 'green' credentials of the Le Boat 1500 series and will be adding 20 boats each year to their fleet at 350,000 euros per boat. Their investment is likely to be the largest of any hire fleet operator. It will be interesting to monitor the equipment, performance and use of these new hybrid boats. They will also be available for private purchase. For further information see www.leboat.fr

The Paris Boat Show is spread across four light and airy pavilions with good



Le Boat Hybrid 1500



Nannidiesel hybrid saildrive

facilities for visitors. The AFBF, the French Electric Boat Association, were exhibiting and we passed on fraternal greetings from the EBA. Their stand had displays from a number of electric boat and equipment suppliers including the brochure from new EBA business members Grove Boats of Switzerland, showing a range of electric and solar boats from 6 to 12 metres in length. Another EBA business member at the show was Fischer Panda, with their Whisperprop Hybrid Propulsion Systems.

EDF Energy were promoting 'les bateaux électriques' as were Ruban Bleu and Frauscher. Other electric and hybrid boats on display included Obiboat fibreglass catamarans, designed for leisure use, Vedettes de Paris electric passenger vessels, the Bosco electric boat, the Aequis 7.0 solar boat featured in EB News last summer and the Cache d'eau solaire 1450, a solar powered holiday boat from Naviratus.

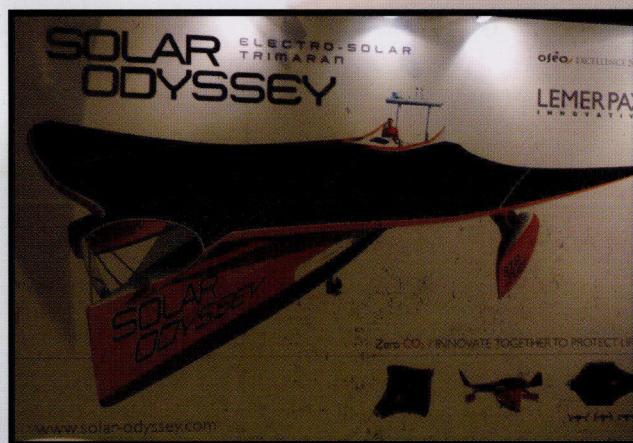
Nanni engines were showing their new hybrid saildrive with the generator mounted as an integral unit between the diesel engine and the gearbox or drive. The system is also available linked to a conventional shaft drive.

In pride of place outside, between the main show entrance and the exhibition halls, was the electro-solar trimaran *Solar Odyssey* which Kevin Desmond reported on in the last EB News. It is an experimental, very light displacement prototype and a floating laboratory. Displayed without its 'manta ray style' cascade of solar panels, the boat has been made by re-cycling elements of other innovative vessels. It is 60 ft long, with beam of 30ft, loaded displacement of only 5 tons with 1184 sq ft of solar panels. Maximum speed is estimated at 18 knots with an 8 knot cruising speed.

Solar Odyssey is a partnership project created by Lemer Pax. The range of partners includes Naviwatt, builders of electric leisure boats, boatbuilders Jeanneau and Henri Lloyd (UK) yachting clothing. Its first major test will be an attempt at the Atlantic record for solar powered vessels, set initially by the Swiss catamaran *Sun21* and increased at the end

of last year by Planet Solar. It is then intended to circumnavigate the globe via the Panama Canal and the Suez Canal.

The few days in Paris at the time of the Boat Show was enhanced by shopping trips in the snow to Galeries Lafayette and Printemps, with spectacular Christmas window displays, as well as by visits to the Palace of Versailles and (twice) to a very French restaurant 'Chez Lili et Marcel' on the Quai d'Austerlitz.



Solar Odyssey

The London Boat Show

A newly extended ExCel exhibition centre was the venue for the Tullett Prebon London International Boat Show in January. The new layout made room for an indoor watersports pool with a chance for visitors to try canoeing, sailing and paddle boarding and a new Boardwalk (a dry marina) to 'moor' a variety of craft from small sailing boats to a 110ft superyacht.

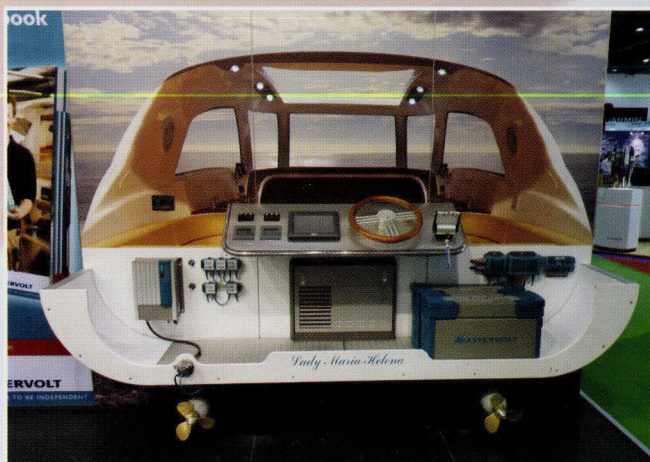
Among them was the new hybrid Greenline 33 from Salterns Brokerage. Pictured on the water in the last EB News, it was designed to be energy-efficient with a Superdisplacement low-drag hull. The hybrid drive system combines a 5-cylinder Volkswagen diesel engine with an electric motor/generator which consumes 7kW in the electric drive mode and provides 5kW of electric power when driven by the diesel engine (charging the 240Ah lithium batteries and supplying on-board power). The motor/generator drives the propeller through a ZF gearbox, while on the roof six solar panels with forced air cooling can deliver up to 1.3kW of electricity. When in dock, the 3kW inverter/charger takes 230V AC shore power to charge the batteries. All the systems are interlinked and automatically charge

the battery when there is an adequate supply of daylight or when the diesel engine is running.

Under electric power the boat's top speed is 6 knots with a range of up to 25 nautical miles. In diesel mode it can travel at up to 15 knots, using four times less fuel per mile than comparable hulls. The interior of the boat is light and spacious with

a remote-controlled arrangement to enlarge the lounge-cockpit area by four square metres. This also makes for easy water and dock access. Enough power is generated for a fridge, freezer, oven and television, so owners can enjoy all the comforts of home when on board.

Adding to its award of 'Green Boat of the Year' in Practical Boat Owner magazine, the Greenline 33 was also



Mastervolt lithium ion batteries





Greenline 33

voted overall winner in the Wheelhouse and Walkaround category of the 2011 Motor Boat of the Year Awards, which were presented at the Savoy Hotel on January 10th.

Another innovative boat on show at ExCel was from EBA members Patterson Boatworks. Their 24ft long Elektra open launch, which was on the front cover of EB News in



Pattersons Elektra

Spring 2009, is now available in three specifications: low power electric with a 4kW Mastervolt electric drive, high power electric with a 35kW Mastervolt lithium battery pack and a new hybrid version which offers a continuous 45kW output or a maximum 90kW for short 20 minute sprints. The hybrid, developed in conjunction with evo electric, uses a 45kW genset running on ethanol, diesel or petrol and a 45kW water-cooled electric motor. Solar and wind power can also be incorporated.

Pattersons say they asked designer Nigel Irens to work with them in creating the most efficient mono hull form which would take electric boating into the 21st Century. The streamlined composite boats are beautifully finished in wood with stainless steel fixtures and fittings. The teak floor can be lifted to create a huge sun lounge and lifted again for picnicking, where the electric cool box which rises out of the forward seat will come in handy. There is hidden ambient lighting, a sound system and a touch screen for navigation and information.

On the Mastervolt stand at the show there was a display of lithium ion batteries with their built-in cell balancing system. This monitors every battery cell individually to control voltage, current and temperature and guarantee safety. The system has its own charger which reduces power if it overheats. The batteries, based on lithium ion ferric phosphate, are lighter than lead acid with a much higher energy density, offering more power and shorter charging times. Mastervolt were also showing their new GPX-6 hybrid power system which combines a generator, charger, inverter, transfer switch and motor drive all in one box. The privately owned Dutch company has been working with Steyr of Austria in developing intelligent gensets up



Barry Fower on the Fischer Panda stand



Salters Skipper 15 Electric

to 40kW and has just been taken over by the Actuant Corporation of Wisconsin, which will provide a much larger budget for future research and development.

EBA members Fischer Panda were showing a new improved version of their small, quiet diesel generator with power output increased to 6kW. This is part of their new range of inverter stabilised generators, a technology which allows the engine rpm to be reduced at low outputs, optimising the fuel consumption.

Other EBA members at the show were Salters, who had their popular Skipper 15 Electric and their Mystic day cabin launch on display, Navigators & General, who run the EBA insurance scheme, and Torqeedo with their new 24 volt lithium manganese battery, ideal for powering their Cruise outboard motor. And it was very nice to meet the Editor of Water Craft magazine wearing his EBA tie!

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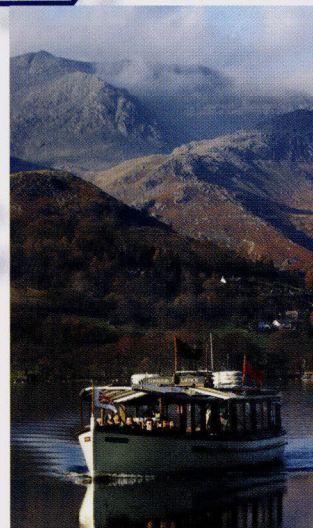
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IAN RUTTER

Peter Freebody, in trademark straw hat, with Colin Henwood at the Thames Traditional Boat Rally

A Tribute to Peter Freebody

On 18th January the church of St Mary the Virgin at Hurley was packed for the memorial service in honour of Thames boatbuilder Peter Freebody, who died suddenly on December 18th at the age of 76. A longstanding member of the Electric Boat Association, Peter readily responded when we sent an appeal for support to business members last year. We will miss seeing him at the Henley Traditional Boat Rally - in his trademark straw hat with its bright yellow sunflower - where many of the electric canoes, skiffs and slipper launches on display are a tribute to his skills.

Peter's connection with Thames boating went right back to ferrymen ancestors in the 13th Century, and from 1533 his family owned land at Hurley near Marlow in Buckinghamshire, where Peter Freebody & Co. is now based. Peter began building boats at the age of 15 when he was apprenticed to Pat Wootten in Cookham Dean. (Many years later he returned the favour when Pat's son Guy was in turn apprenticed at Freebodys.) But in 1963, when Peter bought his grandmother's boatyard in Hurley, wooden boatbuilding was at its lowest ebb; fibreglass was the new modern material and traditional skills were in decline.

It was not until the late 1970s that interest in wooden boats started to revive. Peter's first project was to convert an ex-lifeboat to a motor cruiser, with the work done outdoors under a scanty canvas cover and with no power tools. He restored two historic steam charter launches, *Alaska* and *Windsor Belle*, along with a couple of J Class tenders. He started tracking down old Thames boats and rebuilt them with superb workmanship using quality wood and fittings, acquiring an interesting

collection of vintage electric motors in the process. He was able to update the boats he restored, moving them on in style and efficiency, and using his knowledge and experience to build new boats too. After restoring the 1908 electric canoe *Cymba* he moved on to a series of new electric canoes in traditional style, including *Stepping Stones*, *Melodie* and *Hope*. At last year's London Boat Show a superb example of Freebody's new-build slipper stern launches was on display, based on a design dating back to the early 1900s and available with electric, petrol or diesel power.

Other boatbuilders in the area acknowledge their debt to Peter. EBA business member Colin Henwood, who initially trained at his boatyard, said "We wouldn't have a business if it wasn't for Peter Freebody. His struggles in the 60s and 70s meant that Peter was there with a growing band of customers when wooden boatbuilding returned to favour, and his very high standards gave everyone something to aim towards."

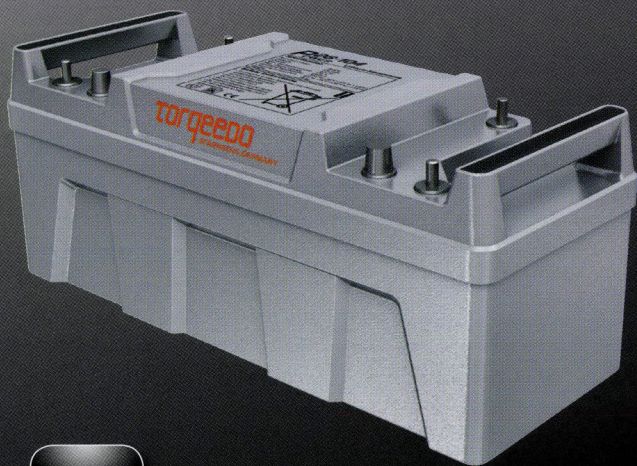
Peter's customers came not just from the local area but also from Europe and America. Visiting the yard at Hurley they would often find him boatbuilding alongside his staff, with his daughter Katie varnishing, his son Richard running the business and his daughter Melanie managing the office and accounts. It is good to know that the business will continue in their hands. We send our deepest sympathies to them, their sister Helen and their mother Elizabeth.

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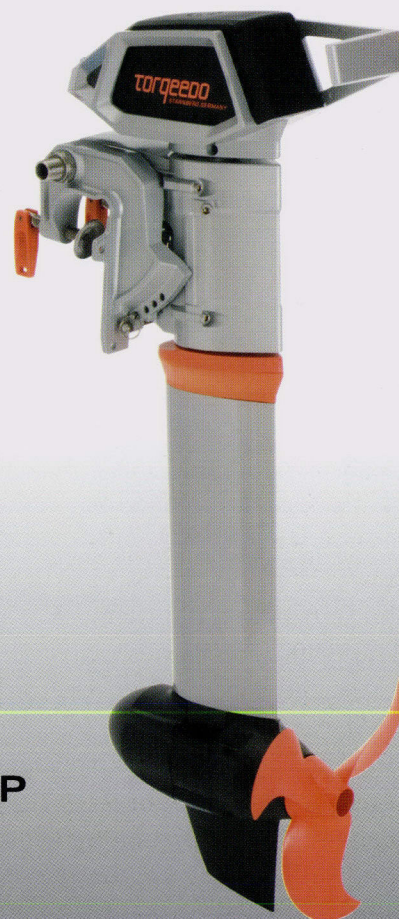
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The Story of Mythical Maid

EBA member Peter Sutcliffe describes the conversion of his historic boat to electric power.

My 'Gentleman's River and Estuary Launch' was built by The Saunders Patent Launch Building Syndicate in 1901 at their yard at Goring on Thames. The business was founded by Sam Saunders in 1870 and a number of beautiful craft were made, many of those after 1900 being produced at the newer, larger premises at Cowes, Isle of Wight.

Mythical Maid is one of only three or four remaining hulls built on the patented principle of multiple layers of thin mahogany planking, interlayered with waterproofed calico and held together by copper wire which was stitched through all layers, usually five in total. This

gave a strong, light hull which was developed to meet the specification of the Stewards of the Henley Royal Regatta for their umpire launches. These needed to be fast but also to generate the minimum of wake.

Quite early on, this successful method of construction led to an association with the pioneer aeroplane designer and manufacturer A.V. Roe and the formation of Saunders-Roe, builders of the first flying boats.

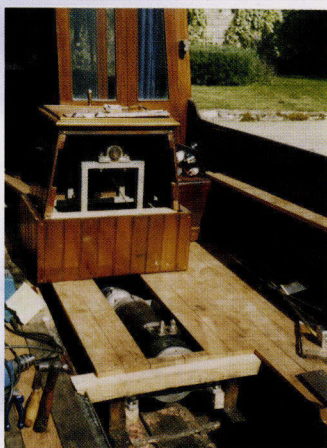
At 27'6" loa our hull is in the mid-range of sizes they made as 'stock' but each boat was made to an individual specification. When we bought her in 1987 *Mythical Maid* was fitted with a steam plant and was in an advanced state of dereliction.

A 'dry' boatshed was built for her at our home and a survey revealed the need for a full restoration which I completed 18 months later. During the strip-down I located a number

of elements which proved she had originally been powered by a water-cooled engine.

After years of enjoying her in steam, Liza and I decided in 2004 to 'go electric'. This had become the 'hi tech – must have' technology for launches at the end of the 19th century. Many lovely boats were built using large D.C. motors with banks of glass accumulators. Spillage and breakage of these led to boats with rotted-out bilges and a final visit to a breakers' yard.

With little initial knowledge of electricity, apart from school-time teaching and experiments, I had a steep learning curve to climb. With great good fortune I was directed to Rupert Latham at Norwich. Rupert was massively helpful in first of all determining the type and size of the plant required. This included power and battery capacity needed, the type of motor and appropriate



Modification to floorboards and binnacle



Battery carriers



Motor installation



Installation completed

controls and propeller size and pitch. Not only that, but he was then able to source these for me from his extensive knowledge and experience.

From all this I was able to plan the modifications to the hull and the general layout of the components. As it turned out, there was little difference in the weight of the steam and electric components but the weight of the electrics low down in the hull was a great aid to stability.

With the minimum of alterations I was able to fit all the battery cradles below the existing deck levels (one or two of them by only the odd inch or so). The 2.5kW 48V DC SEM motor came with a very well-designed carrier that made fitting and alignment with the existing propshaft simple. The final coupling attachment is a flexible rubber 'doughnut' and I have used all the original propshaft fittings including a wonderful antique thrust bearing (which should be in the Science Museum!)

Control of all this is by an SEM.1 48/200 control panel and there are eight Elecsol 200 deep-cycle wet batteries in two banks of four to give the appropriate voltage. I also built in an NG3 48/45 battery charger and this is in part of the old coal bunker. Also fitted is a large red isolator switch, close at hand for whoever is at the wheel.

The only equipment which has not been ideal was my choice of the Elecsol batteries. I found the staff who run this outfit to be very unhelpful, especially when one of the batteries blew up on initial testing and when another one failed well within the guarantee period.

I spent a couple of months more or less full-time on completing the change-over, during which a number of plaintive cries for help to Rupert were all dealt with in the most kind, efficient and effective way. What a good guy to have on

the end of a phone!

So in the early summer of 2005 we launched the 'new, improved' *Mythical Maid* at Lechlade and set off on our working-up trials. Two revelations were immediately apparent: step aboard, turn the on/off switch, push the control lever and OFF WE GO! No more stoking up and waiting 45 minutes for the big kettle to boil - magic. Moving the lever to 'ahead' found us going 'astern' but a quick changeover of two connections solved that little embarrassment. And also, she floated true to her original boot-toppings - a bit of luck that was. Trials unearthed only one other problem. A propshaft turning at seven or eight times its revolutions when driving a steam prop (150-200 rpm) needs more care in balancing.

With her lovely 'entry' and clean, slim hull form we now have a cruising life of at least 14-15 hours with a reserve on our capacity of 480Ah and a draw of plus or minus 30 ampere hours. We also have greatly improved deck space and less brass and copper to clean. I am still working on an electric element to heat our tea water in the brass samovar in which I had previously fitted a small steam coil (two litres boiling within two minutes - I may not be able to match that with electricity).

I also now get time to chat to our friends who come to sail with us and the simplicity and ease of operation means that *Mythical Maid* no longer needs an 'engineer' to make her go - and go she does too.

And finally, three cheers for Rupert and the team at the EBA who have made us so welcome at their events. All we need are lots of warm, sunny days.

For more details on *Mythical Maid* see the EBA website www.electric-boats.org.uk

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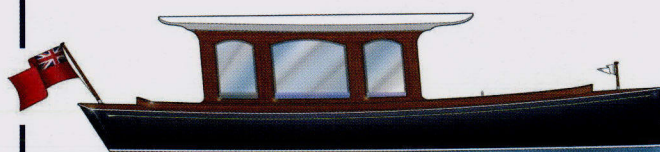
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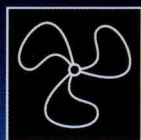


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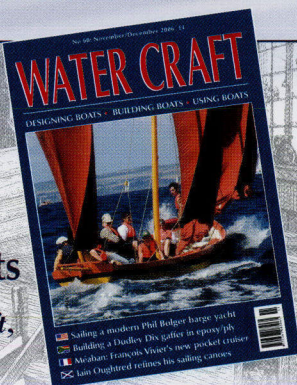
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IAN RUTTER

campus. This was the *Ross Barlow*'s first long journey away from home, enabling the team to monitor the performance of the on-board equipment as well as assessing the viability of the hydrogen and fuel cell technology, and they hope to do more long trips in the future.

Among the 244 exhibitors at Beale Park were a number of EBA business members including Pb Batteries, giving boat owners advice on electrics, and the EBA itself, with Paul Lynn's small solar catamaran *Solar Flair II* on display. Graeme Hawksley was showing the



The Ross Barlow at Chester

DON WRIGHT

Inland Waterways Festival

The Inland Waterways Association National Festival and Boat Show is held each year in a different venue. The 2010 event, which took place at Beale Park on the Thames over the August Bank Holiday, was celebrating the birth of one of the founders of the association.



Graeme Hawksley with his new diesel-electric hybrid

IAN RUTTER

In the 1940s, when much of the inland waterways network had become derelict, Tom Rolt's book about travels in his narrowboat *Cressy* led to the formation of the Inland Waterways Association to campaign for the restoration and conservation of the UK's canals and rivers. This year's IWA Festival was preceded by a rally at Chester, where Tom Rolt was born in 1910. EBA business members from Birmingham University joined the celebrations, having travelled for four days by water in their hydrogen hybrid narrow boat the *Ross Barlow*, negotiating 58 locks on the way. The crew of Professor Rex Harris and his wife Vera, Dr. Alex Bevan and two French exchange students were joined at Chester's historic Tower Wharf by EBA Treasurer Don Wright.

At Tattenhall Marina the boat took on more hydrogen provided by BOC Linde, the first time it had been refuelled outside the Birmingham

new version of his diesel electric hybrid motor, using a Lynch motor as both drive motor and generator, which he has entered for the Mansura Trophy. EBA members with electric boats on display were Henley Sales & Charter with the Canadian electric canoe *Muskoka*, Goodchild Marine with the Otter 26 cabin launch, Kernowrat with the EzyBoat fibreglass folding boat and Creative Marine showing *Caprice*, a Mayfly 16 Traditional which had just been sold and was going to a new home on a private lake. Boats on the Beale Park lake included *Peace*, the 26ft Sea Otter converted from diesel to electric power for EBA member David Ward which had travelled to the Thames from its usual mooring on the Basingstoke Canal.

This year's IWA Festival is moving from its usual August Bank Holiday date to the weekend of 29th-31st July and will be held in the Midlands at Shobnall Fields in Burton upon Trent.

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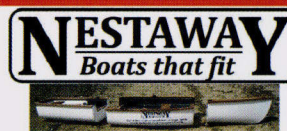


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Noticeboard

Welcome to New Members

Private Members	Location	Boat where notified
Martyn Banner	Newtown, Powys	Starfish, 16ft Shipmate Senior
Ken Baynton	Dorchester-on-Thames, Oxon.	Muskoka, Canadian canoe
Cathy Byberg	Ontario, Canada	Golden Mean, double ended twin masted yawl
Jim Cleary	Henley-on-Thames, Oxon	Emerald Lady, 1989 Frolic 21
Nick Drayson	Kettering, Northants.	Platypus, short narrowboat
John Edwards	Whitstable, Kent	Tender to Solita, 10ft dinghy with MinnKota outboard
Marc Fovargue Davis	Cambridge	The Real Quiet Storm, Patterson Boatworks FE23
David Fuller	Nottingham	River Roach, 12ft dinghy with Flover outboard
Paul Griffiths	Alicante, Spain	
Paul Lohr	Welwyn, Herts.	
Janine Marshall & Malcolm Jones	Sunbury-on-Thames	Pebble, 16ft Duffy Backbay
Gregory Martin	Long Beach, California, USA	Intrepid, Bristol 32 sailboat
Alan Smith	Newby Bridge, Cumbria	Elizabeth Anne 16ft slipper launch
Alan Stewart	Burcot, Oxon.	1879 18ft Thames launch
Daniel Taylor	Abingdon, Oxon.	Bossoms Tom Tom
Jim Wright	Bourne End, Bucks.	

Business Members

Barouche Watercraft	Hamble, Hampshire
Coniston Ferry Services	Keswick, Cumbria
Grove Boats S.A.	Yvonand, Switzerland
J.M. Coulam Boat Builders	Market Deeping, Lincolnshire
Pondel Boats	Watledge, Gloucestershire



Water Craft Cordless Championships

A new event at the Beale Park Boat Show this June will be a challenge for small boats powered by cordless electric tools. This will be a knockout tournament on the Beale Park lake between pairs of boats drawn by lot. Boats entering must be no longer than 16'3" (5m) and propelled solely by one or more cordless electric tools with a maximum value when new of £400. The tools must use the batteries they were supplied with (recharging facilities will be available between heats). The Championships are being organised by Water Craft magazine with the support of Makita and help from EBA stewards. Makita are offering a first prize of a bag of their cordless power tools – jigsaw, sander, planer, two drills and a site radio – worth over £1200.

Entries close on 1st May. For more information see the website www.watercraft-magazine.com or email ccc@watercraft-magazine.com



Web Design Service

Business members are reminded that EBA Webmaster Nick Goldring offers a website design service. The single page starter package costs £99 per year with a home page on the EBA's web server, email address and registration of a domain name as well as reciprocal links to and from the EBA website. An upgrade to a four page website is also available for £250, and Nick has very kindly agreed to donate half his fees to the EBA.

For more information contact Nick on webmaster@eboat.org.uk



First Prize for Canadian Business Member



The new 'Loon' solar boat

In December the latest version of the 'Loon' solar boat, built by EBA business member the Tamarack Lake Electric Boat Company, won first prize at the Future of Electric Vehicles international conference and exhibition in San Jose, California.

The 'New Vehicle Application Award', open to land, water and airborne vehicles powered by batteries and electric motors, was judged on a number of criteria including practicality, innovation and numbers of units produced.

Tamarack have just announced that production of their new 8-passenger 'Loon' will start in the spring of this year in Rome, New York State, on the banks of the Erie Canal.

Dear Sylvia,

I have recently become aware of changes to the Environment Agency regulations on river boat licensing which mean that any boat on the River Thames must have a fully paid up licence, whether it is being used or not. This includes backwaters and marinas.

The EA seem to be following the DVLA and their zero tolerance of road tax evasion, which in my view is misguided. The Thames and the public highways are quite different. Whereas many road users have their personal parking spaces, drives and garages, not many river users are so fortunate. Many years ago you bought a nominal licence fee but paid cash to go through a lock. If you didn't use your boat you just paid the nominal fee. There is a big difference in just sitting on a permanent mooring and charging up and down the river using all the locks and services laid on by the EA. These are the people who should pay for those amenities.

What about classic wooden boats undergoing restoration or refurbishing? Cruising in them is probably out of the question but they do need to be in the water (we all know that dry storage is not good for wooden boats.) But as the new regulations stand the owner must fork out for a licence to use the river although he cannot do so.

If the EA really want to adopt DVLA style of management they should introduce various classes, like Houseboat (static), For Sale (any movement through a lock payable), Restoration and Cruiser. Licences should be for periods of time at the owners discretion, for example, if a boat is stored ashore for the winter why should it have to have a valid river licence? Knowing that the river is going to be closed in their area for winter maintenance, an owner might decide to go for houseboat status.

The EA have brought in these new regulations through the back door very quietly, and I think it is wrong. I think river users need to stand up and fight this one!

Regards,

Chris Evans, 'Solaris'

Electric Boat Association



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Contact Ward on 01252 625067 or ward@canalia.com. See picture on page 9.

Piano Frolic 18 electric day boat built by Creative Marine 1996. Lovingly maintained with four new batteries in 2009 together with new cushions and two Iroko table tops makes this an ideal low maintenance boat for pottering on the river. £8250 includes trailer, covers etc.
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Contact: John Sangster on johnsangster@msn.com or call 01628 626833 for details.

Shardeloe Professionally built 18ft river launch converted to electric by Thames Electric Launch Co. New batteries and Boat Safety Certificate 2010. Comfortable two berth cabin, galley, character features, space for Porta Potti. Ideal for leisurely cruising, picnics etc. A much loved boat admired wherever she goes. Price: £12,000. Contact: helenbest97@googlemail.com

Silent Explorer 19' cedarwood electric Canadian Canoe. Built May 2003 by Chippendale Craft from 6mm cedar strip plank sheathed inside & out with glass cloth & resin to a Selway-Fisher design. Seating for up to four adults. 24 volt Minn-Kota Riptide 74 motor installed as a 'steerable pod' controlled from a tiller stick located beside the skipper provides outstanding manoeuvrability. Power from four 60Ah batteries arranged as two independent banks with separate isolator switches. Price £5695 including battery charger and canvas cover.
Contact Nick Goldring (Reading Berkshire) Phone: 0118 3757757

Mythical Maid Edwardian electric launch built 1901 by Saunders. Length 27ft 6in, beam 5ft 6in, draft 2ft. 2.5kW 48 volt DC motor providing 10 hours cruising before recharging. Comfortably carries 8 people, sleeps up to 4. Elegant period design including bevelled glass windows, oil lamps and wicker chairs. £39,000 including 6-wheel trailer. Contact Peter Sutcliffe 01993 830983 email sutcliffe@btinternet.com

Pictures and details of all these boats are on the EBA website www.electric-boats.org.uk under 'Free Ads'.

Members wanting to buy or sell electric boats, motors, fittings or associated equipment are invited to submit a 50-word entry direct to the Editor (no agents or brokers). The information contained in members' private advertisements is provided by the advertiser and the Editor is unable to vouch for its accuracy.
It is the responsibility of prospective purchasers to satisfy themselves as to the accuracy of the information given and of the condition of goods advertised.

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