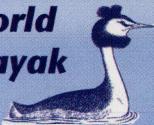


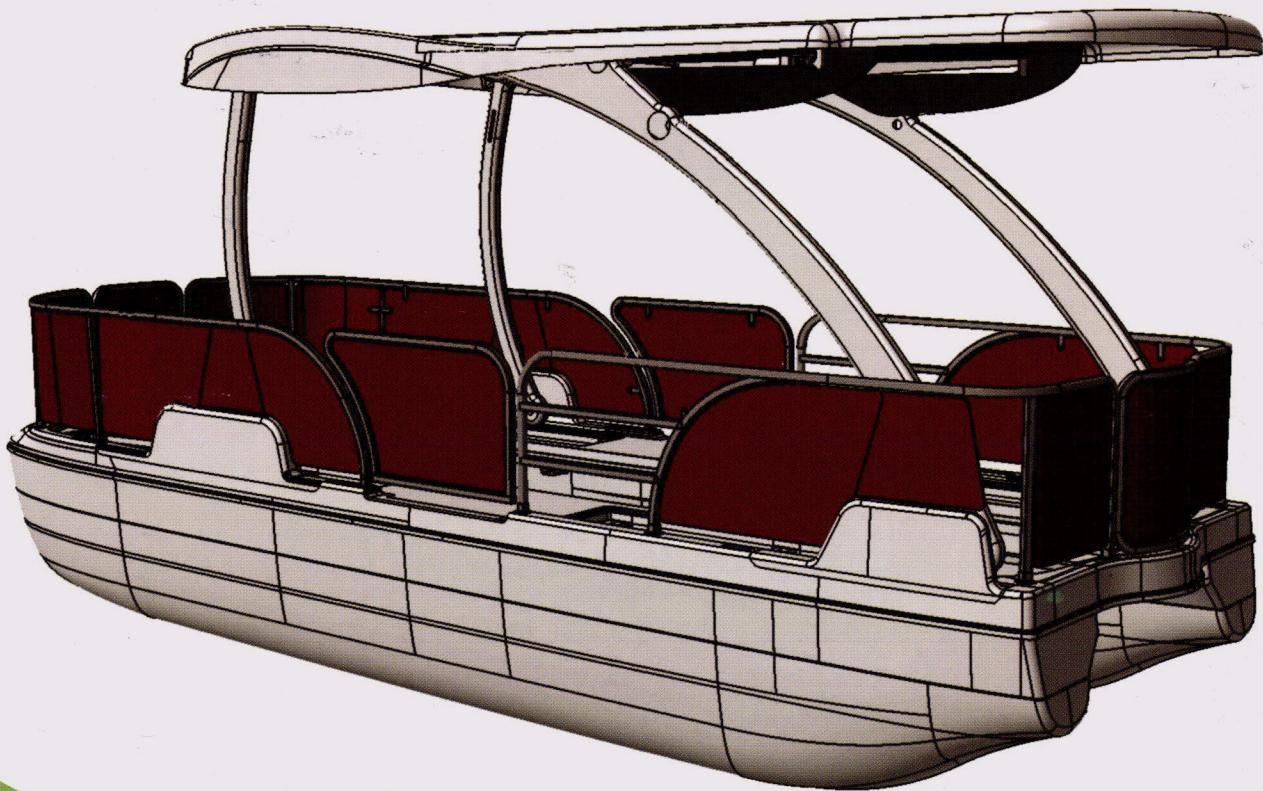
# Electric Boat NEWS



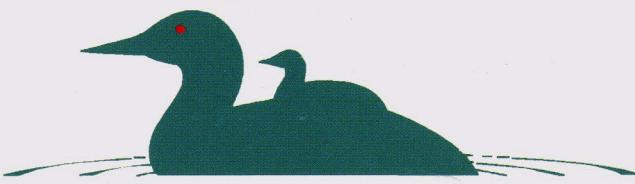
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# EBA Calendar

## July

16th – 17th	EBA represented	Thames Traditional Boat Rally, Henley-on-Thames
29th – 31st	EBA represented	IWA National Festival and Boat Show, Burton on Trent
29th – 31st	EBA interest	North Wales Boat Show Vaynol Estate, Bangor



New boats in Knightsbridge

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## September

10th – 11th	EBA Event	AGM and Cruising Weekend Wey and Arun Canal, Guildford
16th – 25th	EBA interest	Southampton Boat Show Mayflower Park, Southampton
25th	EBA interest	Broads Green Boat Show Salhouse Broad, Norfolk



New boats in Cambridgeshire

Page 12

## November

14th	EBA interest	ICOMIA International Hybrid Marine Propulsion Conference, Amsterdam
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New boats around the world

Page 17

**Cover Picture:** Haida on the River Great Ouse  
Photo: Ian Rutter  
See reports on pages 4 and 12

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*- the conversion of Haida to electric propulsion*
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- 17 New Electric Boats around the World
- 20 Books for Boaters
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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

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Tel: 01491 681449 email: [secretary@eboat.org.uk](mailto:secretary@eboat.org.uk)

Details of the other EBA Committee Members are on page 24

## From the Editor



Our spring and summer season began on a high note with the award of Mansura medals to EBA business members for their pioneering work in hybrid electric propulsion. The Mansura Trophy competition, established in 2007, attracted entries from all over the world and has done a great deal to raise the profile of electric boating.

The EBA's first water-based event this year combined cruising and a boat show and brought twelve electric boats to St Ives in Cambridgeshire over the late May Bank Holiday. Unfortunately our one-day cruise from Lechlade, planned for the end of June, attracted far less interest and reluctantly had to be cancelled. If you were disappointed at missing a Thames cruise we can offer electric cruising, along with the Association's AGM, on the beautiful Wey and Arun Canal on 10th and 11th September, so please put this date in your diaries.

It was good to meet EBA members on the Thames at the Beale Park Boat Show in early June. One of the highlights this year was a new competition for boats powered by one or more cordless electric tools. The EBA was initially rather dubious about this, in case it gave the impression that electric boats were peculiar and quirky, but there were some very imaginative entries (I was particularly taken with the amphibious paddle boat which raised a loud cheer as it rolled down the slipway and into the water!) And the runaway winner, pictured on page 7, was a superb demonstration of a fast and silent electric boat using minimum power.

I'll look forward to seeing more EBA members, and boats, at Henley in mid-July for the Thames Traditional Boat Rally and at Guildford in September for the AGM and cruising weekend.

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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



# Electric Boating on the Isles of Scilly

**EBA member Sheena Tyler recommends a favourite place to visit – made even better when you can take an electric boat.**

For years I've dreamed of electric boating around islands ringed with pearly white sand, reminiscent of the beauty of the Caribbean. Surprisingly these exotic islands are part of Britain, just 28 miles west of the tip of Cornwall – the Isles of Scilly. Year after year our family returns there, attracted by the stunning coastal scenery, lack of crowds and no motor cars, making it a wonderful safe haven to explore, discovering smugglers' coves, castles and secret caves.

For our first visit it was enough to relax as passengers on the inter-island ferry services with skippers who know the waters expertly. In subsequent visits we became more adventurous, island-hopping with our kayaks. In our latest visit we wanted to try electric boating. We sought a boat of family capacity that was stable at sea and allowed us to self-rescue, one which we could paddle but which could also take a motor. So I was excited to find just the boat, when Hobie announced a Tandem Island Trimaran. I had to pull out many stops to take delivery of one before our holiday and this proved difficult. It was manufactured in California and just two weeks before we were due to depart was stuck in a container crossing the Atlantic.

Meanwhile, Torqeedo kindly loaned me a Travel electric motor. I tracked down an American kayak motor mount which was meant to be suitable for both the specific motor and kayak, but this mount would turn out to cause us problems.

Heritage trailers constructed a purpose-built boat trailer which could carry the kayak (18ft 6in long) both on the Scillonian ferry to St. Mary's (the largest island of Scilly) then on to the freight boat serving the smaller islands (which only allows trailers up to 10 feet) by contracting down to almost half the trailer's length. The boat was delivered to us in the nick of time and we departed on the Scillonian.

We duly arrived at our island base of

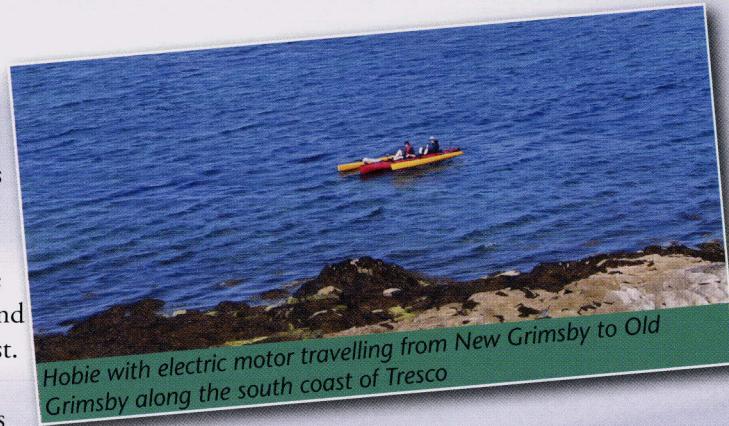
Tresco, a paradise of beaches with world class sand, sub-tropical gardens and havens of wildlife. Tresco is protected from the full force of the Atlantic by the island of Bryher to its west. It is surprising just how calm its waters can be, when the western seaboard of Bryher takes such a pounding from the Atlantic waves.

Tresco's picturesque New Grimsby harbour was as calm as a millpond, and we enjoyed trolling in our boat between Tresco and Bryher. But during our excursions the motor mount started to buckle from the motor's force. Together with a local engineer we improvised with some steel reinforcement to the mounting bars.

Now for the next challenge: a voyage round the island! Our only opportunity coincided with the extreme spring tides when the sea between Tresco and Bryher, normally plying with ferries, completely dries in the low tides. As we sailed south we had to negotiate the narrowest of channels, but eventually we were aground, surrounded not by water but by a sea of sand and sea urchins. It was a silent, eerie experience to be so far removed from the islands but with no water around us. But a kayak is not marooned in such situations. Day trippers, enjoying this strange opportunity to walk across the sand between the islands, helped us portage to the next channel. Another set of kind Samaritans helped us to yet another channel and from there we reached the sea again.

We continued our voyage around the island, reaching its south easterly tip where we beached at Green Island for lunch. We used our kayak paddles to negotiate through the kelp which is common near the shore. The currents and tide are not strong, but with the combined force of wind and tide and such a heavy kayak we did need two of us to paddle when traversing the kelp which prevented us using the motor.

The Torqeedo was reliable and gave us between 3 to 5 knots with plenty



of battery reserve to our destination at Old Grimsby, a picturesque little harbour on the east side of Tresco. The battery charge indicator was a welcome inclusion for our sea excursions. Although we never capsized, it was reassuring to know that the entire motor assembly was submersible.

We beached the boat at Old Grimsby whose Island Hotel must be the most delightful location in the British Isles for afternoon tea. Sitting at the wooden veranda with its panoramic views is always our top-of-the-list Must Do every year we visit. Across Old Grimsby Sound it overlooks numerous little uninhabited island gems such as Northwethel and St. Helen's.

The next day we took the trimaran to one such spot, Foreman's Island. Perhaps we were the very first to set foot there with an electric boat. We drifted into the cove, surrounded only by peace and beauty, and took our first few steps across pristine sand. This was a great experience - landing on an island all to ourselves. We scrambled over the glittering grey and white granite rocks and found a picnic spot. Then we climbed to the island's peak and took in the intoxicating views of scenic islands for 360 degrees all around us.

Island-hopping is absolutely delightful here. From Foreman's Island we crossed to Tean, with its ruined church and then to St. Martin's, with its amazing world-famous bakery (try the bacon sizzles!). On Par beach there we saw dainty little birds called sanderling, running like clockwork toys. Scilly has perhaps the largest number of bird species recorded (425) for any location in Europe, with rarities such as the hoopoe, wryneck and firecrest. Equally abundant are the number of rare and unusual wild flowers.

It is a joy just to sit in a boat here, in the crystal clear waters of this marine wonderland. Hundreds of species of mollusc shells have been found, which can be seen in the fascinating museum at St. Mary's, along with animal displays, archaeological finds and wreck artefacts.

The Shell Channel Pilot Guide writes of Scilly being a sailor's paradise in fair weather. But treacherous submerged reefs and ledges are too many to mention, and the reason why Scilly abounds with hundreds of shipwrecks: electric boats that didn't quite make it (just kidding). The way not to do it is to approach the islands under one's own power for the first time in thick weather, when waymarks cannot be clearly identified or may be mistaken.

However, there are ways to overcome these challenges. Detailed Admiralty charts and pilots which clearly identify the dangers are absolutely essential. For those with less experience, safe boating can be ensured by restricting to one location, such as New Grimsby, becoming conversant with the hidden reefs, observing their location when they are exposed and planning around tide times when these will not be a hazard.

At the end of each day, over our meal we asked each member of the family what was their favourite moment of the day. "Playing at ferries" quipped one. "Pies at the St. Martin's bakery", "Riding our bikes round the island" said others. But for me it was landing on my own little desert island. By electric boat. Pure magic.

**Most information, including travel and accommodation, can be found on the Scilly official website: [www.simplyscilly.co.uk](http://www.simplyscilly.co.uk). Accommodation is in short supply. Landing on certain off-islands is restricted or prohibited during the bird breeding season (indicated on the current OS map).**

**Large Image Left:** View from Island Hotel at Old Grimsby on Tresco showing Hobie rigged for sailing

**Image Inset Left:** Luke Tyler with Hobie beached at Green Island on the south east tip of Tresco

**Image Inset Right:** David Tyler paddling in shallow water on Foreman's Island, carrying Harriet and Renee as passengers on trampolines

# A Metamorphic Launch



BARBARA PENN/ALL

Haida at St Ives

EBA member Peter Brennan tells the story of his launch *Haida*, which he converted from petrol to steam and finally to electric propulsion.

**H**aida was originally built for me in 1992 as a motor launch by PJS Boats at Lindford in Hampshire. 17.9ft long with 5ft beam, she is a Paul Fisher Indian Runner design of cedar strip plank construction. She was initially fitted, and ran for six years, with a 12hp Dolphin twin cylinder

two stroke engine. Throughout all that period the engine was relatively quiet compared to a similar size diesel but we always found the exhaust fumes objectionable.

When I took early retirement in 1998 I decided to convert the boat to steam using an oil fired boiler and this

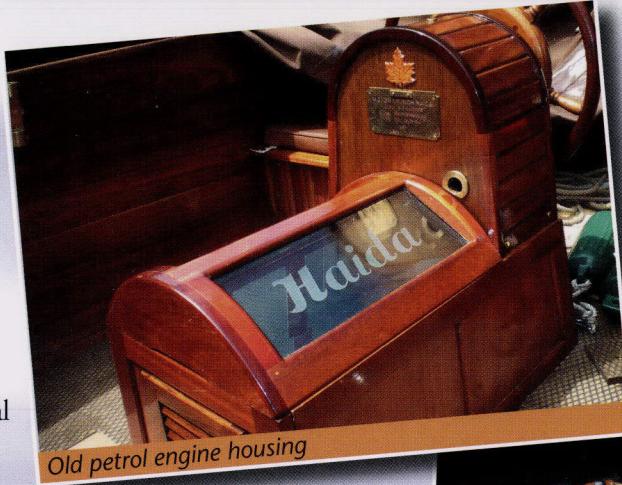
was completed in September 1999. I have been a member of the Steam Boat Association since 1975, and up to 1992 had installed steam plant in, and enjoyed owning and running, two successful launches: *Theansa* and *Scylla of Messina* which are still in service with European enthusiasts.

I first met Bill and Veronica Selby at a steam boat rally in 1982 and subsequently many other rallies over the years. It was therefore a total surprise to me, as an orthodox steam man, when Bill converted *Serena* to electric drive.

What on earth could be the reasoning behind such a radical move? I was compelled to investigate this further. Some of us of course had already reluctantly accepted Ian and Sylvia Rutter's somewhat eccentric hybrid steam/electric launch *Irene* and covertly admired the way Ian engaged electric drive for the relatively short trip from a slipway to the rally site on the first evening, usually after a tiring road journey, while the rest of us would be waiting for steam pressure or would beg a tow. I must admit that I do remember actually contemplating treason after having a glass of lunch by considering the purchase of a battery plus an electric outboard for just such occasions, but to convert totally to electric would require very careful consideration.

I made a start by joining the EBA and asked lots of questions but the deciding factor for me, after getting a great deal of practical and technical advice, was perhaps the simple logic of my advancing years and the sheer convenience of electric drive, coupled with the challenge of personally carrying out all the conversion work.

With this in mind I decided on the same power unit Bill fitted in *Serena* and duly contacted Rupert Latham, another old acquaintance from the 1980s, who put together a kit of parts for me.



Old petrol engine housing

The equipment supplied included 8 x 6 volt, 200 Ah batteries, an SEM 1.5 kW 48 volt motor with mounting bracket, a Zapi motor controller,

which is mounted under the aft deck, and a Zapi 20 amp charger fitted under the fore deck; both spaces are well ventilated. The kit came complete with insulated battery terminals, wiring and a console with control lever, key switch, ammeter and battery indicator plus a control wiring harness and wiring diagram. On advice I also fitted an additional Faria battery indicator.

All I had to provide in addition was an auxiliary battery for the navigation lights, cool box and horn, a main battery switch, charging cable and the 12in x 7½in prop from the original petrol engine installation which gives quiet vibration-free cruising. The mahogany and etched glass topped petrol engine housing was also retained, together with the steering console.

All the traction batteries are housed in an epoxy lined ventilated pine box, fitted directly on to the previous steam boiler supports, which is topped with a varnished mahogany, brass-hinged lid and frame matched to the original forward side seats. This work was carried out by my brother-in-law Ted who is a carpenter and has been my boating buddy for many years.

In September 2010 we spent a family holiday at Lake Windermere where *Haida* performed beautifully, with lots of smooth quiet controllable power or, as Ian Rutter explains it: 'second hand

steam power from a power station at the turn of the switch'. The total working weight saved over the steam installation was found to be 107 kg. She floats level on her correct marks and the towing characteristics have improved. Over the winter lay-up period I fitted a Smiths speed log and a

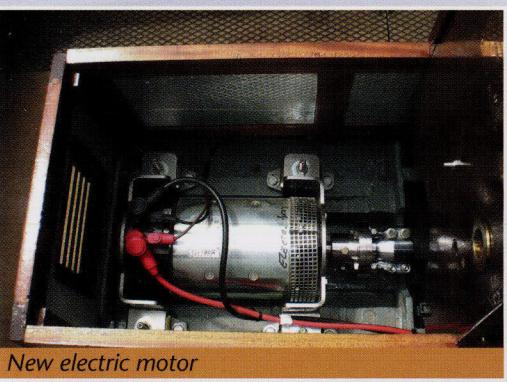


Helm position

pulse tachometer and at the end of the season I plan to add a few more coats of varnish.

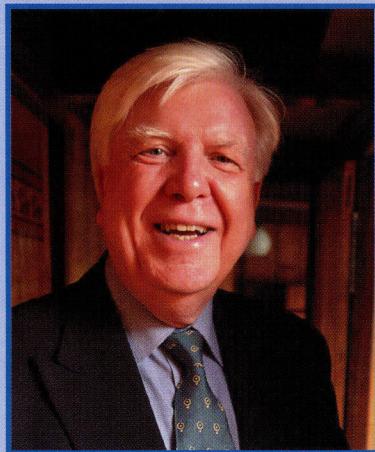
The Name *Haida* is pronounced 'hide-a'. The Haida were a sophisticated Indian tribe who lived on the west coast of Canada; their hunting ground was the sea. I chose the name because of emotional family ties with Canada, plus they have a Tribal Class destroyer as a naval war memorial called HMCS *Haida*, built in 1941/2 at Newcastle-upon-Tyne just a few miles from where I was born in 1941. I convinced myself that since my boat was an Indian Runner design the tribal name plus sentimental Geordie heritage would be a clever connection. You can therefore imagine my chagrin when I found out later that an Indian Runner is a species of duck!

I have no regrets at all about converting my launch and would certainly recommend electric power to all who require quiet boating without drama. Ted says it's nice to see me enjoying the scenery instead of with my head down, fiddling with the engine and boiler. Also it must be recorded that the welcome we received when attending our first EBA rally on the Great Ouse last year without a boat was both genuine and warm, and I'm looking forward to many future rallies.



New electric motor

## Aitken Clark Scholarship



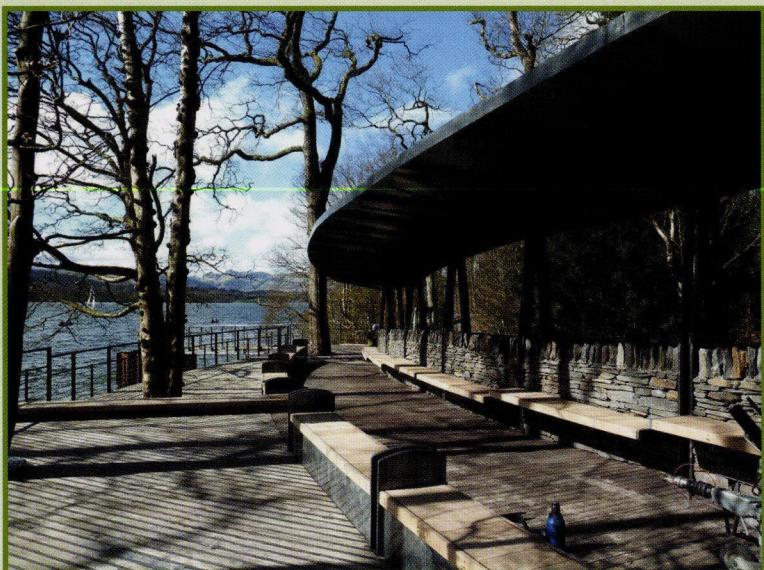
A new scholarship has been set up in memory of Professor Aitken Clark, who was President of the EBA for four years from 2001. The Aitken Scholarship will support the development of young people and volunteers working with the Broads Authority, Europarc, the British Trust for Conservation Volunteers, the Global Nature Fund Living Lakes Network and the Wherry Yacht Charter Trust. Scholars will be given the opportunity to travel on study visits and exchange knowledge and ideas with partner organisations. The scholarship will be established initially for five years with up to 25 scholars over that period.

Professor Clark, who died in April last year, was the first Chief Executive of the Broads Authority when it was established in 1979, President of the Europarc Federation from 1990 to 1996, Vice President of BTCV and Vice President of the Global Nature Fund. As President of the EBA he was able to use his influence with the many organisations with which he was involved to support the cause of environmentally friendly boating.

## New Jetty for Windermere

The opening of a new floating passenger jetty on England's largest lake is only a few weeks away. The first phase of the project at Brockhole, the Lake District visitor centre near Ambleside, was completed in April with the official opening of the £300,000 landside works. A further £500,000 was required for the construction of a 30 metre articulated barge and floating platform to enable the jetty to be floated down Windermere. Around half of the finance for the project came from the European Regional Development Fund.

With the refurbishment of the Brockhole building, a new children's play area, exhibition space, and shop and café refits it is hoped that the centre will attract around 140,000 people this year. And with the new jetty in place, far more of them will be able to arrive by boat, increasing visitor numbers without increasing road traffic.



## Funding for Tidal Generator

The Broads Authority's Sustainable Development Fund has made a grant of £7,500 to support research into a tidal generator to harvest electricity and protect the Broads from flooding. The money will help Lowestoft company 4NRG to develop its prototype tidal energy harvester into a flood barrier with an integrated shutter system which could be built across the River Yare at Great Yarmouth. The barriers would help to pay for themselves by producing electricity for the national grid. They would generate a reliable supply of renewable energy in almost any weather, and at times of a very high or surge tide the shutters would close to serve as a flood barrier.

The Broads Authority has also received £800,000 from the European Regional Development Fund for work with three partners from Holland, Belgium and France comparing dredging techniques and studying how to reduce sediment coming into the waterways and how best to remove it. This is the second tranche of money the Authority has received from the fund in recent times after 500,000 euros were awarded in 2010 for a range of sustainable tourism projects including the website [www.enjoythebroads.com](http://www.enjoythebroads.com).



## PlanetSolar in Australia



Arrival in Brisbane

The 102ft catamaran TURANOR PlanetSolar is now more than half way on its solar voyage round the world, having arrived in Brisbane, Australia at the end of May. Since the report in the last EB News it has crossed the Pacific via the Marquesas Islands and Tahiti, but there was a slight setback when problems occurred with the steering system of the propeller blades 60 sea miles beyond Bora Bora. In lively seas and 15 knot winds the boat returned to Bora Bora for two weeks of provisional repairs. After successful tests it continued to Tonga, arriving at the end of April, and on to New Caledonia, having covered 52% of the total journey powered only by solar energy. Following maintenance work at a shipyard in Brisbane it will set course for Hong Kong, Shanghai and Singapore.

## Nanni Hybrid System for Greenline 33

Nanni Diesel's N4 60hp engine has been chosen by Slovenia-based Seaway to power its new hybrid Greenline 33, which was on display at this year's London Boat Show and awarded 'Green Boat of the Year' by Practical Boat Owner magazine. The Nanni hybrid system was tested by *Ecotroll*, featured in the last EB News, on its Arctic exploration in 2010. *Ecotroll* was equipped with two 7kW electric motors combined with two N4 60 diesel engines and, with the help of solar and wind power, was able to use only electric power while cruising in Arctic waters.

Nanni have also signed a partnership agreement with the French department of Aquitaine for the development of 'sustainable boating' in the region. This will help to establish partnerships between research centres and manufacturers to create more eco-friendly propulsion solutions.

## Cordless Canoe Challenge

Winner of the first ever Cordless Canoe Challenge, held at the Beale Park Boat Show on 11th and 12th June, was Toby Vokuhl who was presented with £1200 worth of power tools by Kevin Brannigan, Marketing Manager of Makita UK, sponsors of the competition. Organised by Water Craft magazine, with the EBA's Ian Rutter and Andrew Wolstenholme acting as stewards, the Challenge was open to boats under 16ft (5m) racing around an L-shaped course on the Beale Park lake propelled solely by cordless electric tools. Toby's *King Canute*, a sleek launch made of 6mm birch ply and powered by a single 18 volt drill driving a large diameter model aeroplane propeller, reached the finishing line when the other two boats in the final were just at the halfway point.

Toby, a professional carpenter, said he could only justify the cost and time spent on making his boat if it could be used afterwards, so it had to be stable enough to carry him and his 3-year old son on the Thames, his local river. As he mainly worked on the boat

during his lunch break he wanted a simple design, so constructed the hull by twisting plywood 90 degrees, from vertical at the bow to horizontal at the stern. Starting with a 1:4 hardboard model, he translated the lines on to plywood sheets which he had scarfed together. With the help of flexible battens he then glued stringers along the outer lines of the bottom planks fixed at the centre line with cable ties and pulled them into shape with the help of a mate and some clamps, and then used thickened epoxy along the centre line joint. The upper planks had to be slightly steamed to make the opposite twist, from a horizontal foredeck to vertical at the stern.

Toby now plans to fit a small electric motor and battery and would welcome advice from EBA members. If you can help, his email is [tobias.vokuhl@gmail.com](mailto:tobias.vokuhl@gmail.com)

A full report on the Beale Park Boat Show, including the Cordless Canoe Challenge, will be in the autumn issue of EB News.

KATHY MANSFIELD



King Canute (foreground) in the Cordless Canoe Challenge



Isis 14 and Windrush 25

## Boat Show in Birmingham

The 50th Boat, Caravan and Outdoor Leisure Show was held at the National Exhibition Centre in February. EBA members Paul and Pat Wagstaffe went in search of electric boats and equipment.

The boating area at the show was smaller this time than in recent years. This was partly due to the economic situation, but was also caused by boat exhibitors deciding to support the first ever Liverpool Boat Show. Its organisers cancelled the new event days before the Birmingham show opened, but there was not enough time for exhibitors to change their plans.

Bossoms Boatyard was exhibiting the electric powered Isis 14 and Windrush 25 which looked good together on their stand. The Windrush river launch was designed by John Moxham to combine traditional English style with

contemporary technology. It has a low wash GRP hull for easy maintenance with a hardwood cabin and deck. The Isis 14 day boat offers a choice of a 2.2kW electric motor or a 9HP Yanmar diesel engine and has seating for five passengers plus skipper. Easily trailable, it can be used on estuary or coastal waters as well as inland waterways.

Salters had a large stand which included one of their popular skiffs, many of which are powered by electric outboards. Also on display was their Skipper 15 Electric with a canopy, and the Mystic 19ft 6in electric dayboat.

Electric outboards were featured on a number of stands including Torqeedo with their latest models and a water-filled test tank. Barrus were showing both the MotorGuide and Sunsport electric outboard motors at competitive prices. Canoe specialists Desperate Measures had a Minn Kota Riptide RT40 on display.

As for electric equipment, there were items of interest to EBA Members on a number of stands. Mastervolt were showing their compact and lightweight 'Drivemaster' 2.5kW propeller drive, along with their new versions of lithium ion batteries, chargers and battery management systems.

Within the caravan display halls there were a number of suppliers of 'leisure batteries' at competitive prices and the 'CTEC' battery chargers. And if you wanted to leave your electric boat and



Mastervolt Drivemaster



cycle along the towpath there was a display of electric bicycles, including one which had its own tent attached!

The final three days of the Boat and Caravan Show were linked through the halls to the Outdoor Leisure Show which was full of extra exhibitors and activities for young and old visitors. One ticket gave access to all the halls and added to the combined attendance. We hope that the same arrangement will apply in 2012 and that more boat exhibitors will support the excellent shows.



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## Boat for Sale

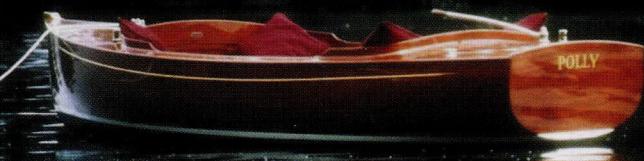


See Classified on page 24

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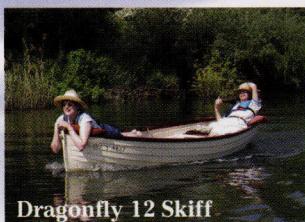


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# A New Electric Launch in Canada

BILL LOCKINGTON



Cruising on Sparks

**Canadian EBA member John Hayes is captain of the electric tug *Greenhorn 1* whose trip on the historic Rideau Canal was featured in EB News in Autumn 2007. While *Greenhorn* was undergoing renovation at Bear Mountain Boats in Peterborough, Ontario, John enjoyed seeing a most interesting new electric boat taking shape so he asked the owners to tell us more. Ted Moores and Joan Barrett describe the designing and building of *Sparks*.**

The first canals in Ontario were built in the mid-1800s; because of the terrain and distance to be covered they were dug to join swamps, rivers and lakes, with dams to change water levels where necessary. While joining and controlling existing lakes greatly reduced the digging, the tradition of propelling the boat from a tow path was not going to work here. Fortunately, steam propulsion had found its way into boats, making this new method of canal building feasible. It is the steam yachts of the late 1800's that became the inspiration for *Sparks*.

Steam and electric propulsion have much in common. They both have large mass and weight (engine, boiler and firebox vs. batteries) per horsepower. Steamboats in our area averaged about one horsepower per ton of displacement. *Sparks* with a displacement of 6800 pounds needs about three horsepower to reach maximum hull speed of seven knots.

Normal cruising speed is about five knots on one and one half horsepower.

The typical steam yacht used in Ontario was an easily driven fantail hull shape with a partially enclosed cabin forward and curtains to enclose the aft cockpit when needed. The ice free navigational season is short, so to get the most time on the

water means some nasty weather at either end of summer. This arrangement was a good choice for *Sparks* as cruising amid the fall colors made for some of the best days of the season. With a small electric heater used sparingly, sleeping in the cabin was comfortable even with frost on deck. *Sparks* is perfect for a couple to cruise the inland waterways in understated elegance. Thanks to Parks Canada, a seasonal mooring pass includes a campsite along with access to washrooms, fresh water and, in some locations, shore power.

*Sparks* was built as a science project; this meant that everything from the concept of 'slow boating' to construction and propulsion system could and was questioned. Solutions were guided by the desire to get a quality boating experience consuming the least amount of fossil fuel. This was accomplished by embracing the best of recreational boating from the past while incorporating the technology of the future.

Taking *Sparks* from a concept to a beautiful, easily driven launch was a collaboration between Joan Barrett defining a livable space, yacht designer Steve Killing working his magic, his son and electrical engineer Jonathan Killing designing and installing the propulsion system and the builder, Ted Moores looking for a chance to see if 35 years of building wood-composite boats has taught him anything. At some point, every boat builder deserves the chance to put all of the tricks he has tried in his career together to see if he has learned anything.

The hull is strip-plank/epoxy using local white cedar planked over CNC cut station moulds. Before turning the hull over, the bottom was finished – the builder hates working on his back. To keep from scratching the paint while turning, two plywood wheels were made to fit around the hull. These were riding on two casters each, so turning the 800 lb. hull was simple and safe.

All of the components in *Sparks*, including hull, deck, cabin sides and top, are constructed on the core/composite construction principle. This means that the wood is used as a core which has been covered on both sides with fiberglass and WEST System epoxy. Wood is also used as a veneer over these stabilised surfaces to create the style of a 1800's vintage steam launch.

*Sparks'* cabin top offered some design and construction challenges. The first objective was to incorporate the solar panels into the roof in a way that didn't distract from the traditional feel or look like an add-on. The cabin top was constructed much like an airplane wing; light frames covered with thin skins on both sides. This made it possible to install the solar panels inside the top without compromising the complex shape of a traditional cabin top. Skins were built over a mould using  $\frac{1}{4}$ " strip-planking covered both sides with fiberglass and epoxy. Before installing on the boat, the inside was finished with a basswood veneer in a traditional style. Completed, the top was under 200 pounds which met the objective of keeping most of the weight below the waterline.

The motor is a German-made Perma PMG 132, 4.7 kW at 48 volts, visually about the size of a washing machine motor. Instead of belts and pulleys which waste energy, this boat has a 3:1 gear reduction bolted directly to the electric motor.

There are four banks of four sealed deep-cycle glass mat lead acid gel (Concord-Lifeline GPC 317) 400Ah 12 volt batteries. Each bank of four is wired in series to produce 48 volts; these four banks are then connected in parallel. In addition, there are two other heavy duty batteries – one for

the generator's starter, the other to run the bow thruster, computer and other 12V 'house duties' (including 120 volt galley appliances). The batteries can be charged by either solar panels, diesel generator or shore power.

The solar panels are eight Kyocera 50T – total 400 watts at 48 volts. The panels will charge the 60% discharged battery pack to full capacity in about two days.

The German made Fischer-Panda diesel generator is also 48 volt. The systems (electric and generator) can be isolated and the computer bypassed if necessary to provide power directly to the motor. The generator is very quiet, being housed in a sound cancelling enclosure with wet exhaust and heat exchanger. The charger/inverter is an Outback FX3048t. It sorts out 12, 48 and 120 volts as well as sending a record of functions to the computer.

A touch screen computer monitor or 'user interface' shows the operator the current status of all components and systems – including power flows and state-of-charge. When the batteries have been discharged to 60%, the

computer tells the generator to start, at which time it is powering the motor and recharging the battery bank. The power consumption can be matched to desired speed. For example, on a sunny day the motor can be matched to solar input for a free ride. The computer is also recording the performance of all systems for future reference as well as showing GPS coordinates.

## Specifications:

Launched 2010

Builder – Bear Mountain Boats, Inc.,

Peterborough, Ontario, Canada

Length 30' 3" (9.22 meters)

Beam 6' 11" (2.11 meters)

Draft 2' 0" (61 meters)

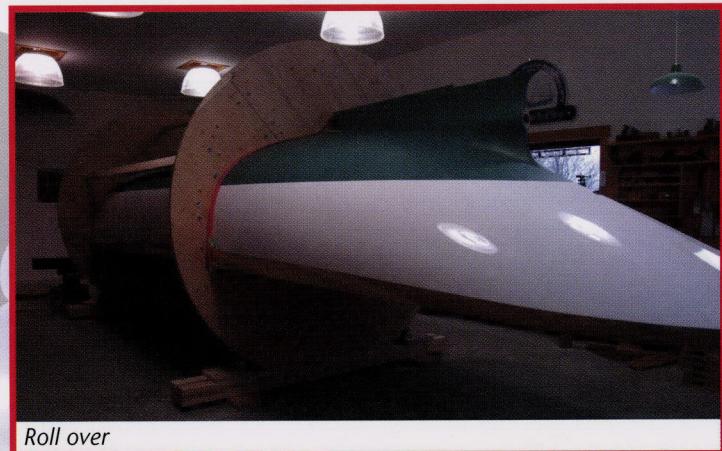
Displacement 6800lbs (3084.42 kg)

Top Speed 7 knots

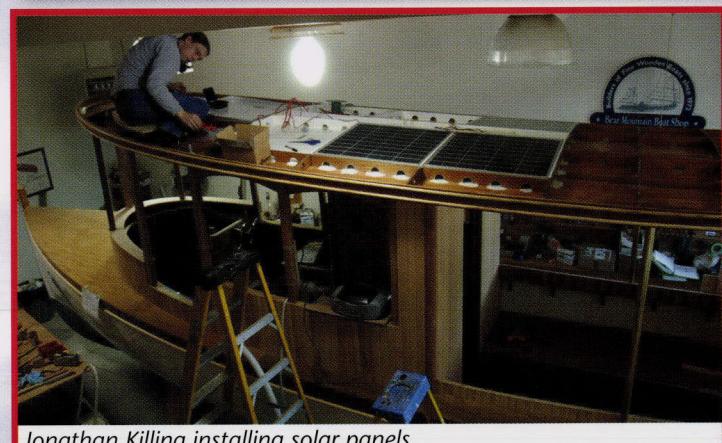
Cruising speed 5 knots



Console



Roll over



Jonathan Killing installing solar panels

TED MOORES

JOAN BARRETT

# A Great Cruise on the Great Ouse

For several years, the EBA has organised a May cruise for members in this beautiful part of East Anglia, but this year we were invited to a new event hosted by Jones Boatyard at St Ives, Cambridgeshire. EBA Secretary Barbara Penniall reports on a great weekend of electric boating.

The invitation was for electric boats, steam boats, classic boats, skiffs, canoes – in fact just about any craft that would allow you to enjoy the river. We decided to support the event, but combine it with as many short cruises and social occasions as possible. This would allow our members to enjoy boating in company with like minded people, whilst also enabling visitors to see electric boats in action and talk to the owners about the technical and practical aspects of an electric boat.

The venue was excellent. A large, well run marina and chandlery with helpful and co-operative staff. Although they gave the impression it was a very relaxed and informal affair, the organisation was far better than many of the larger

IAN RUTTER



boating events we have attended over the years. The Environment Agency (Anglian Region) were as helpful and supportive as ever, waiving the licence for the whole weekend for anyone taking part in the event.

Our boats, which trailed from all over the country, included *Adelaide* the beautiful replica Edwardian launch owned by Georgina and Jeff Waterson, EBA Chairman John Hustwick's 18ft *Frolic Rhapsody* and Roger and Julia Woodhouse's Finnish skiff *Swan*. They were joined by *Serena*, Bill and Veronica Selby's 114 year old launch converted from steam to electric and another recent conversion, Peter Brennan's 18ft open launch *Haida* (pictured on the front cover). Also in the fleet were *Silent Adventure* and *Silent Explorer*, an open launch and canoe owned by the Goldring family, *Pilgrim Minor*, Julia Briar-Filby's Interboat and Jack

Street's Seahopper *Grabachance*.

New to our cruises – and very welcome – was *Barouche* a new design from Hedley and Pippa Bewes which attracted much interest over the weekend. The social seating arrangement (four people facing each other under a canopy) mounted on a catamaran hull made it a very stable craft. Another new build was *Batchawana*, a strip plank canoe built of cedar owned by Percy and Eileen Hampton and pictured on the inside front cover. (Eileen later 'saved the day' for *Serena* by donating a safety pin to repair the rev counter).

Unfortunately, *Annie*, the solar powered cabin launch owned by Les and Elaine Fidler, had to remain at Westview Marina because of the low water level at Earith. *Wayfarer*, Alex and Betty Khot's traditional cabin cruiser was enjoying some restoration work but they did join us for a short cruise in



*The electric fleet at St Ives bridge*

their Portabote on Sunday afternoon. Alex was delighted to find a bargain Minn Kota in the chandlery which gave the boat a fine turn of speed.

The show took place over Saturday and Sunday and attracted many visitors

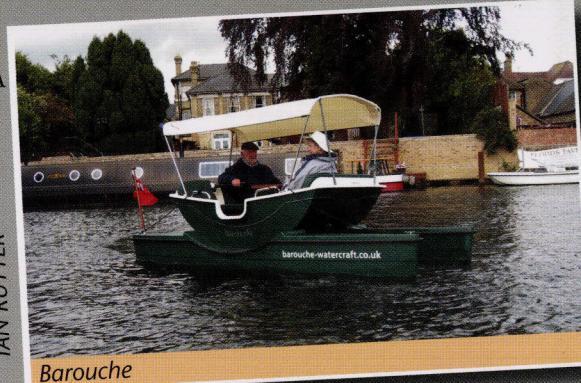
members to take to the dance floor. On Sunday Julia Briars-Filby very kindly organised a Chinese take-away meal for us and again provided an opportunity for everyone to get together and enjoy an extremely entertaining evening.

seriously interested in electric boating. The EBA stand was kept busy answering questions – including an interview for Radio Cambridge – but it was very helpful for people to be able to put questions directly to the boat owners. EBA member Chris Morgan was running electric boat trips in his two Phoenix 21 launches *Whisper* and *Meander* which proved extremely popular, as did *Trickle*, his self drive hire boat.

Our craft took part in two parades each day and then went for a longer cruise in the early evening on Saturday and Sunday. We returned for a splendid hog roast on the Saturday night which, combined with a local ceilidh band and a well stocked bar, encouraged several EBA

IAN RUTTER

*Barouche*

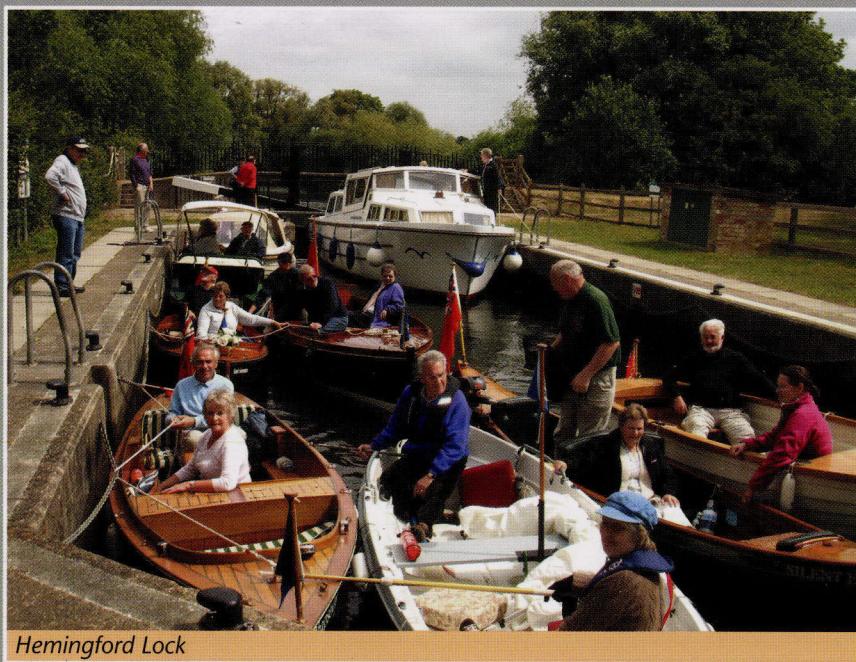


*Alex and Betty in the Portabote*

BARBARA PENNALL

Monday had been advertised as a free day so we organised a flotilla of electric boats to cruise on the River Great Ouse from St Ives through Hemingford Lock and on to Houghton where we stopped for lunch and had the chance to explore the village and the National Trust Mill. *Mr E*, a 16ft oak trimmed dingy bought last year by Jeff and Jacquie Hide, joined us that day and we certainly drew a lot of attention from other boaters and walkers, particularly when passing through the lock. Unfortunately the weather turned into a steady drizzle on the return trip, but it certainly did not dampen the spirits of our very cheerful band of boaters.

This was our first combined cruising weekend and boat show. Members have been very positive that it was an extremely enjoyable weekend and everyone entered into the spirit of the event. Our boats were varied in style which was very helpful to illustrate the range of electric craft. Thanks to the excellent organisation by Mick and Carol Jones and their sons Ben and Sam, the encouragement from the Environment Agency, the local help from Les and Elaine Fidler and Julia Briars-Filby and overall the cheerful participation from so many EBA members, we've successfully started the 2011 boating season.



JULIA BRIARS-FILBY

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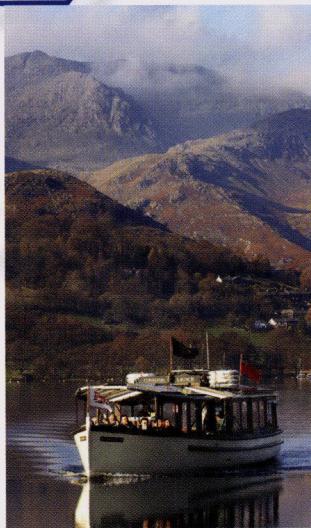
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Arvind Rabadia with two Lynch DC motors and the Mansura Medal



Monte Gisborne and Ray Hirani with their medals and the model of the new solar powered Loon

## The Mansura Trophy Awards

EBA members gathered at the Royal Thames Yacht Club in Knightsbridge, central London on 12th May for the presentation of awards for new developments in boats with hybrid electric propulsion. Report by Sylvia Rutter with pictures by Ingrid Abery.

The Mansura Awards, made every two years for excellence and innovation in marine hybrid power, are named after a 1912 cabin cruiser driven by a petrol-electric hybrid propulsion system developed by her owner, Jack Delmar-Morgan. Kevin Desmond, founder editor of Electric Boat News, persuaded Mr. Delmar-Morgan's grandson Julian and Royal Thames Yacht Club member David Barrett to commission a trophy to encourage hybrid boat propulsion. Eligible boats must use at least two independent sources of propulsive power and the final drive system must be electric. The awards, organised by the RTYC, were sponsored this year by Bosch Engineering, whose President Bernhard Bihl presented the trophy and medals.

The EBA was invited to set up a display about the Association with information, leaflets, magazines and pictures of a variety of electric boats. EBA member Graeme Hawksley had his new diesel electric motor on show and Ian Rutter had a selection of pictures of his new hybrid cabin launch *Eddy Current*. EBA members, including our President Malcolm Moss, were on hand to answer questions and supply more information for guests at the reception who included the Deputy Lord Mayor of Westminster, the chief executives of the Royal Academy of Engineering and the Institution of Mechanical Engineers along with representatives from the Bosch Group, Imperial College, the Royal Yachting Association and the Green-Blue environmental initiative.

The Mansura Trustees award a medal to the organisation which they consider has made the greatest contribution to the advancement of marine hybrid propulsion in the preceding two years. This went to the EBA's Cedric Lynch and Agni Motors for the development and promotion of the compact lightweight

motor, invented by Cedric, which is used in electric boats all over the world. As Cedric was working in India, Arvind Rabadia, chief executive of Agni Motors, accepted the award.

Winner of the Ocean and Coastal Award, and of the Mansura Trophy itself, was Dutch company African Cats for *Green Motion* which was featured in the Spring 2010 EB News. Developed in Durban by Gideon Goudsmit, the lightweight catamaran eliminates fossil fuel for sailing yachts with its retractable propulsion system which enables batteries to be recharged while under sail.

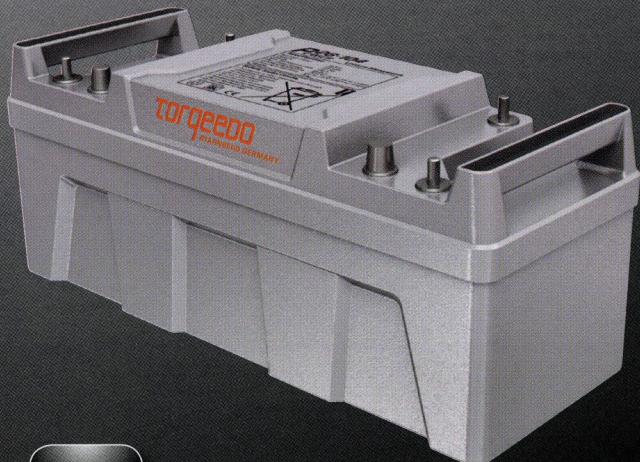
The winner of the Lake and Inland Award, and runner up for the trophy, was EBA business member Monte Gisborne of the Tamarack Lake Electric Boat Company in Canada. Monte and his business partner Ray Hirani brought a model of their new solar powered pontoon boat, named the Loon after the North American bird which is very like the EBA's grebe. The first prototype was launched in 2005 and tested by Monte and his wife and daughter on a 170 kilometre cruise along Canada's Trent-Severn waterway. The following year a more advanced version of the boat, with sleeping accommodation for four, made a 6-day trip on the historic Rideau Canal. After a journey across New York State in 2007, which generated a lot of favourable publicity, Monte was offered funding to develop his boat there, and production of the new 'Loon' is about to begin in Rome, NY, on the banks of the Erie Canal.

On his first visit to the UK, Monte enjoyed meeting fellow EBA members and seeing something of London. As a great great grandson of Frederic Newton Gisborne, who worked with electrical pioneer Michael Faraday, he particularly enjoyed seeing the re-creation of Faraday's original laboratory at the Royal Institution. The EBA's Tony Rymell then took him on a West Country tour, where he admired boats on the Kennet and Avon, visited Bristol and Bath and spent a whole day on Brunel's *SS Great Britain*. "Tony was the consummate host and tour guide" said Monte "and truly an awesome time was had"

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# New Electric Boats around the World

Kevin Desmond has been researching new developments in electric boating, starting with his home base in France, but ranging much further afield beyond Europe to North and South America and China.



L'Olt

The River Lot in south-west France, which was closed to navigation from 1928 until this year, has been enjoying a new lease of life thanks to *L'Olt* (the ancient word for the Lot), a 15-metre hybrid/electric cruising restaurant. Operating from Flagnac, the *L'Olt* has one hundred seats, of which 64 are table settings, and an upper-deck; it is powered by two EMC electric motors of 22kW each and a back-up internal combustion engine. Its 400,000 euro price tag was largely picked up by the regional body responsible for renovating the Lot Valley. The boat was built by CNFS, the Chantier Naval Franco-Suisse of Villers-le-Lac, whose two solar-powered boats *Vénus* (75 seats) and *Sauconna* (110 seats) enable tourists to explore the nearby Saut du Doubs gorge.



Ecocano

The French boatyard ODC has set up near the north-east Chinese seaport of Dalian and during the next decade will be using their host country's technology to produce a dozen 50-150 passenger electric waterbuses each year. In September 2009 ODC delivered its first Chinese-built boat, the 10-metre *Ecocano* to Azur Cruises for trips along the canals of the Mediterranean port of Sète, known as 'the Venice of the Languedoc', and the oyster farms around nearby Lake Thau. The *Ecocano*, with twin 20 kW motors, is the world's first passenger boat to be powered by lithium-ion-phosphate batteries.

ODC is working with the Chinese firm Sky Energy to integrate lithium-ferro-phosphate batteries, counting on the fact that these lighter, more energy-dense units will fall in price as the automobile industry adopts them. With a potential clientele of French local and regional authorities buying 'green' in the spirit of Agenda 21, the United Nations action plan for sustainable development, ODC has signed a partnership with Sealease which will finance the building of the boats and then rent them out to operators.

An interesting new electric boat with open-ended stern is being built in the fishing town of Orio, in the Basque province of Gipuzkoa in northern Spain. The Silennis S.020 is 4.8 metres long and 1.8m wide with a top speed of 6 mph. Its Kräutler electric motor (1.8 kW or 3.5 kW) is a submersed rudder-propeller, enabling 360° manoeuvrability. Both the hull configuration by Jose Alegria and design by Dhemen Design (3 brothers Igor, Asier and Mikel Esnal) have been registered. Batteries can be lead or lithium and solar panels are optional.



Silennis



GardaSolar on Lake Garda

In north-east Italy, Alberto Pozzo and Alessio Zanolli, based in Rovereto in the province of Trento, have produced the GardaSolar, an elegantly curvaceous 3.85 metre, joystick-controlled, solar-hybrid four-seater dayboat. Built of 100% recyclable composites, there are two versions – the pedalo-style E-Light and the more sporty E-Xclusive. Interest in this Italian boat has already been shown by India, the Bahamas and Dubai.

In the USA, Blue Planet Catamarans have launched a new 32ft catamaran, powered by two 2.0 R Torqeedo electric outboards and claiming an 80 statute mile range. Gene Carletta, chief executive of the North Carolina boatyard, is also building a hybrid electric version, its twin 30-hp Tohatsu four-strokes doubling the top speed to 15 mph.



Blue Planet

Carletta says "The 32E is basically a powerboat designed for his family by an ex sailor inspired by the silence of sailing to pursue an electric motor option." Eventually he plans to 'container' his e-cat over to Europe.

In Canada, Princecraft of Princeville, Quebec, have been building petrol-engined aluminium boats since 1954. They have 300 employees and dealers throughout North America. Since last year, they have been offering three boats with propulsion by Torqeedo electric outboards. Princecraft's 15ft Brio 15e and the 17ft Brio 17e pontoon boats were specifically designed to be more compact and lighter than traditional versions. The 14ft Yukon DLE fishing boat was also reconfigured to better fit an electric outboard. Currently Torqeedo's Cruise 2.0 and 4.0 R are offered with these models, with possibly more powerful units available in the future. Solar panels extend battery life, which is gauged by an on-board GPS and distance indicator. The 24 volt charger can be plugged into any standard plug, with a recharging time of 45 minutes.

"There are lots of gas-powered engine restrictions on lakes in Canada" said Princecraft president Donald Dubois. "These boats help get around those restrictions without sacrificing an excellent boating experience overall. Normally, boatbuilders create the boat first and then determine the method of propulsion, but we designed these craft around the electric motor."

And finally to Chile, where a 16-passenger, solar-powered water taxi has been operating on the several rivers around the city of Valdivia in the beautiful Lake District. After three months of reliably plying its trade, *SOLAR 1* has just been joined by a second boat. The locally-built Alowplast hull is powered by an Austrian 4kW/ 48V Kräutler electric motor which derives its energy from Black 230/07 photovoltaic panels made by the German company Solon. According to Alowplast yard manager Alex Wopper: "Ultimately there will be an entire fleet and a floating solar recharging station with eight pontoons, offices and bistros."



Solar 1

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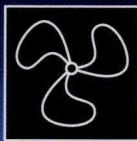


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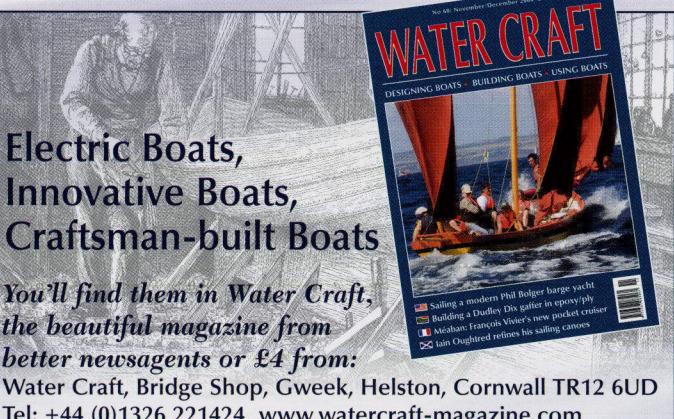
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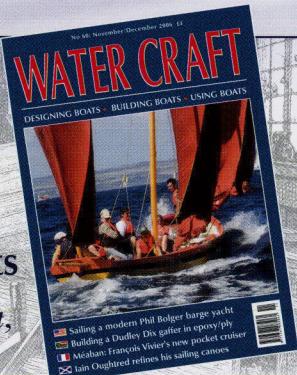
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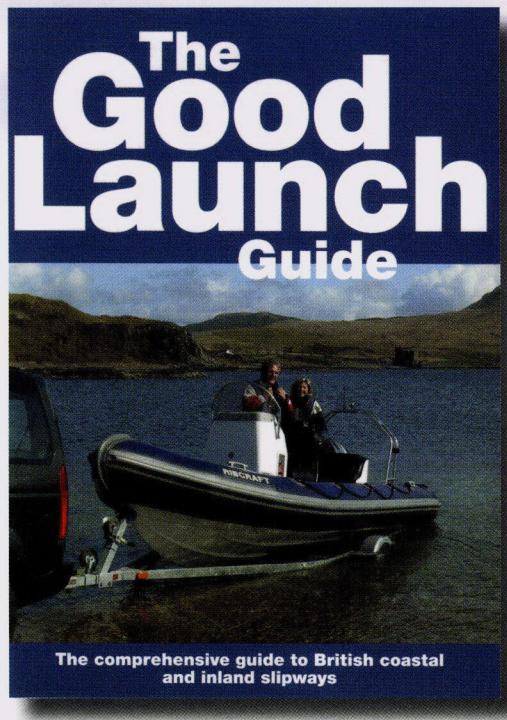
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# Books for Boaters

The EBA has received two recent publications which are likely to be of interest to electric boaters.



## The Good Launch Guide reviewed by Sylvia Rutter

If you like trailing your boat away from your home waters, the latest edition of The Good Launch Guide could prove very useful. It has detailed maps of England, Scotland and Wales marking slipways and marinas and has a comprehensive index with latitude and longitude references which you can programme into a SatNav. Both inland and coastal slipways are included, with details such as charges if applicable, descriptions of ramps, the facilities nearby and warnings of hazards to look out for. There are contact details for 365 marinas with good advice on successful launching and recovery of a boat.

There are occasional spelling mistakes (Outton Broad for instance) and it would be better if the rivers were more clearly marked on the maps (confusingly the wavy blue line from London to Reading is the M4 and not the Thames). If you're looking for launching sites on the Thames or the Broads, the EBA website has excellent information, with pictures, compiled by our Webmaster Nick Goldring. But if you're planning to visit other parts of the country – and the coast – with your boat, the £9.95 for this book could be money well spent.

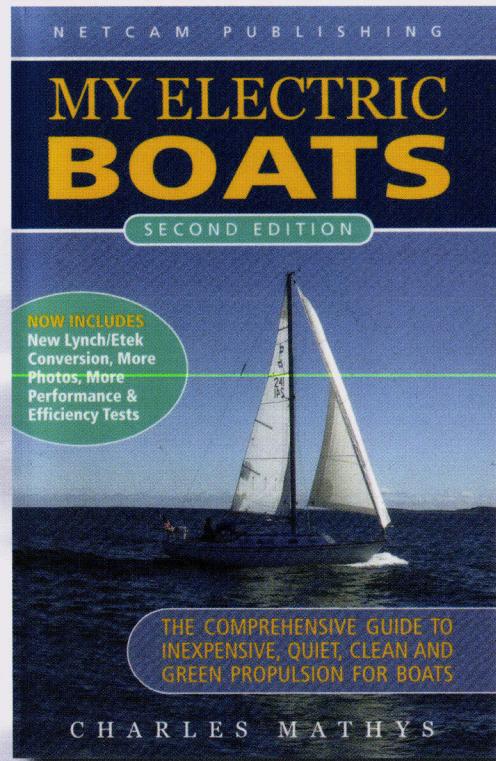
For more details see [www.boatlaunch.co.uk](http://www.boatlaunch.co.uk)

## My Electric Boats by Charles Mathys reviewed by Ian Rutter

The second edition of My Electric Boats is aimed very carefully at the more technical reader who wants to know a great deal more about electric boat design, how motors work, how the control system works and what options there are when it comes to choosing batteries. Charles has carried out a great deal of practical measuring of power required, showing how to improve efficiencies and comparing all the different types of motor. He encourages practical experimenting with details on how old and, at first glance, unsuitable motors can be rewound to make them practical for electric boat use. The second edition also covers how to go about designing a solar panel charger.

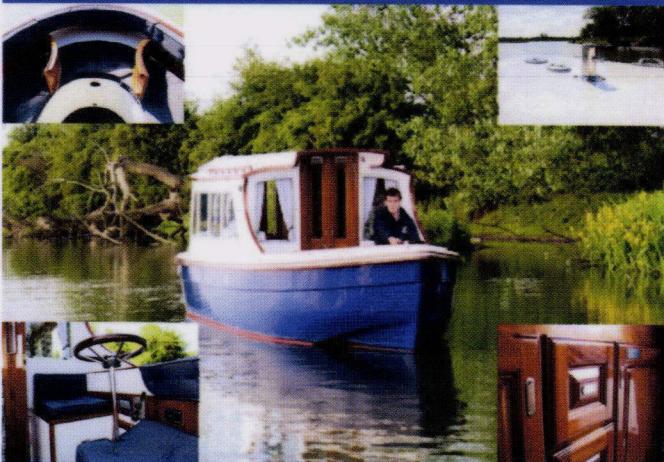
If you have a technical brain this book is very accessible and puts into understandable terms how for instance Pulse Width Modulation makes the modern electronic controller work so efficiently. The Glossary of Technical Terms puts the technology into very clearly understood English.

The book is published in the USA by Netcam Publishing. For more information see [www.myelectricboats.com](http://www.myelectricboats.com)



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The River Launch will not, of course, have the forward Cabin/Cuddy. It just happened to be bonded on to the hull I had available to model the new cabin on !!! The hard-board strips are there to represent the roof and trim. The roof will **not** extend behind the after panel as inferred.

The cabin has five equal panels on each side and brass ventilators will be fitted to the head rails of panels 1,3,& 5. The rear panel will contain an inward opening door to allow rope handling etc.,

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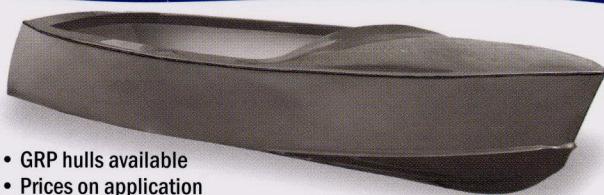


Originally built in 2003, the Hartford Slipper Launch has had very little use and has been stored under cover for several years. She has been made using hi-tech wood construction techniques with teak decks and a teak and holly cockpit floor. She will seat 4 adults on free-standing chairs. She was originally fitted with an electric outboard motor powered by 24 two-volt batteries. The marina is offering any prospective purchaser the option of having brand new replacement batteries or a brand new Mariner 9.9hp electric start outboard motor fitted. Included in the inventory are four wicker chairs, tonneau cover, full canopy and frame with removable side panels and a fold up teak table.

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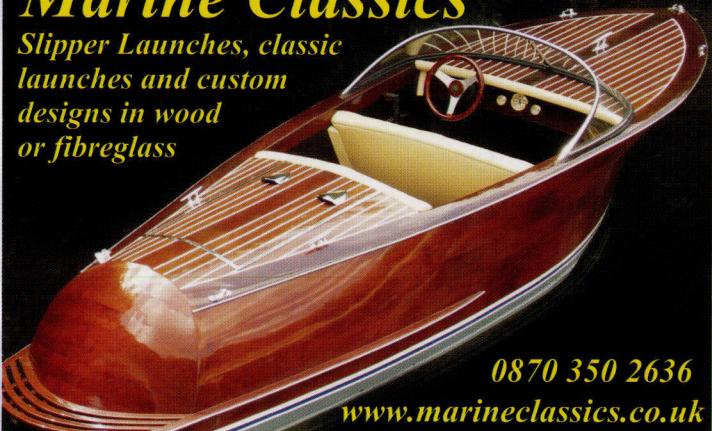
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Sarah.woolley@stanleyandthomas.co.uk [www.stanleyandthomas.co.uk](http://www.stanleyandthomas.co.uk)  
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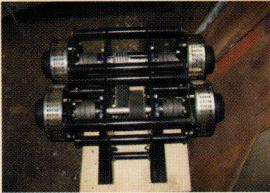
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Viking Marine provided mechanical design and fabrication for the conversion of Dutch Barge SARA for electric propulsion (see article in summer 09 issue).

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# Noticeboard

## Welcome to New Members

Private Members	Location	Boat where notified
T Austin	Great Yarmouth, Norfolk	
Felicity & David Avery	Stokenchurch, Bucks.	9ft Nestaway dinghy with electric outboard
Ron Butcher	Beaconsfield, Bucks.	Well Nigh a Whisper 20ft Cedar strip with Minn Kota
John Dixon	Brecon, Powys	Drifter, 24ft wooden narrowboat
Bob Ellis (Welcome back Bob)	Ludlow, Shropshire	Snowgoose, Frolic 21
Mr & Mrs John Friend	Henley-on-Thames, Oxon.	Libby V Electric Explorer 13
Andrew Garth	Sheffield	
Percy Hampton	Southampton	Batchawana, 16ft Ranger cano with Floder 55TGS outboard
Tim Harrison	Evesham, Worcs.	
David & Philippa Pelly	Coltishall, Norfolk.	Bramble (ex Nefertari) Frolic 21 with ELCO 1.5kW motor
Susan Samuels	Henley on Thames, Oxon.	
David Scott	Salford, Greater Manchester	Elizabeth My Dear, Norman 23
John Starkie	Horningsea, Cambs.	
Paul Stevenson (Welcome back Paul)	Hethersett, Norfolk	14ft Currie transom canoe

## Business Member

Blaxton Boats	Rossington, Doncaster	Boat mouldings
---------------	-----------------------	----------------



## Annual General Meeting

The EBA AGM will be held at 6 p.m. on Saturday 10th September at the Onslow Arms, The Street, West Clandon, Guildford GU4 7TE. This will form part of a weekend of cruising on the Wey and Arun, with dinner at the Onslow Arms following the meeting.

For more details contact the EBA Secretary Barbara Penniall on [secretary@eboat.org.uk](mailto:secretary@eboat.org.uk) or telephone 01491 681449.



## New GRP Boat

West Country EBA member Richard Nash has found a boat builder in Doncaster manufacturing a 17ft GRP hull suitable for river/canal use for under £4,000 which would be of interest to a keen DIY'er. Blaxton Boats can also offer hull, ring deck and hardwood cabin for about £6,500. Adding electric power will take this up to about £11,000 and full fit-out to a basic specification will be available for around £15,000.



## Hybrid Marine Conference

The International Council of Marine Industry Associations is holding a conference on 14th November in Amsterdam to discuss hybrid marine propulsion systems, based on information from the EU-funded HYMAR project (featured in the Spring 2010 EB News). For more information see [www.hymar.org/conference](http://www.hymar.org/conference).



## Award for EBA Business Member



EBA business member Powercell, parent company of Pb Batteries, received the 'Supplier of the Year' award at the Fork Lift Truck Association annual Awards for Excellence Dinner, now in its 17th year. The award recognises the winner's ability to offer a wide range of support and service across the industry.

The picture shows Derek Anderson, Managing Director of Powercell, receiving the award from Sally Boazman, presenter of the traffic news on BBC Radio 2, and Tim Waples of Doosan Infracore UK, sponsors of the award. Derek said that it would have pride of place at the Powercell offices in Essex as a reminder to all the employees that their hard work and dedication had been rewarded.



## New Chairman for River Thames Alliance

The River Thames Alliance, of which the EBA is a member, has announced the appointment of their new chairman John Edmonds. Former chairman of the Inland Waterways Advisory Council, John was involved in the development of the RTA from its early stages and has extensive knowledge of the Thames and other waterways. His arrival marks the departure of the previous chairman, David Suchet, who has been invaluable in raising the profile of the Alliance and attracting substantial coverage in the national press.



## Technical Advice from the EBA

EBA Vice-Chairman Private Members, Ian Rutter explains why the EBA is not able to answer detailed technical enquiries:

Often the EBA is contacted by members for technical advice, but they are confused when we only reply in general terms. We are asked for specifications of motors, batteries, chargers and how to wire it all up. The EBA used to have a Technical Officer who wrote many interesting and informative articles for EB News but also would not give detailed technical advice.

Unfortunately if the EBA gives more than the general advice covered in the information sheets available, there is a problem of commercial confidentiality and safety. We support many business members who specialise in all aspects of building an electric boat and it is their commercial expertise that the EBA must be careful not to compromise.

The components in an electrical boat are very powerful and dangerous if mishandled, making safety the Number One issue. If not assembled or charged correctly batteries can and do explode. Inadequate wiring can lead to fires. If the EBA tried to give precise details of how to make an electric boat and anything went wrong or someone was injured, the EBA would be deemed to be liable. For these reasons technical enquirers are first directed to the Information Sheets (free of charge to members) or, if this does not solve the problem, the EBA suggests that a relevant business member is consulted.

# Electric Boat Association



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Malcolm Moss

**Honorary Vice President**  
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**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. Tel. Brian Couser on 01672 540987 (Marlborough, Wilts.) or email browncou@btinternet.com

**Thames Canoe** (Four Winds) 25'-3" x 4'-8" with upgraded 2.5kW motor and 48 volt battery system, together with purpose made galvanised road trailer. 6 seat interior beautifully crafted in mahogany and cane with 14 plush cushions. Dual helm stations and fitted with speed/distance log, showing less than 200 miles from new. Arguably the most elegant of its type and in mint condition. £28,500. 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 sutclifeph@gmail.com

**Combi 700 24V**, series-wound DC outboard motor. Heavy duty, very strong Dutch electric outboard, complete with motor control switch with full ahead/half ahead/stop/half astern/full astern positions. Offers invited. Secretary@eboat.org.uk 01491 681449.

Pictures and details of all the boats are on the EBA website [www.electric-boats.org.uk](http://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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