

Volume 14 Number 3 Autumn 2001

Electric Boat **NEWS**

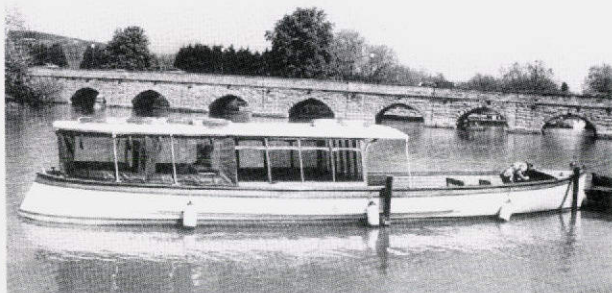
The Journal of the Electric Boat Association



Record Attempt – 137 miles in 30 hours • Solar Flair – a solar solution
The Biennial General Meeting • Thames Traditional Boat Rally



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Mayflower, Stratford upon Avon, 1999

Some recent achievements:

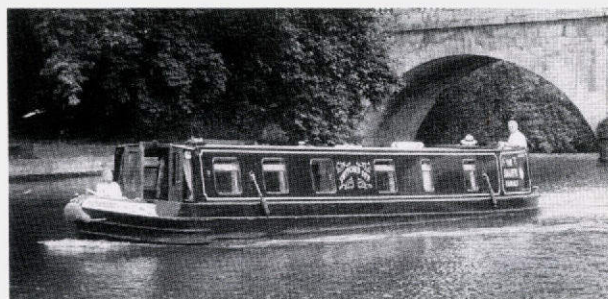
World Waterspeed Record, 1989
 Trip Boat, Castle Howard, Yorkshire
 Sail Auxiliaries, Camelot Craft and S.A. Knights, Norfolk
 Dayboat Fleet, Redon, France
 Norfolk Wherry Yacht Charter
 Lake Tyers Day Boats, Australia
 Seaway, yacht hydraulic drives

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Email: info@lynchmotor.com

David Graham, Thames Edwardian launch
 Trip Boats, Scanship, Holland
 First Passenger Solar Boat, Neuchatel, Switzerland
 Columbia University, First in Class, Solar Splash, 1995
 Oco-Sachs/Lynch Electric Outboard
 First Solar Crossing of English Channel, 1997
 Reading Marine, Diesel-electric hybrid, 1999
 Rose, Stratford upon Avon, 60 passenger launch, 1999

Reading Marine, hybrid narrow boat, 1999



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EBA CALENDAR

November

17th **EBA Interest** Battery Vehicle Society visit to Science Museum at Wroughton, near Swindon (£19-50 non-members including lunch) Details: William Macphree 0118 941 4873

January

3rd – 13th **EBA Interest** London International Boat Show

April

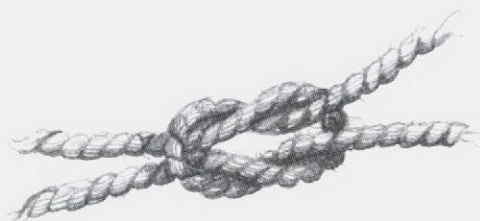
tbc **EBA Event** Fitting Out Supper – Maidenhead Rowing Club

May

tbc **EBA Event** Electric Boat Event, Huntingdon

16th – 19th **EBA Interest** Boats on Show, Beale Park

For further details of the above, or notice of other events, please contact the Secretary



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Electric Boat Association

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Cover Picture: Summer memories – the fleet moored alongside Bourne End Sailing Club for the BGM.

Photo: Tony Ellis

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Part 1*

On the current.....

Despite earlier concerns in EB News about the impact of the Foot & Mouth crisis, the ability of our active team to interact with the public – at venues as diverse as the Trad Boat Rally and Ware Carnival – is clearly seen in the encouraging growth in membership. Meeting the boating public in person is always very useful, although it is interesting to reflect that a healthy number of new contacts are now being made via the website.

We continue to gaze towards a future where our power comes from a multiplicity of sources, be it wind, wave, solar or hydrogen fuel cell. However, I am sure all our business members just wish that they didn't feel so much like pioneers in a technology that has been tried and tested for almost 120 years.

The imminent prospect of forests of electricity generating windmills in the North Sea and other coastal locations proves that some areas of alternative power sources are beginning to catch on.

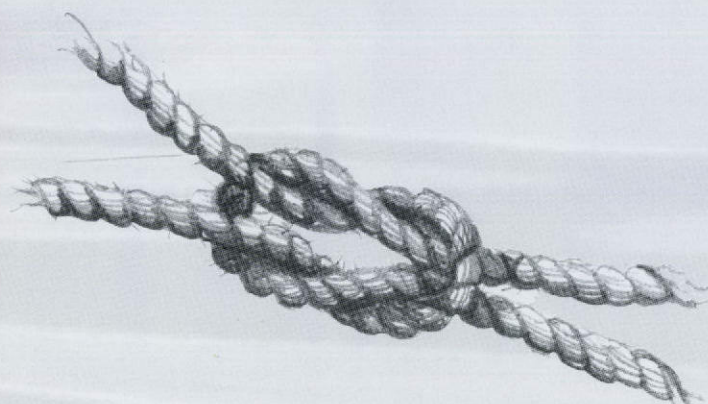
In this issue we have a report from Emrhys Barrell on the endurance run completed by *Pike* – a run which we hope will soon take its rightful place in the Guinness Book of Records. We will then be in a position to encourage others to rise to the challenge, and on the way, disprove the misconception that electric boats are always about to run out of motive power.

We also have a (largely) illustrated report of the Biennial General Meeting at which John Hustwick took over from Jim Keating as Chairman. Jim, with his sound political antennae, combined with a good sense of fun (and a sound preference for real ale) will be a very hard act to follow.

I am sure all the members will join with me in saying thank you – and also a very big welcome to John in his new role.

Tony Ellis

Editor



Copy Deadlines:

Material to be considered for inclusion in the next edition of Electric Boat News should be sent to the Editor (preferably as a full e-mail – no attachments) by the following date:

Winter Friday 7th December 2001 Spring Friday 1st March 2002

NEW MEMBERS

NEW MEMBERS OF THE ELECTRIC BOAT ASSOCIATION SINCE 1ST JANUARY 2001

PRIVATE MEMBERS:

Name	Vicinity	Boat(s) where appropriate
Bill Johnson	Wargrave	Millennium Dream and Gorwell
Simon Mitchell	Hemel Hempstead	
Richard Howard	Whitchurch Hill	Gadwall
Peter Harrold	Lincoln	Friends of the Mary Gordon
Doug Pattison	Bath	
Anthony Brady	Sunbury on Thames	Black Dog
Gosta Stahlberg	Sweden	
W H Klyn	The Netherlands	
Alan Fry & Muriel Lacey	Maldon	Adjo
Monica Barlow	Bristol	
Gill Jackson	Great Yarmouth	Scoop 1
Paul D Kyle	Teddington	Ample
David Catt -Camfield	Shepperton	Silent Wave
Anthony Woolhouse	Farnham	Seahopper dinghy, tender to n/boat Snowdrop
T.N. Warren	Wargrave	Snapdragon VI
Piers Erskine	Middx	Privateer
Clive Hicks	Wargrave	Lady Helen
Simon & Margaret Broadbent	London	Dot
Ian Macnab	Langport	Pixie
Jim & JudyClench	Chandlers Ford	
Mrs V Dudley	Ware	
Sylvain Angers	Montreal	
Stephen King	Shepperton	

Name	Vicinity	Boat(s) where appropriate
B.C. Tyrrell	Wallingford	Miss Alice
Brian Bidsto	Finchampstead	Angler
R.J. Foster	Towcester	
Rick Gifford	Marlow	Whispering Willow
Bryan Lewis	Wooburn Common	Badgers Drift
R Sutherland	London	Royal Geisha
J White	Richmond	
Bryan Humphris	Abingdon	Lilly Langtree
Hartley P Reed	Saltash	
Brian White	Mallorca	
H. Brouwer	St. Ives	Speer
Philip Cowlam	East Croydon	
Paul A Lynn	Butcombe	Solar Flair
Mr and Mrs P Boughton	Nordelph	Mrs Robinson
Ian Elwell-Smith	Gosport	
John Thornicroft & Susan Spivey	Dilham	Ceres & Nim
David Humphreys	High Wycombe	
George Jackson	Higham Ferrers	
Ken Winter	Weybridge	Winters Tale

BUSINESS MEMBERS:

Salter Bros	Oxford
British Waterways	Watford
Hannah Arbon, Engineered Solutions	Stamford
Stuart Weatherley	Classic Launches Henley-on-Thames

NOTICE BOARD

120TH ANNIVERSARY

The year 2002 will mark 120 years of electric boating and 20 years of the Electric Boat Association. Members are encouraged to suggest a suitable venue/event to mark this occasion – suggestions to Barbara.

EBA TRAILER

John Hustwick has repainted the box trailer and supplied removable logo name boards to be fitted each side. These can be removed for use as banners on show stands.



NEW EBA GREBE BROOCH

At last, a Grebe brooch for the ladies has been found and this excellent stocking filler can be purchased from Barbara Penniall (£5.50 inc p & p).

THAMES ELECTRIC PROVIDES AGENCY FOR DUFFY BOATS

Recent articles in the magazine have referred to new vessels available from the US builder, Duffield. Emrhys Barrell of Thames Electric Launch Company reminds us that the company provides an agency for the import of Duffield Boats which are then sold under the name of Voltaire.

SPONSORSHIP NEEDED TO MAINTAIN AND DEVELOP THE WORK OF THE EBA

One of our major items of expenditure is Electric Boat News. However, your Executive and National Council are reluctant to reduce the size or quality of the magazine, given that it forms a major plank in our promotional work.

In order to help fund the continued quality of the magazine and to further the promotion and development work of the Association, the committee would welcome any suggestions for potential sponsors. The sponsor would receive a range of benefits in return, including a reference on our web page, free advertising in EB News and on exhibition stands. Any suggestions should be forwarded to the Secretary, Barbara Penniall, preferably with a suitable contact name and contact details.

ARTICLES OF ASSOCIATION

Copies of the revised Articles of Association may be obtained upon request from the Secretary, either as hard copy or as an email attachment.

PUBLIC RELATIONS OFFICER

The Executive Committee has a vacancy for a Public Relations officer, following the departure of Paul Bennett. It is important that we have somebody to fill this key post, with the need to promote the activities of the EBA in the press and the broadcast media. Any volunteers who have either some knowledge or keen interest in this area are encouraged to contact the Chairman.

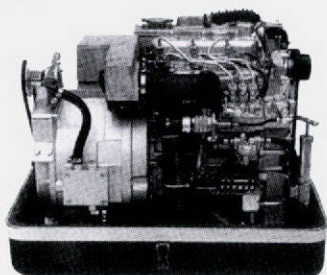
SWEAT SHIRTS AND POLO SHIRTS

Sweatshirts and polo shirts in light blue with a stitched EBA logo can now be purchased from Barbara at £20 and £16 respectively with an extra payment of £2.50 for the addition of your boat name (please state Small, Medium, Large or Extra Large).



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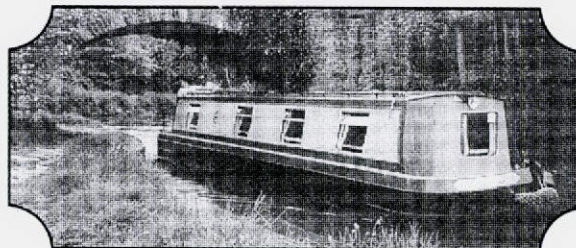
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ROMAN – British Waterways' Community Launch

Barbara Penniall meets Roman and her skipper, Heather Duncan

Anyone travelling the canals in the Midlands region this summer may well have spotted BW's new community boat *Roman*. This beautiful Sam Saunders launch, built at Cowes, Isle of Wight some time between 1908 and 1914, was found last year on a bank on the Norfolk Broads where she had lain for 15 years. Fortunately, although tired, she was in a reasonable condition with no rot, and has been very sensitively restored by Steve Mills of Longeaton.

More accustomed to restoring old flying boats and racing craft, Steve has managed to retain 90% of the original boat.

The craft has elegant lines – pine planking on oak frames with a teak deck and mahogany interior. She is 25ft long with a 6ft beam, so is ideal for use on the canal network.

A canopy has been added which in no way detracts from the boat's original lines and affords a degree of protection to the passengers.

Originally she would have had a Wolseley engine, but is now powered by a 3kW Lynch motor supplied by LEMCO with Chloride batteries and charger. Even without insulation on the engine box, the motor runs almost totally silently. As she glides through the water, it is difficult to imagine this elegant launch was ever driven by anything other than electric propulsion.

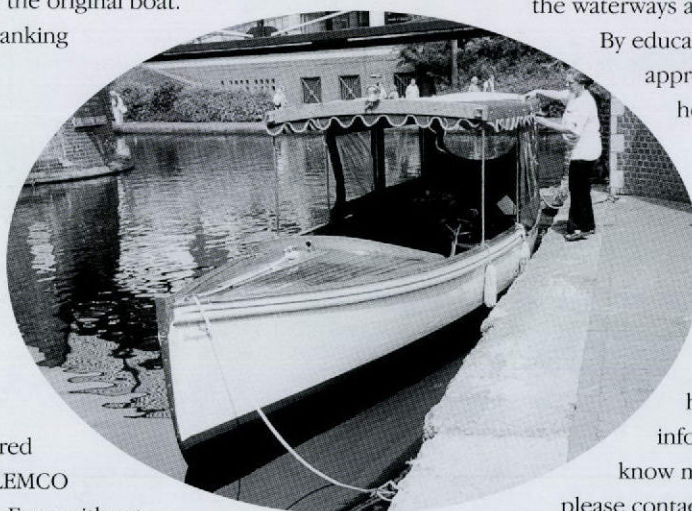
Roman is used by British Waterways as their community boat for the Dragonfly project and is skippered by EBA member and Midlands contact, Heather Duncan.

The Dragonfly project is a scheme (sponsored by Tarmac) to increase the awareness of young people of the inland waterways and Heather gives talks to canal societies on the work of the project. She also takes parties of school children out on *Roman*, teaching them water safety and encouraging them to look at the waterways and the wildlife around them.

By educating the next generation to appreciate their surroundings, it is hoped that a commitment to look after the waterways might also be initiated.

Heather has been trying to trace the history of *Roman* and if anyone can provide any information regarding the boat's past, she would be delighted to hear from them. If you have any information on *Roman* or want to know more about the Dragonfly project, please contact Heather at British Waterways on 01827 252070 or mobile 07710 175215.

Roman in the centre of Birmingham where she provided boat rides during the mid-summer Inland Waterways exhibition
Photo: Tony Ellis



Heather Duncan at the wheel of Roman

Photo: Barbara Penniall

THAMES TRADITIONAL BOAT RALLY

24th Thames Traditional Boat Rally

TONY ELLIS REPORTS FROM A FIELD JUST OUTSIDE HENLEY

It was with some relief after the cancellation of the Boats on Show event due to the 'foot and mouth' crisis, that the EBA was able to take part in the 24th Thames Traditional Boat Rally. This event was held at its usual venue of Fawley Meadow, Henley over the weekend 21 – 22 July.

Writing in the programme, Stuart Wilkinson, Chairman of this magnificent show, reminded visitors that "the recipe is largely as before: a good helping of glistening boats, a boat jumble, assorted irresistible purchasing opportunities: refreshments and old cars, music and period costume, the smell of a warm steam engine, the toot – toot of Alaska's whistle, a pint of proper beer"

The EBA Stand over the two day event was coordinated by Barbara Penniall, with the support of our Chairman, John Hustwick.



Left to right, clockwise

A gathering of slipper launches set the tone for the Rally

Our Chairman, John Hustwick busy converting yet another visitor to the EBA stand (Left: Barbara looks on)

~Lady Helen – Electric star of the show.

Melodie, the electric canoe from Peter Freebody

Posed photo of the show: Rupert Latham enjoying one of the many jokes in EB News

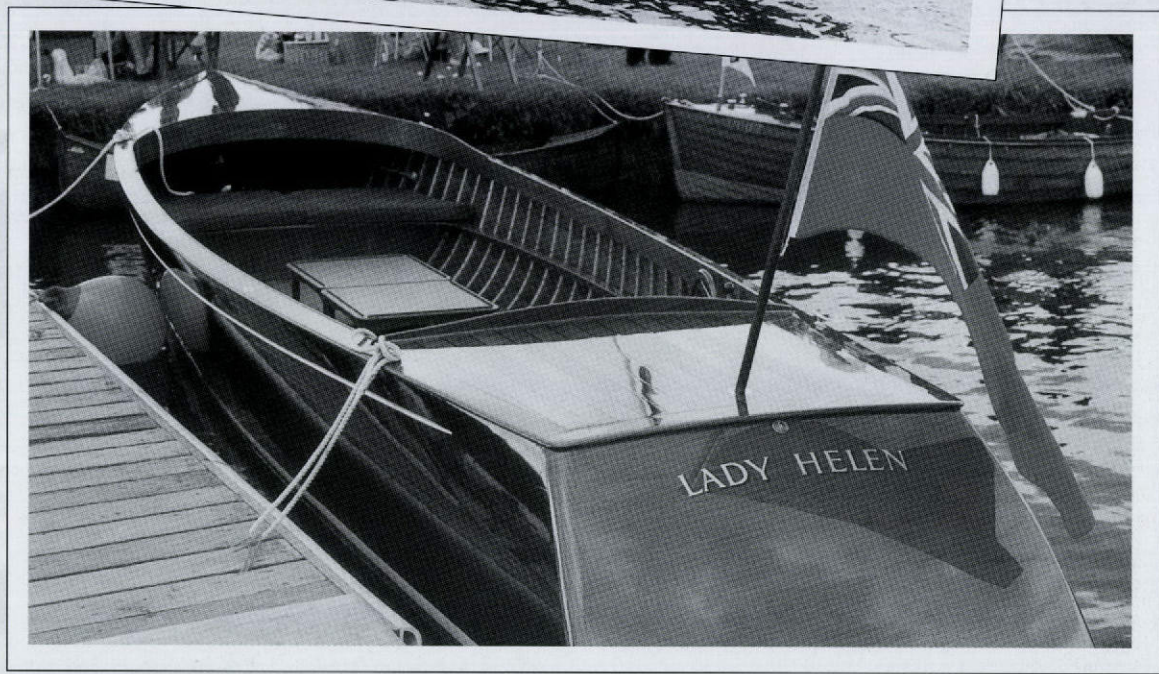
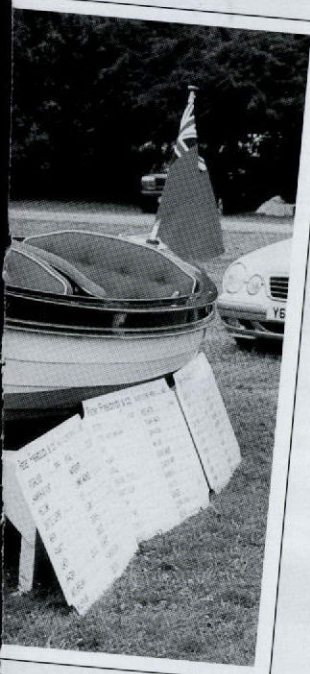
(all photos: Tony Ellis)

As well as the EBA stand, there were a number of other exhibitors offering particular electric interest, including Rupert Latham of Stelco Yachttechnic (UK) who had on display a range of electric motors and control equipment. On the afternoon of my visit, Rupert was very busy offering electric solutions to a range of interested customers.

Peter Freebody and Co had on display next to their tent the electrically-powered 20ft canoe *Melodie*, designed and built by the company in 1998 and borrowed back from her owner for display. The canoe will seat 6 comfortably.

Pride of place on the electric front went to the sleek 25ft launch *Lady Helen* from Henwood & Dean. Of carvel construction, built of mahogany on steam-bent oak, their stated aim with this design was to bring electric launches into the 21st century, without losing any of the traditional qualities (for further information see Trade News).

Of passing interest as she travelled up and down the length of the site was the news that the steam vessel *Thames Esperanza* (built in 1898 by J Bond of Maidenhead) was formerly powered by electricity.



NEWS FROM HOME & AWAY

REPORT FROM ELECTRISCH VAREN (the Dutch Electric boating organisation)



The February 2001 edition of *Electrisch Varen* referred to the (then) forthcoming HISWA boat show in Amsterdam due to be held over 10 – 18 March. The event was forecast to include a large electric section, organised by the Dutch Electric Boats trade group.

[a report of this event would be welcome – did anyone visit? Editor]

Paul Bennett reports :

Former EBA Committee Member Paul Bennett is buying a Gem 23 shell from Peter Sylvester and fitting it out as an electric weekend cruiser. It will have 2kW propulsion motor and approximately 20kWh of batteries onboard. Opportunities for some solar power recharging as well as shore power are being explored.

To be called *Amleth's Gem*, this small boat is 7m long by 6ft 10ins – a beam suitable for the narrow canals. Paul has set a target for the boat to be on the water for Boats on Show 2002 and is confident of meeting that deadline. He has also signed up for a 2 day course with Zetek Power to learn a bit more in-depth about their fuel cells. He is aiming to become a ZASI (Zetek Approved Systems Integrator) adding his own control electronics and peripheral system components to their fuel cells.

Once *Amleth's Gem* is complete, Paul, and fellow EBA member Ian MacNab have identified a nice challenge cruise from Langport (on the River Parret in Somerset) to Ripon in Yorkshire (if the Ribble link is completed by spring 2002 the target for most northerly point will move to Tewitfield on the Lancaster Canal). Paul is considering joining Ian in achieving this record with an electrically propelled boat.

Further information on his new boat, or the record journey from Paul at: peb@amleth.demon.co.uk

NEWS FROM DOWN UNDER

Electric developments on Sydney Harbour

Charles Fitzhardinge operates a small boat yard on Sydney Harbour which is beginning to dabble with electric boats. The yard is currently converting a 19ft half cabin launch from "side valve Morris minor" to Lynch Electric Motor power.

This conversion is being used as a "trial horse" prior to building a range of 20-25ft picnic launches for hire on Sydney Harbour and its tributaries.

Further information from Charles Fitzhardinge, Woolwich Marina
Phone 61 2 9879 4222 (ah 9879 7054), Mobile 0421 339 050
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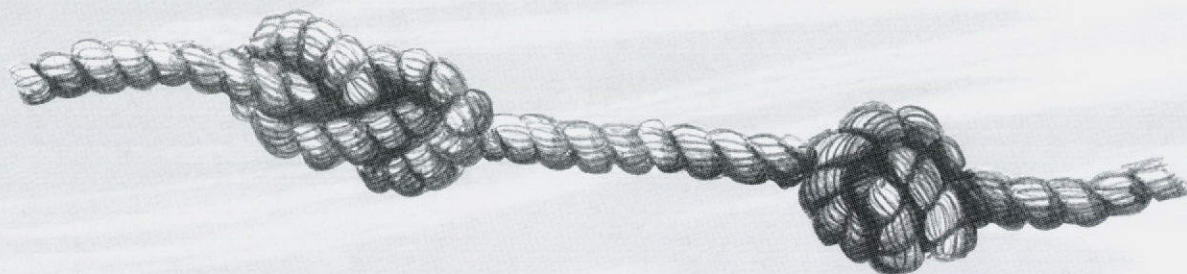
Solact Smart Race

As reported in the Spring edition of EB News, the annual SOLACT Smart Race was held in Canberra, Australia on the 28th April. Over 40 craft took part with a range of (unspecified) prize categories, ranging from Lead Acid and Solar to Advanced technology, General, Commercial, Hybrid and Emissions.

Special prizes were offered for a range of performances, including the best performing solar boat *Green Choice*, and the fastest lap over all classes *Back to Basics Instinct* at 22 knots. The competitor most likely to make a difference in the field of renewable energy was announced as Trevor Peterson of Back to Basics Electrical. With the assistance of outboard manufacturers Mercury, Trevor and friend Frank Wheeler fitted *Back to Basics Instinct* with a 50 hp outboard engine adapted to run on hydrogen gas.

Solar demonstration Adelaide

A demonstration solar boat race on the River Torrens is planned as part of the Solar World Congress in Adelaide. The congress will run from 25 November to December 2 and activities will include a solar boat race, World Solar Car Challenge and Solar Bike Challenge. Further information from Robert Simpson at: e-mail boatrace@sciencefestival.com.au.





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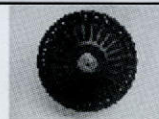
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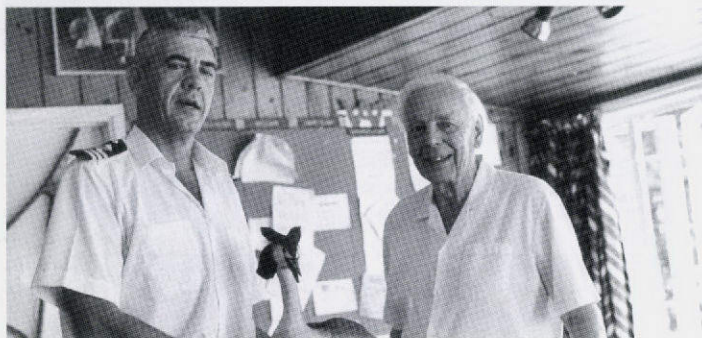
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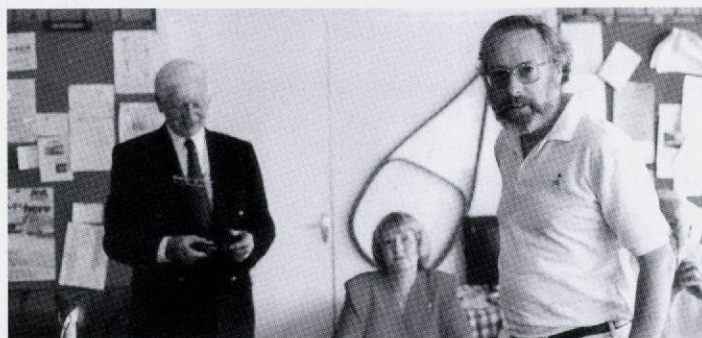




Cedric Lynch receiving the St Davids Trophy from Edward Hawthorne



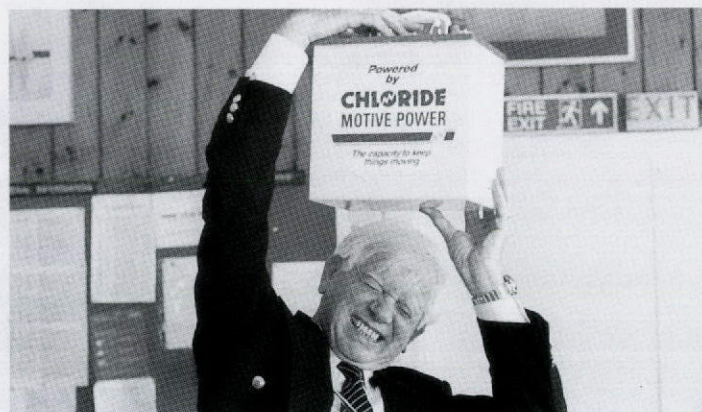
Phil Green receiving the Emsworth trophy from Edward Hawthorne



Jim Keating receives a gift from the Business members of the Association, presented by Emrhys Barrell



Jim Keating (right) outgoing Chairman shakes hands with John Hustwick, incoming Chairman



'EBA is good for you' – Jim lifts a Chloride battery above his head for good measure

SUNSHINE BGM

Biennial General Meeting at Bourne End Sailing Club

While fifteen electrically powered craft nudged gently at their moorings along the waterfront at Bourne End, their owners joined other members in the clubhouse for the Biennial General Meeting. The event was held on Saturday 28 July which proved to be a day of brilliant sunshine.

Jim Keating opened the proceedings and gave the Treasurer the opportunity to explain the current financial situation.

The amendments to the Articles of Association were adopted en-bloc.

The changes to the National Council were also accepted as follows:

Aitken Clark	Honorary President
John Hustwick	Chairman
Bob Ellis	Technical Liaison officer
Nick Goldring (Amourelle products)	Business Non-Exec.
Malcolm Moss	Users' Non-Exec.



The fleet moored alongside the Bourne End Sailing Club



After the formal business, Edward Hawthorne presented the trophies, including the St Davids Trophy for 'a significant advance in the field of electric boating' which went to Cedric Lynch, while the Emsworth trophy for the longest electric boat voyage during 2000 was awarded to the Environment Agency and accepted on their behalf by Phil Green.

Emrhys Barrell presented a gift to the outgoing Chairman, Jim Keating on behalf of the Business members of the Association, together with a Chloride battery which Jim promptly raised above his head (no! – 2 years as EBA Chair doesn't improve your muscles – the battery was merely an empty plastic case).

In conclusion, John Hustwick offered a vote of thanks to Jim for his guidance and leadership during his term as Chairman, and expressed the hope that he would be able to match his very high standards.

After the business of the meeting, the bar opened and this was followed shortly by an excellent hot lunch. To complete the ideal mid-summer day, all present were invited aboard the fleet for an afternoon cruise up to Marlow Weir, arriving back to the club in time for tea.



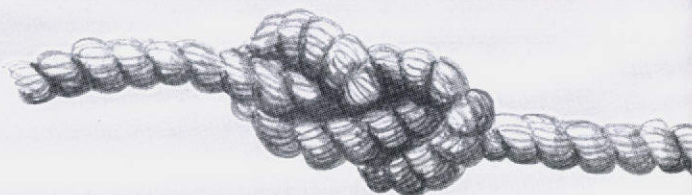
Brian Pickess' Stima



(photos by Tony Ellis)



Paul and Pat (hiding under umbrella) Wagstaffe, and (centre) Linda Barrell setting off on the afternoon cruise aboard Piec



Estel under way (photo Creative marine)

ESTEL FROM CREATIVE MARINE

In the last edition of EB News, reference was made to Creative Marine's largest boat to date – the *Frolic 36*, and the front cover showed the boat in construction. The editor met Chris Taylor, the owner of this magnificent new vessel at the BGM and was pleased to hear of his delight at seeing his new prize so prominently displayed.

Estel was commissioned on the 1st September and is now moored on the Thames, at the end of Chris Taylor's garden at Bourne End waterside.

Further information: e-mail creative.marine@talk21.com.
Website: www.creative-marine.co.uk

LADY HELEN FROM HENWOOD AND DEAN

Hambleden based company, Henwood and Dean Boatbuilders, have recently launched a completely unique and elegant boat which brings together the very best of traditional and modern methods of design and craftsmanship. *Lady Helen*, as this beautiful craft is called, was commissioned by a Henley businessman and is the brainchild of naval architect Andrew Wolstenholme and Colin Henwood whose boatyard is renowned for producing the highest quality work in traditional boat restoration and maintenance.

Lady Helen, however, is completely new and, although she is traditionally built and her design is strongly influenced by the beauty and elegance for which Thames craft are well known, many of her features bring the idea of style and design into the 21st century. This 25ft boat is designed to be enjoyed on a summer's day or evening on the river – relaxing with friends and family in the capacious cockpit with a delicious picnic or simply a glass of champagne. She is powered by a near silent, but surprisingly powerful, 2.5kw Nelco electric motor which will allow up to 8 hours of effortless cruising. *Lady Helen* has already received

a great deal of interest and acclaim not only from the boating industry but also the general public who were able to view a photographic record of her early stages of construction which formed part of a recent exhibition on craftsmanship at Henley's River and Rowing Museum. *Lady Helen* made her debut at Henley Regatta and is bound to be much admired for her style, elegance and superb quality of craftsmanship. It is encouraging to see that the rich history of wooden boatbuilding on the Thames is thriving and moving forwards to meet the needs and aesthetic desires of the modern boat owner.

For further information contact:- Lucie Henwood, Henwood & Dean Boatbuilders, Greenlands Farm, Dairy Lane, Hambleden, Nr Henley on Thames, Oxfordshire RG9 3AS

Tel: +44 (0)1491 571692

Email: info@henwoodanddean.co.uk

Website: henwoodanddean.co.uk

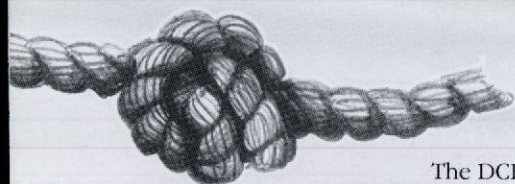


The water Bug (photo Tony Ellis)

CALIFORNIAN SUPPORT FOR WATER TAXI SERVICE

The California Air Resources Board (CARB) is funding the implementation and demonstrations of an electric water taxi powered by DCH Enable fuel cells.

DCH Technology, Inc. (Amex: DCH) is a US based manufacturer of hydrogen fuel cells and sensors and a global provider of hydrogen safety services. Duffy Electric Boat Co. hosted the a number of public demonstrations planned for the water taxi at its harbour facilities in Newport Beach, California.



The DCH product used to power the water taxi is an Enable hydrogen PEM fuel cell capable of generating 1 kilowatt continuously with peak power approaching 2 kilowatts. A second DCH product – a 12-watt/12-volt Enable(TM) portable PEM fuel cell – powers on-board instrumentation, navigation, and communications equipment. The vessel is also equipped with DCH hydrogen-specific sensors for safety.

“Widespread use of fuel cells in watercraft would certainly help California’s efforts to reduce air pollution,” said Alan Lloyd, chairman of CARB. “The water taxi is another example of a practical, everyday use for this space-age non-polluting technology.”

QUANTUM Technologies, Inc., a wholly-owned subsidiary of IMPCO Technologies, Inc., (Nasdaq: IMCO), a source of advanced alternative fuel systems technology, contributed to the design and implementation of the 1-kilowatt fuel cell ultra-lightweight, all-composite hydrogen tanks and fuel delivery system.

DCH chairman David Haberman said the company is positioned to be a leader in the maritime market. “DCH was the first to promote maritime hydrogen to the DOE, the first to integrate a multi-disciplinary business team to launch a US maritime initiative, and the first to step up to the challenges of codes and standards that solve the risk and liability issues associated with marine applications of fuel cells,” said Haberman.

In addition to Newport Beach demonstration, the water taxi was also demonstrated over 12-13 September in San Diego, 25-27 September in San Francisco, 3-4 October in Sacramento, and 10-11 October in Tahoe City, California.

FRENCH BOATS CRUISE INTO NORFOLK BROADS

Boaters on Ranworth Broad were intrigued to find a new range of electric boats being displayed at the Broads Authority’s Information Centre in early June. Maurice Willard from B.A. invited John and Sandy Williams, David Cartwright and representatives from the Electric Boat Association to join him at the Ranworth Centre in order to display this new range of electric craft now available in the UK.

The Ruban Bleu (Blue Ribbon) range recently imported from Nantes by EBA business member David Cartwright in co-operation with John Williams Boats, introduces a very economical range enabling electric boat enthusiasts to become boaters without breaking the bank.

The smallest craft, called Blue Ribbon, able to carry four comfortably and cruise for 8 hours without recharging, was neat, easy to manoeuvre and would definitely appeal as a ‘fun’ boat. Scoop is a larger electric boat (4.6m) with the same cruising capacity. The seating layout is extremely well designed to enable a group of 7 people to be casually seated around the boat without



The 5.5m Zelec from Ruban Bleu (photo Barbara Penniall)

leaving the helmsman out of the party. This craft will be seen as a very popular boat on all inland waters this summer as it was easy to handle and could accommodate several guests for an evening cruise, or a weekend picnic.

Both these boats were in the water and in constant use taking interested visitors for trips on the Broad, whilst on the land John Williams displayed the larger 5.5m Zelec.

All boats are fitted with a canopy which folds down, pram style, and can be put in place in seconds. Not designed to be completely weather-proof, they would offer shade from sun, when required, or more often protection from the odd shower. Popular with hire fleets in France, the hulls are grp, designed to be easily cleaned with self-draining cockpits.

Prices, complete with cushions, canopies and trailers, ranged from £5,000 to £12,000 and details can be obtained from John Williams Boats, The Staithe, Stalham, Norfolk NR12 9DA tel: 01692 580 953 or visit David Cartwright’s website at www.dcboat.com.

THE BUG

Shown at the IWA National Waterways Festival in August was the new *Bug* from Blizzard Craft of Stroud in Gloucestershire. Catering for the economy, ‘starter’ end of the market, the *Bug* is reminiscent in shape of the plywood Army pontoon of earlier decades – on which many families built the foundations of their inland boating career. The complete hull kit is available at £250 (including delivery), while the completed boat, ready for painting, costs £750 plus delivery. The canopy shown in the photograph costs a further £190 if ordered with the kit.

Blizzard Craft recommend the use of oars or a small electric outboard. Further information: Blizzard Craft, Five Leaves, The Avenue, Bussage, Stroud, Gloucestershire, GL6 8AT

Tel / Fax: 01453 884400

ELECTRIC BOAT RECORD



Pike undergoing the record attempt

Guinness is good for you

EMRHYS BARRELL REPORTS ON THE LATEST ENDURANCE RECORD 137 MILES IN 30 HOURS – SPONSORED BY THAMES ELECTRIC LAUNCH CO

It all started four years ago when The Thames Electric Launch Company decided to set a World Electric Boat Endurance Record. Our aim was to highlight the fact that electric boats were now a well-proven technology, able to cover long distances between recharges. But we also wanted to set a challenge for others to try and beat. We duly achieved our target, covering 116 miles in 24 hours, with the attempt observed and ratified by the EBA. We proudly sent it to the Guinness Book of Records, only to be told that we should have informed them before we started if we wanted it to be considered for a world record.

Somewhat disappointed, we did not have the heart to do it all again, but resolved to have another try in the future. Our opportunity

came this year, when Richard and Anne Leeson offered us their classic Thames launch *Pike* for the bid.

PIKE

Built in 1899 by Andrews of Maidenhead, *Pike* was one of a class of launches all named after fish. The boats were all originally electric-powered, as were many craft on the river at this time. Their elegant sweeping clipper bows made them instantly recognisable on the water, and they were much sought after by customers. The most famous client was Edward VII, who regularly chartered *Angler* for his excursions on the Thames. *Pike* was originally electric powered, as petrol or diesel engines were in their infancy. It was converted to petrol power in the 1920s. The derelict hull was found in a barn and bought by the Leesons in 1996 at the Henley Boat Auction. She was completely restored by Michael Dennett of Laleham, with an elegant saloon added at this time with two 6ft berths in it, plus a small galley and toilet compartment, making the boat suitable for cruising. The Lynch motor is mounted aft, over a short prop-shaft, freeing off the forward cockpit, where the original petrol engine had been, and also allowing a small aft cockpit to be fitted.

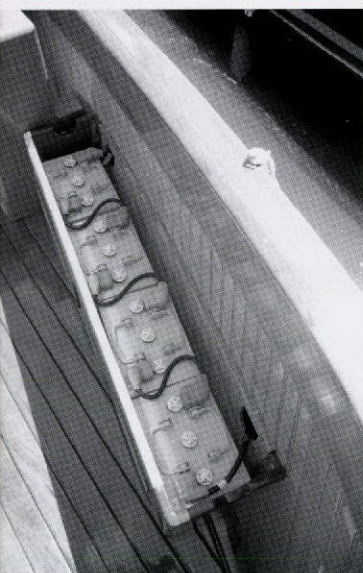
TELCO supplied and fitted a brand-new electric package, using one of Cedric Lynch's latest motors, powered by a bank of the newest high-performance traction batteries from Chloride Motive Power. These gave the boat an impressive top speed of 7mph, well above the Thames limit of 5mph.

To give the attempt an extra challenge we increased the time to 30 hours. Careful calculations and trials were carried out at beforehand, and we decided to set a target speed of 4.5mph. This would give us a distance of 135 miles, with speed in reserve for adverse conditions, and to allow for crew changes.

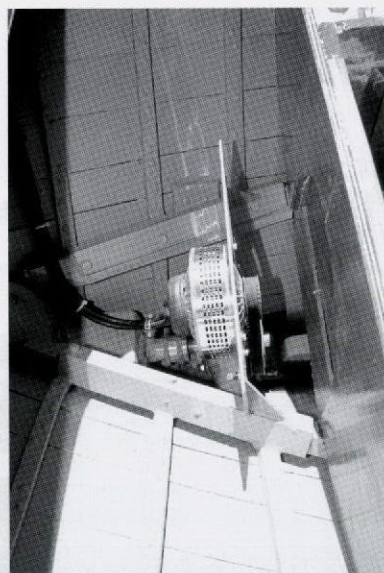
This time we also determined to get maximum press coverage of the bid, to give exposure to electric boating, and also to the River Thames, currently in need of a boost to its flagging popularity. Knowing how the media love to get just the right shot, we left ourselves time in hand for setting up pictures and interviews, and for taking reporters on some of the legs. But even so, it was going to be tight, with no room for breakdowns or delays.

We also decided to again travel continuously through the night, so there could be no suggestion of clandestine charging of the batteries. **To be continued in the next edition.**

For more information on the bid or the boat, contact TELCO on 01491 873126.



Pike's range of CMP Batteries
Photos by Emrhys Barrell



The Lynch Motor

WARE FESTIVAL/ CAVERSHAM PICNIC

Summer events

OUR CHAIRMAN, JOHN HUSTWICK REPORTS ON SOME OF THE MANY SUMMER HAPPENINGS ON THE WATERFRONT

If any members are aware of events where our presence would be beneficial, then please let the Committee know well in advance – whether it be just a magazine rack or the whole EBA stand.



Anthony Oliver and his Salters skiff

WARE CARNIVAL AND BOAT FESTIVAL

Through EBA member Anthony Oliver, we were invited to this event which took place on 7th July in Ware. The event was a combination of land and water based activities, the latter being organised by Craig Haslam of the Lee and Stort Branch of the IWA.

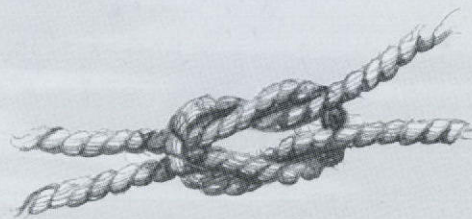
The high point of the day was a flotilla of boats passing under the town bridge as the carnival procession paraded over the top.



John Hustwick on the wharf at Ware

The EBA was represented by Anthony in his 16ft Salters skiff *Hale Bopp* powered by a Minn Kota outboard and Cedric Lynch with his solar powered canoe. Both looked diminutive in the midst of so many narrow boats. After the formal proceedings, Cedric and Anthony made a number of trips along the river, weaving in and out of the lines of narrow boats and demonstrating how quiet and pollution free electric boats were. Even though the weather was not very good, Cedric managed well on solar alone.

A space on the Town Quay allowed us to have some magazines and leaflets on display during the day and we recruited a new member. Although this was very much a narrow boat event, it proved worthwhile.



(photos: John Hustwick)

continued on page 16



Cedric, canoe and narrowboats at Ware

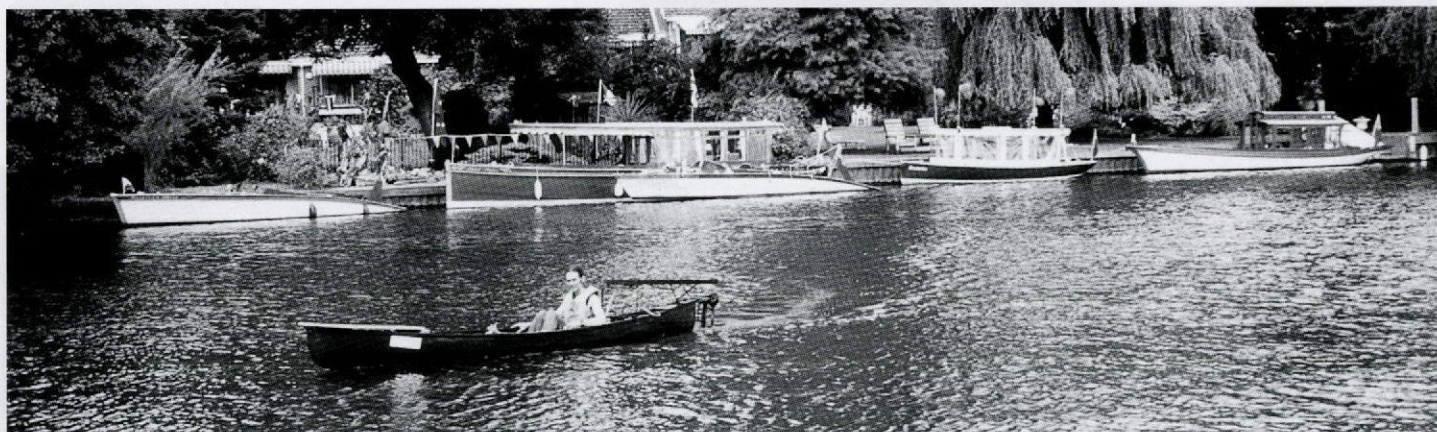
THAMES RALLY

Once again Robin and Eve Bentham very kindly hosted a Thames picnic rally and at the same time managed to provide excellent weather. Twenty seven members and friends wined and dined in the lovely riverside garden before taking to the boats for a cruise to Caversham and back.

This year saw *Bluebottle* back to normal, sporting a fine display of balloons. Joining *Bluebottle* were the Leeson family with *Pike*, Terence and Ann Casey with *Spiel Water*, Bill and Margaret Johnson with *Millennium Dream*, Chris and Celia Tassell with *Sun Penny* and Cedric Lynch with his solar powered canoe. (when is it going to get a name Cedric?).

After judging for the Wargrave Trophy, won by *Sun Penny* everyone boarded the boats for a pleasant cruise to Caversham, around the island and back. This gave a good opportunity for the public on the riverbank to see electric boats in action. Having seen some of the expressions, I'm sure some people were puzzled as to how a boat could move without any noise!

On returning, afternoon tea was served on the lawn and the Wargrave Trophy was presented to Chris and Celia Tassell. Robin and Eve were also presented with a bottle of port in recognition of another excellent day. How they got the weather to be so good again is still a tightly kept secret!



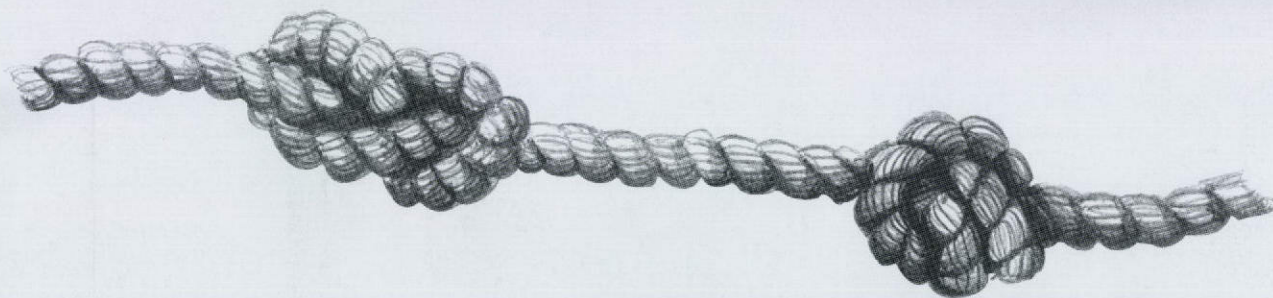
The fleet gathered at the Robin and Eve Bentham's waterfront home

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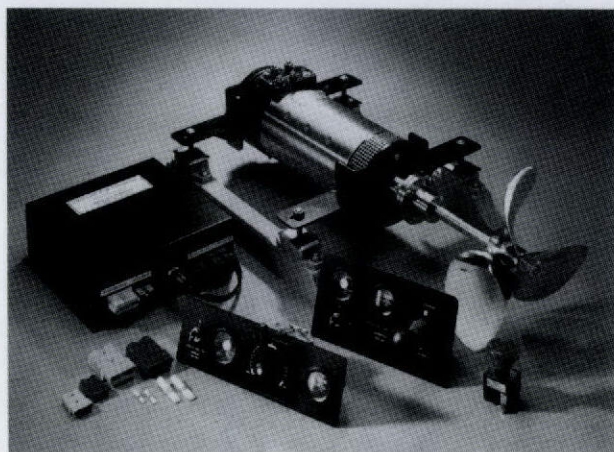
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SOLAR FLAIR an experiment in Solar

by Paul Flynn



Solar Flair on the River Thames at Kelmscott

Solar Flair – an experiment in Solar Boating

Paul Flynn guides us through the home-build of his own solar launch

FIRST STEPS

I start with a confession. Although fascinated for several years by the potential of Photovoltaics (PV) for electric boating, I joined the EBA only a few months ago after first making sure that my new solar catamaran both floats and moves! Of course I had heard of the Association, and my work with an international PV journal gives me some awareness of solar-powered boats and cars in Australia and other sunshine countries of the world. But all this is rather

theoretical. I wanted a design-and-build project of my own, knowing that I would enjoy the challenge of starting from scratch and learning from my own mistakes.

Solar Flair has taken up a large portion of my spare time, our garage, and my wife's understanding over these past three years. Recently we had the excitement of some rather successful "sea

Boating

trials" on the river Thames at Lechlade, and I hope that our story will interest others.

The starting point was basic and I approached it very much from the PV direction. What could be achieved with modern high-performance PV modules, standard electric outboard motors, and some hobby skills in electricity and woodwork? Could an inexpensive self-built boat run at realistic speeds on sunshine alone and at the same time offer reasonable comfort to two passengers? I always try to keep in mind the well-known designer's acronym KISS (Keep It Simple, Stupid), yet I also wanted an experimental boat with enough flexibility to test various combinations of solar power, battery power, and motor configuration. I began with the PV, motors, batteries, and a control system, relegating the mere problem of building a boat conveniently to the background! I could afford (or perhaps I should say justify) the purchase of about 300 peak watts of PV, and a little reading suggested that this should give a reasonable chance of progress on sunshine alone.

A brilliantly sunny November day in 1998 saw a small electric outboard (Motorguide T2200) mounted above a large rainwater barrel in our garden and supplied with electricity from four 75Wp monocrystalline silicon PV modules (BP Solar BP275). I soon learned that, over quite a large range of solar current, the motor presented a resistance of about 0.6 ohm to the PV. An early decision was to stick with a 12V system, partly to honour the KISS principle but also to avoid any risk of electric shock (a single PV module, normally used for 12V battery charging, can produce over 20V on open-circuit). This meant connecting the four PV modules in parallel, giving a total current in strong sunshine of around 17A.

The effective coupling of solar photons, arriving after their 93 million mile journey through space, via PV to standard electric outboard motors is not entirely straightforward. The motor characteristics are not best suited to what is effectively a current source with a magnitude determined by the strength of the sun. Since it is hardly realistic to expect hazy sunshine, let alone cloud, to propel a solar boat directly, the best strategy is to ensure that the PV is used as efficiently as possible in strong sunshine. This means that the PV system must operate close to its maximum power point - in this case at about 17V (the voltage-at-maximum-power of the BP Solar modules) and 17A, implying an optimum load resistance of about 1 ohm - almost double that of my T2200 motor.

I therefore bought a second motor and experimented with four PV modules in parallel driving twin motors in series. Not only did this configuration look rather promising - on one spectacularly sunny occasion, when the clouds had cleared after rain and the sky was dazzling, I tilted the modules towards the sun and actually managed to deliver 300 photovoltaic watts to the motors - but it had the added advantage of redundancy. If one of the motors should fail, the other could be used on its own. I admit that this approach, which operates each motor on 8.5V or less, leaves open the question of whether the motors themselves are reasonably efficient at such reduced voltages.

At the heart of the control system is a Steca "Solarix Theta" PV controller with a sophisticated state-of-charge algorithm which prevents battery overcharging. When the sun is strong and clear it is possible to switch the PV current directly to the motors; otherwise it is routed via the controller to onboard storage batteries. *Solar Flair's* console has meters for monitoring motor current and PV current and voltage, with switches for speed control by series resistor or by turning off any or all of the PV modules.

THE BOAT

Initially I intended arranging the four PV modules lengthwise along a Cam-style punt. But a little more reading (especially of an article by Morton Ray on hulls for electric boats) convinced me of the paramount importance of hull shape. Not for us the arrogance of internal combustion engines pushing ill-designed hulls! I decided on a catamaran, but wondered how on earth I could make twin hulls of sufficient quality.

In one of those happy coincidences which lighten life from time to time I learned that Brian Mawer, a retired schoolmaster living near Bath, had a workshop in which he was moulding fibreglass hulls for catamarans. On visiting him I was delighted to find that his standard 6.2m hull design was just what I needed for mounting the PV, providing a reasonable cabin length, and fitting into my garage (with the thickness of a thumb to spare). Furthermore, it was moulded on a 1907 Thames single skiff. This just had to be the answer! Brian subsequently provided me two of his hulls which have stood the test of supporting approximately twice their original designload.

continued on page 20



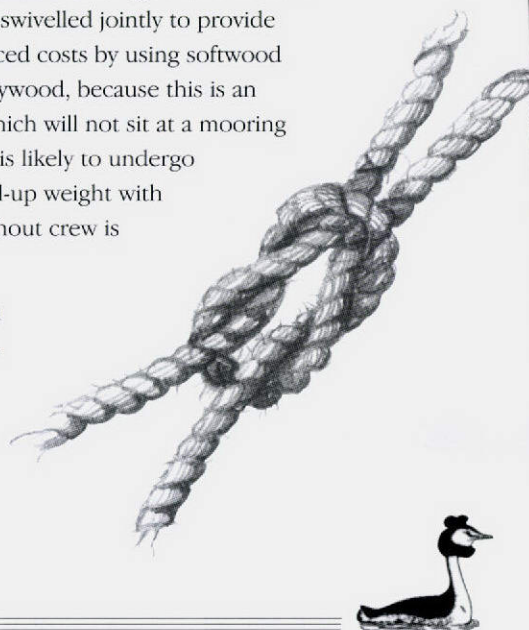
In addition to technical aspects of design, I am interested in aesthetics. Some solar boats seem to me inelegant, especially when they carry their PV on top of what appear to be hastily designed canopies made of scaffolding poles. There may also be a problem of stability. Of course there are undoubtedly some beautiful canopies such as that of the RA66 boat shown on the cover of the Spring 2001 issue of EB News; but one must be careful. Ungainly design may give a Heath Robinson impression which does solar electric boating no good at all.

So my decision to go for a catamaran with PV modules at deck level was largely a question of aesthetics. The approach certainly forfeits the advantage of shelter from rain and sun, and uses a lot of deck area. In summary, we have a 2m long cabin, kept low to avoid shading of the

modules; two deckchair-style seats; canvas covers to save weight and allow the console to be tilted up for easy crew access; a battery

box large enough for up to four standard 85Ah leisure batteries; and a motor well housing the two electric outboards which are swivelled jointly to provide steering. I have reduced costs by using softwood and exterior-grade plywood, because this is an experimental craft which will not sit at a mooring for long periods and is likely to undergo modifications. The all-up weight with two batteries but without crew is about 250 kg.

**To be continued in
the Winter edition.**



Information sheets from the Electric Boat Association

1. **PRODUCT GUIDE & EBA TRADE MEMBERS**
(free upon request)
2. **SOLAR POWER** by Solar Energy Alliance
3. **ELECTRIFYING YOUR BOAT** by Hawthorne & Wagstaffe
4. **HULL DESIGN FOR ELECTRIC BOATS**
by Andrew N Wolstenholme
5. **LEAD ACID BATTERIES – OPERATION & MAINTENANCE**
by CMP Batteries
6. **HIGH SPEED ELECTRIC BOATS** by Lorne Campbell
7. **HYBRID POWER** by John Hustwick

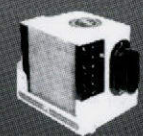
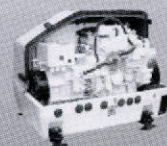
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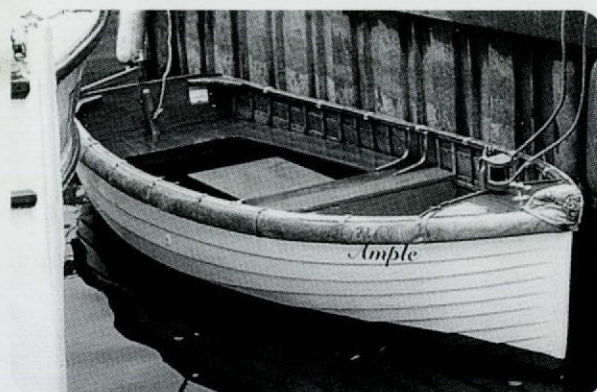
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