Micro Hydros Mega Fun

By Neil McGrath

Hopf Mosquito
by Joerg Mrkwitschka

Anyone who has owned the same mobile phone for two or more years will no doubt think that their marvel of modern technology now resembles a house brick compared with the latest micro-miniature models.

Well, the same technology that shrank the mobile phone is now finding its way into our R/C systems. It is now possible to fit everything required to run a fast electric boat into a much smaller hull. These small boats are ideal for the smaller lake or boating pond and the performance of these machines is even starting to worry competitors in the larger sized classes of fast electric boat racing.

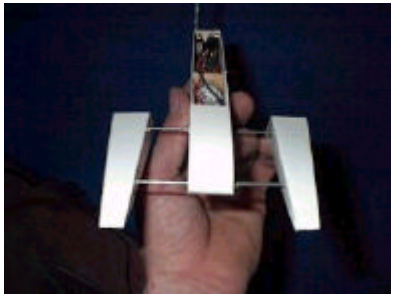
So what does it take to build a micro hydro? First of all, forget about heavy sub C sized cells and 540 size motors. These boats need to be built light – Very light. The motors used are classed as 400/480 sized or smaller. The cells come in a variety of sizes and are usually formed into 7 cell packs. A micro receiver can be used where space is tight, but some of these weigh as much as a standard 2 channel unit, so are not always necessary. A micro sized rudder servo will save vital weight and space in the hull. These have become cheaper as smaller R/C aircraft have become popular and a good example can be purchased for about £15. Suitable speed controls or switchers can be bought for around the £15 -£25 mark but be aware that these are usually designed for aircraft, so some extra work may be required to make them water resistant. Astec make a dedicated marine ESC, which has been specifically designed for this class of boat.

Graupner, Robbe and Danvo have realised the potential market for smaller models and have started producing complete boat kits in a variety of hull styles.

Graupner Mini Sprint
Built by Kasper Arvad

If you prefer to buy a hull and fit your own equipment, Hopf in Germany and GTM here in the UK produce some excellent hulls. For those who prefer to build from scratch there are some good designs available from Traplet Publications. Alternatively, you may decide to scale down the plan from a larger boat or even design your own.

Hardware for micro boats can be quite difficult to find and some people resort to building their own. Fortunately, Astec can now supply a wide range of hardware for this type of boat. I also recommended them as your first port of call if you are considering starting up in this branch of the hobby as they can supply just about everything you need. Please note that have no connection with Astec other than being a very satisfied customer.



How small can you go?
This Pico rigger by Peter Richards is just 9 inches long!

Micro hydro boats can be very cheap to build and could form the basis of a simple club racing class. Here is a picture of my Astec Suvette, which uses only budget priced components such as a simple Speed 400 motor, 600AE cells and a RC Line electronic switcher.

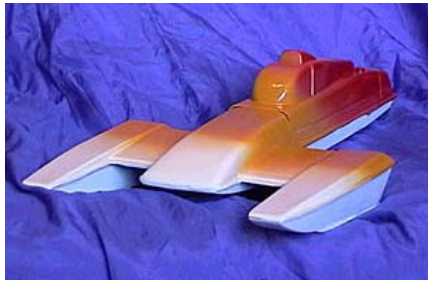
Astec Suvette

At the opposite extreme there is Trent Hare's Micro Sport Hydro which features a Schultz brushless motor, Kontronic controller and the latest Sanyo CP1300 cells.

Micro Sport Hydro by Trent Hare

The MPBA will be running a micro class competition at this years Fast Electric Section National Championship. The competition is open to any style of boat powered by a motor of 480 size or smaller and the boats will race clockwise around triangular course for 5 minutes. It will be interesting to see how the self righting, tight turning ECO boats fare against the faster but poorer handling surface drive boats.

Technology in this area is moving at a very fast rate. New cells are continually being developed, radio systems are smaller and small motors are becoming increasingly powerful and efficient. One area of particular interest is the development of Li-ion cells. These are now common in mobile phones and camcorders and it is feasible that they could power a boat fitted with a 400-size motor at racing speeds for more than half an hour!



GTM Rigger
built by Andrew Gilchrist of fastelectrics.com

For those with access to the World Wide Web, I thoroughly recommend that you visit http://www.microhydros.com/
This site has all the information you need to build a successful micro sized boat and also features a useful discussion forum.

Ian Phillips ECO 400 Mono

If you would like to find out more about micro-hydros write to me at ann-neil@supanet.com or ring 01689 601674. I would also like to hear from anyone else running small racing boats in the Orpington area.
I am now off to start building my latest model – A Speed 480 powered GTM Snark 2 unlimited hydro. See you at the lake!

All the photographs in this article are supplied courtesy of micro-hydros.com. Thank you to the owners of these boats for allowing use of their pictures.