BASINGSTOKE MODEL BOAT CLUB

Newsletter

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Car Parking.
The new leader of Basingstoke Council has gone on record with the local paper that he plans to scrap the parking charges at Eastrop Park. If this really does happen then it will be good news. In the meantime may I remind members that they must take a ticket from the machine to qualify for 2 hours free parking. Failure to do so could result in a £50.00 penalty notice.

Membership News
Please join me in welcoming seven new members to the club, **Graham Woodhams**, **Richard Pertious**, **John Briault**, **Ray Cape**, **Brian Hamilton**, **Ruth Burrage** and her son **Ben Rumary.** Also after a year's gap **Bob Gamble** has re-joined the club. We look forward to meeting and seeing you all at the lake when you are able to attend. Due to a number of reasons fourteen members from 2022 have not renewed for 2023. In addition **Peter King** and **Tim Coombes** both sadly died recently in May.

The current paid up membership stands at 100, of which 4 are junior members.

New members are always most welcome – if you have a friend that may be interested in model boating or joining the club then please let them know all about us, or tell them to have a look at our website to see for themselves - **www.basingstokembc.co.uk**

Viables Show Report

Over the weekend of 15th and 16th April the club had a good display of boats at the Viables Model Engineering show. Our stand consisted of two gazebos and a portable pond in which a number of motorised boats were able to be sailed. Phil Hall's water-skiing Barbie doll was a great draw with all ages of the public. Due to the location of the stand, adjacent to the miniature railway station at which members of the public were queuing for train rides, we had a constant stream of visitors to the stand which made for a busy time.

Thanks go to Phil Hall, Terry Welch, Keith Ebsworth, Joe Beckett, Joe Harwood, Alan Fuller who kindly gave up their time to erect and man the club's stand and provide a wide range of boats for display. It was also good to see a number of members attending the show in their own right.

After the event I received the following from one of the event organisers

Thank you all at the Basingstoke Model Boat Club for supporting the Basingstoke Model Engineering Society's Steam Gala this year. The event was a great success (if not the weather) and I hope we will see you all again next year.

Visit by the Model Hovercraft Association

On Sunday the 21st April, the club once again hosted a visit by members of the association. Unfortunately due to the unfavourable weather forecast only 4 members attended, the furthest coming from Nottingham. However they did bring an impressive array of models to sail/fly on the lake which drew an appreciative audience both from the club and from members of the public. Due to the high level of water in the lake craft were easily able to transition from dry land to water and vice versa.

One of our junior members Jacob also brought along his recently refurbished hovercraft and was given advice on how to improve the model's performance and overcome the "hump" barrier.

Hovercraft either do, or do not work at all due to the "hump"-phenomenon. Hump-speed is the speed at which a Hovercraft overtakes its own cushion pressure depression in the water immediately below the Hovercraft. Hump-speed has its analogy in the speed at which sailing yachts begin to plane. At this speed drag reaches its peak which the Hovercraft needs to overcome to reach its maximum speed.

Hump-speed occurs at low-speed depending on the weather and wave conditions. Numerous Hovercraft designs fail to overcome hump-speed even under moderate weather conditions despite engines running at full power. Only Hovercraft with a high power-to-weight ratio offer sufficient performance to easily overcome the hump barrier.

The following pictures give a good overview of the range and scale of the models brought along.


Hovertravel

Jacob with his model

The association are planning to have a second visit to Eastrop later in the year, at the time of writing a date has yet to be confirmed but possibly July or August. I will let members know via email when I have a confirmed date.

Vintage Model Yacht Group

We will be hosting another visit by this group with their range of free sailing and vane steered yachts on the 16th of July. This is normally a well-attended event with a wide range of craft so make a note in your diary.

A Short History of Radio Control - adapted from a variety of online sources

The idea of controlling unmanned vehicles (for the most part in an attempt to improve the accuracy of torpedoes for military purposes) predates the invention of

radio. The latter half of the 1800s saw development of many such devices connected to an operator by wires.

At an 1898 exhibition at Madison Square Garden, Nikola Tesla demonstrated a small boat that used a **coherer-based** radio control system. With a view towards selling the idea to the US government as a torpedo, Tesla's 1898 patent included a clockwork frequency changer so an enemy couldn't take control of the device.

A **coherer** consisted of a tube or capsule containing two electrodes spaced a small distance apart with loose iron filings in between. When a radio frequency signal is applied to the device, the metal particles cling together or "cohere", reducing the initial high resistance of the device, thereby allowing a larger direct current to flow through it. In a receiver, the current would either activate a bell, or a Morse paper tape recorder to make a record of the received signal. The metal filings in the coherer remained conductive after each signal (pulse) ended so that the coherer had to be "de-cohered" by tapping it with a clapper actuated by an electromagnet, each time a signal/pulse was received, which restored it to its high resistance state. Coherers remained in widespread use until about 1907, when they were replaced by more sensitive electrolytic and crystal detectors.

In 1903, the Spanish engineer Leonardo Torres y Quevedo introduced a radio based control system called the "*Telekino*" at the Paris Academy of Science. Unlike the previous mechanisms, which carried out actions of the 'on/off' type, Torres defined a system for controlling any mechanical or electrical device with different states of operation. The machine could send up to 19 different orders, and it was able to memorise the signals received to carry out operations on its own. In 1906, in the presence of an audience which included the King of Spain, Torres demonstrated the invention in the Port of Bilbao, guiding a boat from the shore.

In 1917, Archibald Low, head of the secret RFC experimental works at Feltham, was the first person to use radio control successfully on an aircraft, an "Aerial Target". It was "piloted" from the ground by future world aerial speed record holder Henry Segrave. Low's systems encoded the command transmissions as a countermeasure to prevent enemy interference. By 1918 the secret D.C.B. Section, of the Royal Navy's Signals School, used a variant of the Aerial Target's radio control system to control from 'mother' aircraft different types of naval vessels including a submarine.

The UK's WW1 development of the radio-controlled 1917 'Aerial Target' (AT) and 1918 'Distant Control Boat' (DCB) using Low's control systems eventually led to the 1930s "Queen Bee". This was a remotely controlled unmanned version of the de Havilland "Tiger Moth" aircraft for Navy fleet gunnery firing practice. The "Queen Bee" was superseded by the similarly named "Queen Wasp", a purpose-built target aircraft of higher performance.

The Soviet Red Army used remotely controlled "Teletanks" during the 1930s in the Winter War against Finland. A teletank was controlled by radio from a control tank at a distance of 500–1,500 m, the two creating a *telemechanical group*. There were also remotely controlled small boats and experimental remotely controlled planes in the Red Army.

Radio control was further developed during WW II, primarily by the Germans who used it in a number of missile projects. Their main effort was the development

of radio-controlled missiles and glide bombs for use against shipping, targets both difficult and dangerous to attack. However, by the end of the war, the *Luftwaffe* was having similar problems attacking Allied bombers and developed a number of radio command guided anti-aircraft missiles, none of which saw service. The German *Kriegsmarine* operated *FL-Boote* (*ferngelenkte Sprengboote*) which were radio controlled motor boats filled with explosives to attack enemy shipping from 1944.

Both the UK and US developed radio control systems for similar tasks, to avoid the huge anti-aircraft batteries set up around German targets. However, no system proved usable in practice, and the one major US effort, *Operation Aphrodite*, proved to be far more dangerous to its users than to the target.

Radio control systems of this era were generally electromechanical in nature, using small metal "fingers" or "reeds" with different resonant frequencies each of which would operate one of a number of different relays when a particular frequency was received. The relays would in turn then trigger various actuators acting on the control surfaces of the projectile. The controller's radio transmitter would transmit the different frequencies in response to the movements of a control stick; these were typically on/off signals.

These electromechanical systems were widely used until the 1960s, when they were replaced by the increasing use of solid state systems and the continued miniaturization of electronics allowed more signals, referred to as *control channels*, to be packed into the same package. While early control systems might have had two or three channels using amplitude modulation, modern systems include twenty or more using frequency modulation.

The first general use of radio control systems in hobby models started in the early 1950s with single-channel self-built equipment; commercial equipment came later. The advent of transistors greatly reduced the battery requirements, since the current requirements at low voltage were greatly reduced and the high voltage battery was eliminated. In both valve and early transistor sets the model's control surfaces were usually operated by an electromagnetic 'escapement' controlling the stored energy in a rubber-band loop, allowing simple on/off rudder control (right, left, and neutral) and sometimes other functions such as motor speed.

27MHz and 40MHz crystal-controlled super-heterodyne receivers with greatly improved selectivity and stability made control equipment more efficient and at much lower cost. Multi-channel developments were of particular use to aircraft, which really needed a minimum of three control dimensions (yaw, pitch and motor speed), as opposed to boats, which required only two or one.

As the electronics revolution took off, single-signal channel circuit design became redundant, and instead radios provided proportionally coded signal streams which a servomechanism could interpret, using either pulse-width modulation (PWM) or pulse-code modulation (PCM).

In the 21st century, 2.4 GHz RC control systems using FHSS (Frequency Hopping Spread Spectrum) have become increasingly popular for the control of model vehicles, boats and aircraft. These 2.4 GHz systems are being made by multiple

manufacturers and range in price from a few hundred pounds, all the way down to under £50.00.

FHSS is a technique in which a signal is transmitted in short bursts, “hopping” between frequencies in a pseudo-random sequence. Both the transmitting device and the receiving device must be aware of the frequency sequence. Hence the need in the RC model world to “bind” transmitter and receiver combinations together. Probably the most famous developer of spread spectrum technology was the actress Hedy Lamarr, who co-patented a frequency hopping technique in 1942 to prevent radio-controlled torpedoes from being detected and jammed.

Bella Build Part 2

Since the last newsletter not a lot of actual building has taken place, I have added stringers to each side, the cabin sides are in place together with the bow deck supports. Most of the time has been spent waiting for the weather to improve so that painting and varnishing of the hull could commence.

I decided to paint under the waterline with a red universal all surface paint that didn’t require any primer coats. I made the mistake of reading the label and did not thin the first coat. The paint is very thick and first coat was a bit of a mess. So after a bit of under breath muttering and a lot of sanding I applied a number of thinned coats plus a couple of un-thinned until the finish was acceptable, especially as it will be underwater! Between coats I left the boat upside down in the garage to dry.

In time I will have to adjust the boat’s stand as it is quite a tight fit against the hull and I don’t want to damage its eventual finish. So before starting on the varnishing I had to solve the problem of where the boat can safely dry between coats. Obviously upside down was not an option. I had the brain wave of using a garden trug that was deep enough to hold the keel stem and allow the boat to rest on the underside of the hull.

I then started on the varnishing of the mahogany hull uppers using a high gloss yacht varnish. So far about 6 or 7 coats, I've lost count, of thinned varnish have been applied and the finish is looking quite good. A few more coats are yet to be applied before I resume building.

For Sale

Graham Robinson is looking to sell his Robbe Estelle yacht which is in excellent condition. Graham is looking for around £175.00 to include 2.4GHz Spectrum Transmitter/Receiver combination, servos and battery holder. If interested please contact Graham on grobinson.email@btinternet.com. I have one of these yachts myself, they are a good sailing boat with a wide beam that can handle strong winds.

Close

Well that's about it for this issue according to word count there are 2429 words in this edition plus a number of pictures and I hope you found at least some of them worthwhile.

Cheers

Andy

To save costs the Newsletter is printed in black and white so you miss some of the detail of the photos in colour, etc. – if you would like to see it in full colour I will as usual have a copy added to our BMBC website.