



# **BASINGSTOKE MODEL BOAT CLUB CHRISTMAS NEWSLETTER**

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## **DECEMBER 2018**

Well, here we are in **December** which happens to be the twelfth and final month of the year in the Julian and Gregorian calendars and is the last of seven months to have a length of 31 days. Do you know that **December** got its name from the Latin word *decem* (meaning ten) because it was originally the tenth month of the year in the Roman Calendar, which originally began in March. How about that for a bit of education for you all !

Summer has been and gone, autumn arrived and now we are well on our way to winter. We have had excellent sailing days where the winds has been conducive to good sailing and that has in turn led to a good turnout of Club members visiting the pond with their yachts. Sundays though still brings out the many and varied scale boats along with the yachts.

Now we have reached December the weather has started to get really cold and now we have the wind and rain to contend with too. Of course with that comes less members visiting the pond – only the ones who haven't got a home to go to or ones that have some form of 'mental' impairment !





### **News of other Members:**

One of our senior member **Alan Wells** has not been down to the pond at all this year and has been in and out of hospital undergoing various tests but they can't quite pinpoint what the problem may be. Alan has been confined to the upper part of his house due to mobility problems as he has had a couple of falls. He tells me that he is getting a little better and let us hope that over the winter months his strength builds and that he may be brought down to the pond to meet up with some of his old pals when it starts to get warmer next spring.

### **Membership News:**

As you all know our new Club year started from April this year and it has been an excellent year for new members joining our Club. Unfortunately we do however lose some members who for one reason or another do not renew their subscription.

We have now had 2 new member join us this October/November so Brian Benton and Christopher Whittock are now officially members and I have sent them a letter of thanks for joining our Club so please give them a warm welcome when they visits the pond. Since the beginning of 2018 we have had 16 new members join our Club which is great news.

If all of last year's members had renewed their subscriptions we would have had 84 members in the Club, however 6 members have not renewed their membership which now means that they have been removed from our membership list and we now 78 members in the Club - I had hoped to reach and maintain the 80 or more - but it is what it is and we do have a healthy membership so, this means that we must hopefully be doing something right !

I have mentioned this before but it is not a moan for me, however as the Secretary and Treasurer I deal with all the new memberships and some people contact me by phone before they join and others just send their completed membership forms to me so often we have not physically met before they join us. Both our Chairman Andy and myself find it difficult to 'put a face to a name' of these new members, especially as I do not always get to the pond on both our weekly sailing days so don't be shy, please come up and make yourselves known to us. I know that the 'lads' who regularly attend the pond are very friendly and I am sure that they make all our new members welcome when they visit the pond irrespective of whether Andy or I are around. So guys if there are new members at the pond that you think we haven't met yet, please introduce them to us.

### **Annual Membership fees Due for year 2019/2020**

Here I go again 'talking' about 2019 and 2020 already – why do the years pass so quickly now ?

Next year I believe we can still hold our annual subscriptions at £10 and £5 for juniors – now that is good news isn't it ! I will be able to be more definitive once I have accounted for everything towards the end of our financial year in March 2019.

If we do hold the membership fee at £10 next year and £5 for juniors under the age of 16 years, then I am sure you will agree that this is excellent value as the membership has to cover the cost of the administrative costs for running the Club, Club insurance, 4 Club Newsletters each year and Internet web hosting costs for our Club web site, etc.



**Please remember that Annual Membership runs from the beginning of April to the end of March each year, irrespective of when you joined (however, I do allow those that join us in January / February / March to roll their fees over to the following accounting year).**

So, as a reminder can I please have your membership renewal fees in at the beginning of April next year – it makes it much easier for me and saves me having to keep writing about it and jogging peoples' memories via future newsletters.

We hope that you will continue to support the club in the year ahead and enjoy the benefits of a friendly and expanding membership, complimentary Public Indemnity Insurance and the use of the best model boat pond in the Southern area !

### **News from Basingstoke and Deane Council**

I have had little or no information of late from the Council and its Officers recently. The car parking arrangements on a Wednesday seem to be working whilst the car park gates are kept locked until after the 'commuter run' has happened in the morning – this makes car parking for the users of the park so much easier.

I am going to speak with the Council again regarding a bench which we would like to be installed near to where the members of the Club gather at the pond. Earlier this year we did get turned down by the Landscape and Horticultural Officer of the Council on the grounds that the operations team can only install benches purchased by the council so that they can ensure the quality and build is sufficient to make it robust enough for a public open space. They said that there are a number of memorial benches around the model boating lake and they have been turning requests down for additional benches in that area because they don't feel the space can accommodate any more. They went on to add that they have looked at trying to fit a bench on the footpath on the south side of the lake but it is too narrow to accept a standalone bench and that they have also looked at installing a wall top bench but say the wall isn't secure enough to attach a bench to without rebuilding the wall first which they don't have the budget for. A final comment from them was that they can't install a model boat club bench at this time but still intend to factor one in to the park redesign. Sadly the production of the 'masterplan' has been delayed due to staff resource issues so this isn't going to happen until 2019/20. However, in these times of Council austerity I cannot see anything being funded as shown in their earlier 'masterplan' for the Borough. My comments were that we gave details of a specific type of park bench as used by organisations such as the National Trust, to the Council and we were just going to fund both the purchase and its installation by the Council

One of our members who wishes to remain anonymous, has made a very generous donation to our Club of £1500 for the purchase of a bench and its installation. This money will be shown in our Club accounts as being ring-fenced for this particular purpose only. Our benefactor's wish is that we do provide a bench and that it should have a plaque attached to it saying that it is a gift from The Basingstoke Model Boat Club to all the people who use Eastrop Park in Basingstoke. I will use my best endeavours to try and get this matter to a satisfactory conclusion. On behalf of the members of our Club I have written a letter to our benefactor thanking him for his extremely generous gift in providing this facility for the model boat pond and I will as said above, do my best to see that his wishes are achieved.



## Now it is time for that long awaited sequel to And Clark's Mirror Dinghy build

Building a 1:6 scale model kit of a Mirror Dinghy.

### Part Two – The Finale

At the end of Part One the next major step was the fitting of the decks on top of the bulkheads and side buoyancy tanks. Prior to fitting decks I cut and glued some high density foam into the voids and sealed the internal seams with silicone bathroom sealer. The foam will hopefully provide additional buoyancy should the boat ever capsize!!



After a bit of fettling decks were installed along with rigging plates, mast step and other parts. These were then varnished, in total some 10 coats of satin finish varnish was applied to the boat's interior.



Next stage was to prepare the outside of the hull for final finishing. This necessitated a lot of sanding and use of P38 body filler to achieve an acceptable surface.



Halfords car body grey primer spray paint was used and after at least 24 hours drying per coat, the surface was rubbed down with fine grit. Almost 2 cans were used to provide the 6 coats applied. The colour coat was the applied again using Halfords spray paint in Brookwood Green. At least 48 hours drying time was allowed before rubbing down each coat with fine grit. 8 colour coats were applied.



Following fitting of the dagger board keel and lead bulb weight, which were fixed by using fast setting epoxy glue, it was time for initial flotation tests using the bath.

Following successful testing it was time to fix the rudder/tiller combination, control servos and build the battery/receiver box. Whilst the kit provided a suitable box the suggested method of servo mounting was to use double sided tape. I didn't feel that this would give a satisfactory result. So following discussions with members I used two plywood side mounts normally used in aircraft. In hindsight it would have been better to install the servos whilst the decks were being added as a neater fit could have been made.



Next action was to build and step the mast, add the sails and rig the boat including the control lines for the rudder and sails.



The maiden launch took place on the 14-11-18 and after a bit of tuning the boat performed well, didn't capsize or take on any water.



Well that's it from me, will bring the Mirror to the lake only when light winds forecast to lessen the chance of capsizing. Thanks to all members who freely gave me their advice and experience. Would I build another kit? Who knows though I do like the look of the Aeronaut Bella Sailing Yacht!

**Editor:** *Many thanks for the article Andy and on its launch it certainly looked great on the water and thankfully the wind was kind to us that day.*

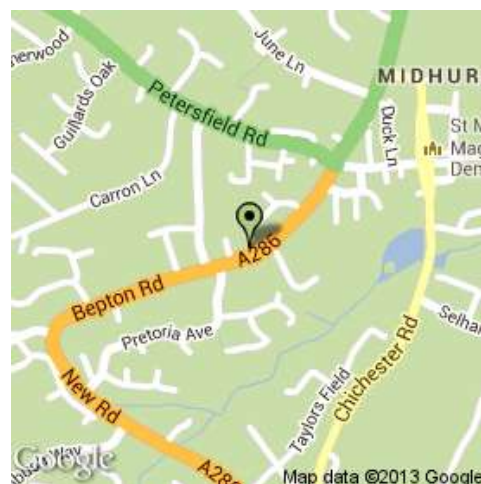
## Midhurst Model Engineering Exhibition February 2019

**Now for the big news and the most important. The Midhurst model engineering show is on again at its usual time next year.** Many of us who regularly attend this event enjoy this show, meeting up with fellow boat clubs and their members and looking at all the other interesting engineering hobbies that are in attendance. The new centre complex at Midhurst a great place to visit and provides great access for getting our exhibits in and out of the halls plus it has welcoming facilities including a small cafe and the centre caters for those persons with disabilities. The date of the show is **Sunday 10 February 2019.**

As we all know the parking is very good at the centre – so no problems there. I submitted our Club booking for next year following this year's show which was confirmed and we have been given the same size stand in the same location as this year. I will only be given passes for 8 members and the idea is we put on a really good display of boats to show what our Club is all about.

I have already spoken to some of our members with regard to supporting me in manning the Club stand. For those that have not been before it is a very good exhibition with all forms of hobby modelling and as usual many of our fellow model boat clubs will be there, it is definitely worth a visit. Doors open at 10.00 am to the public. For those that have offered to help man the stand we usually get to the Grange Centre at about 08.00hrs to set up our stand – it is a longish day for us because we usually stay until the end which is about 16.30 to 17.00 hours. As yet the organisers haven't provided me with the general entrance fees for this year.

For those that want to go to this excellent exhibition further details will be on the Grange Leisure Centre Website or you can contact me for further information and for those that have not been the address is as shown:-





## Lighting Control System

This saga begins with the Hobby Engine version of the “Richardson Tug.” A tug formerly modeled by Graupner as the “Southampton Tug.” The original vessel (“Wyeforce” of Itchen Marine,) did actually work in the Southampton water areas, and even photos are on the internet showing her colours and owners/operators, and previous names.

The “Richardson” variant, as a model, had a smoke generator, hooter and 6 lights (LED’s or pigmy bulbs.) I wanted to change the radio system, which although 2.4GHz, seemed to use more power than my Spektrum transmitter, but in its favour had 6 *separate* channel switches, as well as the normal 2 *stick* controls.

### 1st Steps

So I had to find a way to control all the lights and hooter from my Spektrum, which only had 2 switches & 2 sticks. I still wanted to be able to select each light individually and change its state, on & off.

There are multichannel switching devices available, but not perhaps with 6 or more channels, and not necessarily low cost. So, how about making your own one ?

The 1st item to explore was a 10 channel integrated circuit chip (IC4017) which by means of a single pulse input steps through each of its 10 output channels/contacts. This seems a good start.

Having selected each output channel, we need to switch it on and off again. So by using “AND” logic gate “chips” (IC4081) we can feed the sequence outputs from the IC4017 switching unit to each one of 10 “B” inputs of the “AND” gates. Each IC4081 chip has 4 2-input “AND” gates comprising “A” and “B” inputs along with 4 output gates. An “AND” gate will take an “A” and “B” input and if **both** are “on” then the output is “switched on” on the related “Output” channel. So if the respective “B” output from the sequencer is on, and we send a separate “on” pulse to all the 10 “AND” gate “A” channels, then the respective “Output” channel will also go to “on.” All the others won’t change, as they won’t have both “A” and “B” inputs on at this time.

So now we have a way to select each channel in turn and can force an output change for that channel.

The problem is that as soon as we switch off the “A” inputs, then the “Gate” outputs all go off too! We need to “latch” the outputs. Here we can feed these into a “flipflop” chip (IC4013.) This chip works so that if we “pulse” one of its inputs, then the related output will flip over. If it was off before, it switches on and vice versa. It stays that way until the next pulse on the input. We don’t need to keep the output from the “AND” gate on all the time, just long enough for the flip-flop to see it.

So now we have the bits to make the system. In short, using a switch we can step through a sequence, then using another switch, can change that step/channel from being off to on, or on to off, or just leave it as it was and step onto the next step/channel.



### **Putting it all together, and controlling it!**

In practice on the transmitter, that needs one stick channel, e.g. right vertical (or elevator,) center sprung, where we use an up push as switch 1, and a down push as switch 2. This is passed to the receiver. If we plug in, say an Mtroniks switch to this receiver channel, then we can take the Mtroniks outputs directly into our system. An up pulse steps us through the sequencer, and then if we want to change that step, we give the stick a down pulse, and the “AND” gate and flip-flop will do the change.

The output from each flip-flop goes to the LED's or buzzer. The output from each flip-flop is good for about 20mA, which is fine for LED's. With LED's we have to be careful of the maximum current and so we include a ballast resistor. (It **will** blow without it.) For higher loads like buzzers, we need to send the flip flop outputs through a transmitter driver circuit.

Getting signals out of a receiver channel to the switching board can be a bit of a game. Switch units are available from Mtroniks, Action Components, and others, or even homemade units. The Mtroniks units takes one receiver lead, e.g. the elevator channel, and can drive 2 output channels, as switch 1 & 2. On the other hand a 3 position switch on the transmitter can do the same job as one stick. A Spektrum DX6i transmitter doesn't have that facility, but the Spektrum 5 does.

### **Getting the electronics**

The original theory testing board filled a board of A4 size! I then made a more compact vero-board circuit of about postcard size. Then with Alan's help, explored making a printed circuit version. A company in the Far East allows circuits to be laid out on a PC website, and when all parts and connections are “done” they will make the PCB and send it to you with any of the components you need for a very reasonable price. A bit of work with a soldering iron shows if “you are cooking” as it were. This board was now about playing card size. The same site offers what is called surface mount technology components to be used. These are much smaller versions of the standard plug in “silicon chips.” So I had a go at that too. I would have preferred to have them do the soldering of the chips, but they weren't yet offering that service, so tried it myself. This brought the board size to matchbox size, and I have 3 working boards!

### **Did it work?**

In practice on the “Richardson” having used the system for a few weeks, I used an Arduino Nano programmable controller, for the receiver switching into the system board, because it was cheaper than the Mtroniks, and then on the “AZIZ” tug, I then used the Nano to do the whole job, switching up to 30 LED's in 7 groups.

### **Some Comments on LED's**

Please note that LED's must have a ballast resistor wired in series to them to prevent blowing due to high current flows. The resistor in series with the LED can be installed either before or after it. So, e.g. when using a 6 Volt supply - an LED uses approximately 2 Volts, so for a bright LED, it will require 20mA current flowing through it (twenty milliamps), a ballast resistor needs to drop the remaining voltage  $(6v - 2v) = 4$  volts. Remembering Ohm's Law from school  $V=IR$ , and so  $4V/20mA = 200\Omega$  (two hundred ohms.) This is the minimum resistance value, so we would choose the next available size upwards. If we go as far as  $1000\Omega$ , then we get only 4mA, which is for a

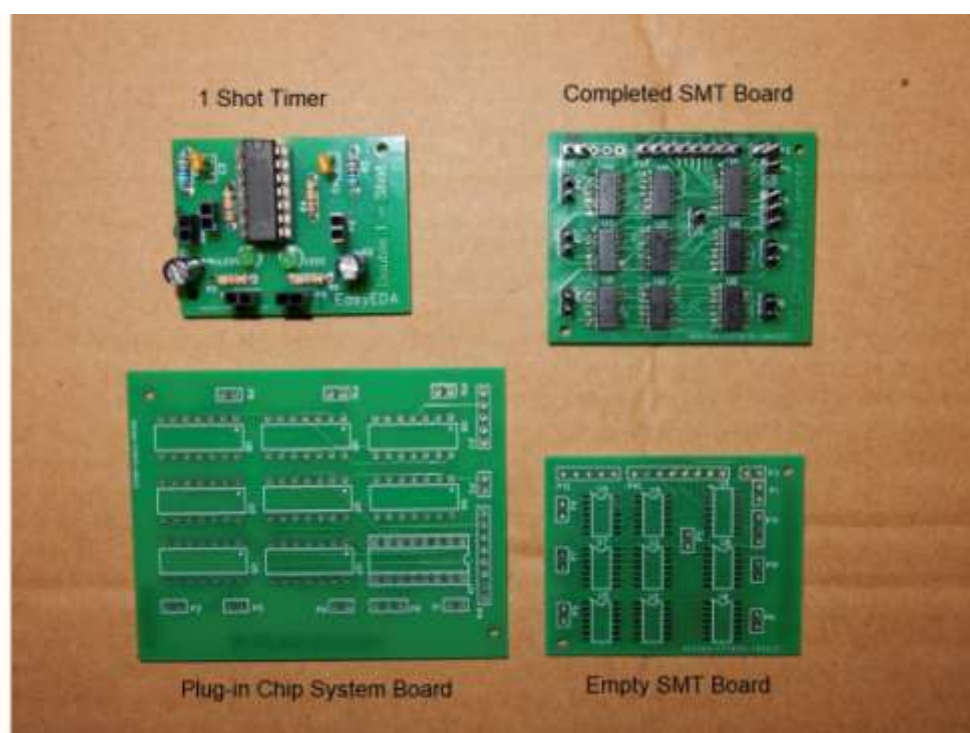




very dull LED. The power flowing through the resistor is found by the  $I^2R$  rule, so  $(20\text{mA})^2 \times 200\Omega = 0.08\text{W}$  so a 1/4W (0.25W) resistor of  $200\Omega$  will be fine. A higher supply voltage will require a respectively higher resistor.

### Attached photo

The attached photo shows 4 boards, all made, (printed and etched, but not assembled) for me by EasyEDA. The top left is a 1 shot timer, which I used as a switch “debounce” system. Below that is the first plug in chip version of the system, while those on the right side are a plain printed board, and the fully assembled and soldered “SMT” board.



***Editors Comments : My thanks go to Chris Cole for this excellent article and hope that you are all now suitably ‘Edjumacated’ in the world of electronics !!***

That is it folks - I must close now as Christmas is around the corner and I need a rest from all this work ! Thanks to my contributors this time around as it is much appreciated. I wish you all a very good Christmas and a prosperous New Year (we hope !). Let us hope you get a lot of boat modelling ‘goodies’ for presents and I look forward to seeing you down the pond in the New Year.

Having nearly finished this newsletter and thought that if you are a little bored over Christmas and have a spare moment you can try this usual little ‘stocking filler’ – a mixture of Club/Boat terms and anything else I could think of - no prizes though I’m afraid, just the satisfaction of finding them all !!



## BMBC Xmas Wordsearch

H	K	O	B	U	I	L	D	E	R
C	E	A	O	O	Y	M	E	N	E
R	R	N	C	H	O	O	S	E	T
A	U	O	G	R	O	U	T	R	T
E	S	N	R	A	O	S	R	G	E
S	I	B	A	R	G	E	O	I	L
D	E	A	N	E	I	E	Y	S	S
R	L	O	G	O	L	M	E	E	W
O	U	O	E	E	G	A	R	N	E
W	R	A	T	S	H	T	R	O	N



WORDSEARCH, DINGHY, COB, DEANE, ENRAGE, LEISURE, MIRROR, GRANGE, BARGE, ENEMY, NORTHSTAR, ENGAGE, CHOOSE, ENERGISE, OIL, LOGO, ANON, RULE, GROUT, DESTROYER, SURE, SOAR, TOLD, NEWSLETTER. MOUSE, BUILDER



Well, I must close now and just to let you know that there are no fewer than **4001** words of wisdom (go on count them if you must) plus many pictures, etc. in this newsletter which I think is excellent value for your money, even if I say so ! If there is anyone who would like to send me an article for the next edition, I would be most appreciative because my brain aches thinking of something to write ! **Ta,Ta, for now.**

*Newsletter by Alan Spooner –  
Secretary / Treasurer  
Basingstoke Model Boat Club*

**ALL THE BEST FOR CHRISTMAS AND THE  
NEW YEAR**