

Chelmsford Amateur Radio Society Newsletter

Find us on 

 Follow @ChelmsfordARS

 Follow @TrainWithCARs



Next meeting: 2nd May - 7.30pm, Oaklands Museum

Talk: Coax - A Flexible RF Component by John Regnault, G4SWX

Inside this issue:

- Editorial & Dates for your diary
- April meeting report
- April Skills night
- Boot Camp survey
- IMD Brief
- GB1STG at Galleywood
- Marconi Birthday Bash
- Snake oil again?
- Blank canvas
- Titanic Exhibition
- Blank for your own comments



Club Nets - Tuesdays 20:00h
Net Controller: TBD

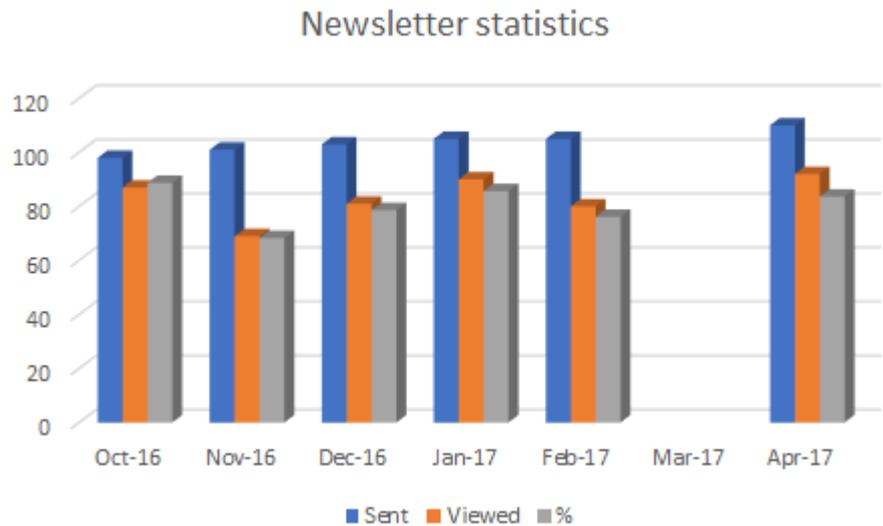
- #2 - GB3DA 9h May
- #3 - GB3ER 16th May
- #4 - 80m 23rd May
3.756MHz
- #5 - 160m 30th May
1.947MHz

Essex Ham Net
Mondays 20:00h GB3DA

Contact details for the newsletter: editor@g0mwt.org.uk

Editorial

Hello again. This is to be my last edition of the Newsletter - a job that has been pretty much all-consuming in the last 18 months or so. Recently, Murray released some statistics of viewing figures for the Newsletter. The graph here shows the number of emails sent out to the Newsletter subscription list, the number viewed and the %age of total. It's not encouraging that as little as 68% of subscribers have chosen to view it on occasions. Compare this to the number that used to get sent out via John Bowen's distribution list.

**APATHY RULES! (YEAH WHATEVER)**

Finding material, or creating it, has sometimes been a challenge, but one I have (mostly) enjoyed, nevertheless. I have learned a lot about the workings of the club, and learned even more about some of its members. People have been very kind to me and help has been forthcoming on many occasions, not all of which is necessarily related to amateur radio. To those, I would like to offer my heartfelt thanks and also, to those who have contributed to this tome during my reign; I've been grateful for your input.

Given that I had the time after our move, I could continue to edit the Newsletter but I am sure, as experience has demonstrated, that after I become removed from CARS the input I would get will be much reduced and I would have no recourse to pictures of events that I might otherwise have attended - sometimes for the sole purpose of this Newsletter. I'm aware that the last editor was essentially performing the task remotely, but it's not really the way I would like to play things. With that, it's goodnight from him and I'll sign off by saying 73, so long, and thanks for all the fish. - **Ed**.

Dates for your diary

Please note: the dates may be subject to change...

Tue. 2nd May	Meeting - Coax - A Flexible RF Component by John Regnault, G4WSX
Mon. 15th May	Skills Night - Danbury Village Hall
Tue. 6th June	Meeting - Table top sale
Mon. 19th June	Skills Night - Danbury Village Hall
Tue. 4th July	Meeting - Talks: Dr. Brian Styles, G3NSD, A Century Not Out; Tony, G4YTG - Antenna Tuners and more; Murray, G6JYB - Marconi Hidden Museum
Sun. 9th July	Sandford Mill - Science Discovery Day
Mon. 17th July	Skills Night - Danbury Village Hall
Tue. 1st August	Meeting - Constructor's competition
Tue. 5th September	Meeting - Keith Maton from Martello Tower Group will talk about Radio Caroline
Tue. 3rd October	Meeting - CARS Annual General Meeting
Sun. October 22nd	Sandford Mill - Science Discovery Day
Tue. 7th November	Meeting - William Poel, G8CYK - Urban noise and SDR equipment
5th December	Meeting CARS Christmas Social Night.

Coax - a flexible RF component

In this month's talk, John Regnault, G4SWX will explain how coaxial cable can be used - not only for connecting-up RF equipment and antennas, but also for many impedance transformation and tuned circuit applications.

Most will have read about transmission-line stubs in various handbooks and manuals and a few might have even tried a few applications. In his presentation, John will describe how to use coaxial stubs for antenna traps, in very high performance transmitter harmonic filters, low-loss receiver 'notch' filters and then look at how you can assemble diplexers - not only at VHF, but also for the HF bands.

The talk includes many practical examples which can be made by amateurs with simple equipment and will hopefully appeal to most radio amateurs.

April meeting report

For our April meeting at Oaklands we were privileged to host Nick Henwood, G3RWF who is the current RSGB president.

Our president Tony, G4YTG introduced Nick Henwood to the audience at Oaklands museum and Tony took the opportunity to ask if he would present our own member Alan, M0IWZ with his M1FDE trophy and constructors certificate.

It has been at least ten years since Nick visited Chelmsford and he was pleased to have been invited to CARS.

Nick became interested in radio at school when he joined the Cadet Force with the Royal Signals section and used the 38 sets, R107 sets and number 12 sets. This led to him enrolling at night school and studying for his RAE exam. He took his 12 WPM Morse test at Cullercoats radio station in the north east and was surprised when his examiner asked if he knew the local vicar, to which he replied "yes, that's my father". Needless to say, the test went well. He joined the RSGB and has been a member for fifty four years.

At a young age Nick travelled out to Sierra Leone on voluntary service in 1963 where he met Peter Dodd, G3LDO who had a bungalow with the antenna on the roof, and who let Nick use his amateur radio station. Nick subsequently built his own transmitter rig with a wire antenna attached to a convenient palm tree.

Nick has travelled extensively in Africa where he has set up many solo stations. He is best known for his call sign 5X1NH when on air in Western Uganda. In 2012 he scored a world new record for 15 metres low power in the CQWDX contest and won again from Rwanda in 2015.

To go back to 1968: he was in Kenya for two years; this time with a KW 2000 rig and a Green linear amp - a long gone company - working phone and Morse. He then came back home to work for Kent County Council and after a spell there in 2004 he decided to go back to Africa, visiting exciting countries such as Kenya, Namibia, South Africa, Rwanda, Uganda, Lesotho and others. By this time he was able to take much lighter portable rigs which had become available such as the 857, IC 7000 and the Elecraft k2.

Nick took some time to explain his love of all the exotic countries in Africa where he loved to meet all kinds of people and where he had fantastic opportunities to indulge in DX with all the resultant pileups that occur in sought after countries. For example, regarding travel to Sierra Leone, the foreign office advice is don't bother but, liking a challenge, he went anyway by - of all transports - an ex Isle of Wight hovercraft, which



ran out of fuel in the middle of the journey (on water). However, the ever-resourceful locals managed to refuel by many hand-carried cans of fuel.

Nowadays Nick uses an Elecraft K3 with an assortment of, as he described it, dodgy bits and pieces. He likes to travel light and on one occasion converted old plastic bottles into insulators. Lightweight antenna systems using ten metre fishing poles and wire which can fit into a small bag for travelling on airlines. An unusual piece of equipment he carries is a catapult for firing leaders over trees - but beware airline security - best to disguise it, if possible.

After the tea break there was a discussion of the new strategic direction the RSGB would like to take for the next five years, which includes active participation in amateur radio, go back to its roots of research and development, protect the spectrum, encourage the full range of radio activities, increase membership, encourage staff and volunteers and, lastly, improve communication between the membership and clubs.

There followed a question and answer session in which discussions took place on several subjects: One of these concerns was the increasing noise floor and what steps are being taken to resolve issues. There has been a breakthrough in approaching Openreach directly as, previously, they could only be contacted through B.T. Members are encouraged to report interference issues, so as to build up a bigger picture of the problem.

Questions were taken on planning issues and the RSGB is keen to help members with advice on any problems with their local planning authority.

The society was pleased with the success of the Tim Peake mission with regard to the number of school children who took part in science session in conjunction with members of RSGB. This was a great opportunity to teach children about science and radio.

This was a very interesting talk from our RSGB president and finished off with a discussion on how youngsters could be encouraged into the world of amateur radio and at this point, a cheque for £100 in favour of the YOTA fund was presented, which was gratefully received by Nick.

Lastly, the famous CARS mug was presented to Nick. Maybe it will turn up in the middle of Africa in the future. - **Oliver Prin, M0WAG**



Pictures courtesy of Colin, G0TRM



April Skills night

This was notionally my last attendance at this popular event. Depending upon how things turn out with Skills and my forthcoming local activity however, I may pop back on occasion. We'll see.

My first thoughts on entering the hall this time were "great—more room" as Pete, M0PSX had put the projector and screen at the end of the hall near the Hawkins Room (where the construction is normally held). Sarah, M6PSK had suggested this and despite Pete's initial doubts, it was good to see it work.

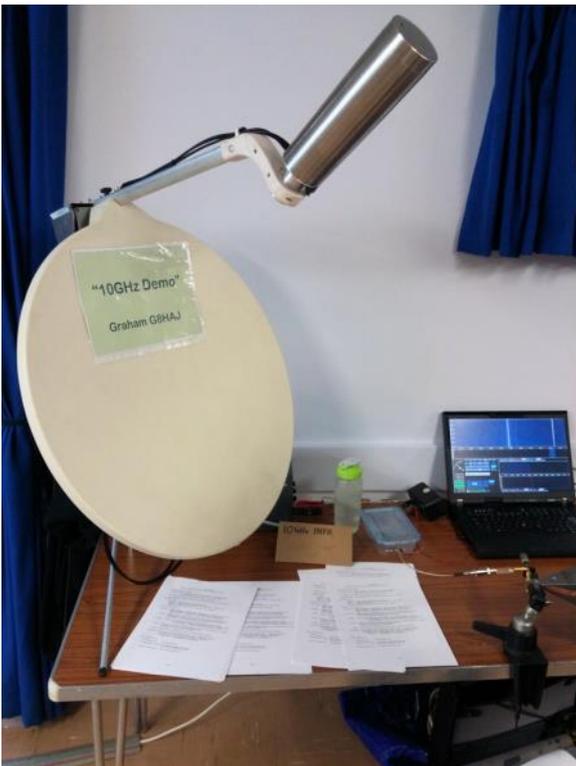
Funnily enough, when I filled in the Skills survey I nearly suggested it myself, but wondered where the CARS membership table would go. So often though, with the screen in the middle of the hall, it would cut the room in half and there would be folk stood staring at the back of the screen. Better then, that all the attendees can see the screen for announcements and quiz, than inconvenience a little-used part of the event.

Pete had looked at the results of the survey and responded as only he can—quickly. No messing, he got in touch with his contacts and they rallied round to give us examples of what was requested. An example to us all!



Pete decides to fan the new paint and help it dry...

Graham, G8HAJ had brought along his 10GHz kit and showed how it could be quite manageable to get onto the bands with a cheap satellite LNB, a simple transverter and one of the ever popular SDR dongles.

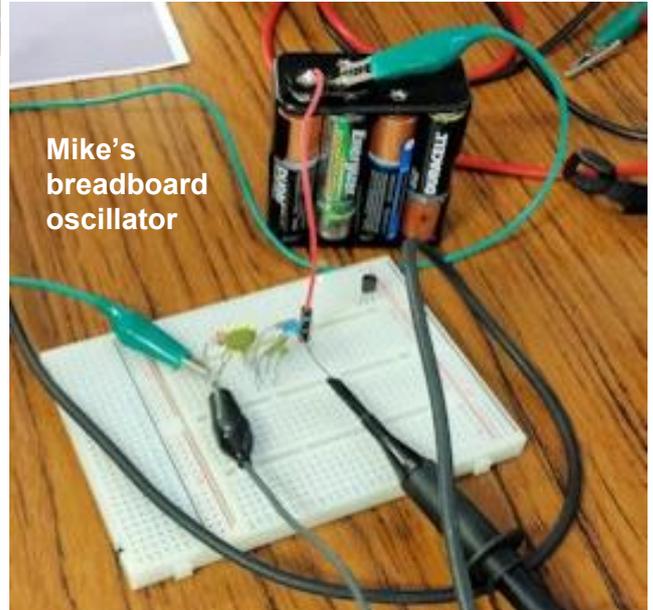


I had brought the laptop along to give some demos on simple simulation techniques but, as with other occasions I have done this, I found there was a reluctance on behalf of many attendees to get involved. Possibly this is because there is nothing "exciting" to see, or possibly it is just not something that registers with some amateurs.

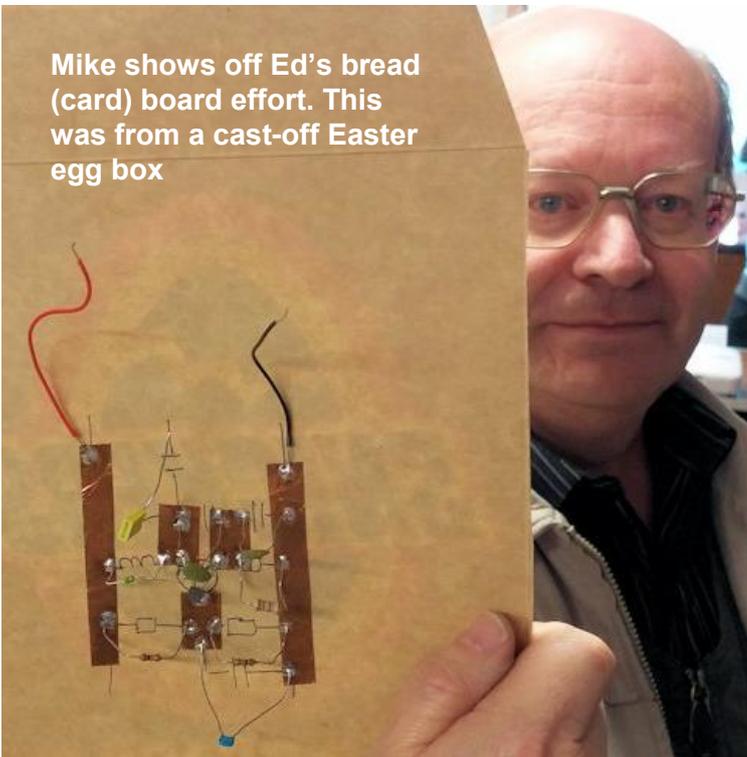
I cannot imagine being without some of the tools, but I guess most people are just happy to listen to, and accept the folklore rather than play with a simulator and see what makes a circuit tick. They don't cost anything other than the energy to run the PC, so why not?



Mike, G4NVT had a nice Easter surprise up his sleeve. Bringing along a well-stocked test bench, he had breadboarded an oscillator that was running way too low in frequency. It should have been about 50MHz but was actually running at 15MHz. The Easter Novelty was that Ed, G8FAX should make the same oscillator on a piece of Easter egg packaging. The tracking was copper foil, stuck to the card.

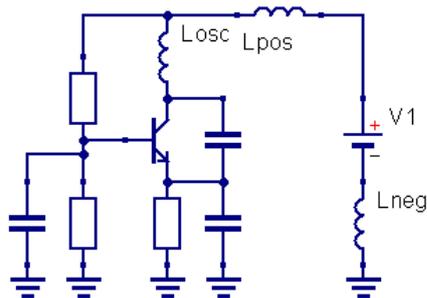


Mike's breadboard oscillator



Mike shows off Ed's bread (card) board effort. This was from a cast-off Easter egg box

Ed wondered why his oscillator was running even lower in frequency, at about 12MHz, but we think that it was likely to be due in part to the power leads being added to the circuit inductance and possibly the fact that the leads were longer all round. The base decoupling was probably doing a reasonable job but lack of decoupling on the collector won't have helped. The components measured up OK in any case.



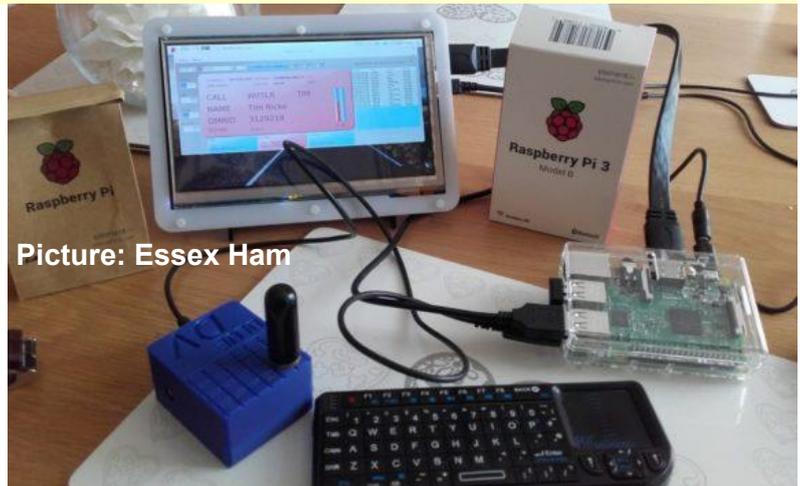


Roy, G4JAC came back with his DF kit for us to see. It seemed there was a lot of interest. The beauty of this aspect of the hobby is that is realistic to expect to be able to make the equipment.; you don't have to shell out on expensive gear.



Chris, M6EDF had brought along his high altitude balloon equipment and was showing a payload and demonstrating the tracking equipment. This aspect of the hobby was something I had not really given much thought to until I read the report by Peter, M0BZU on the USBSEDS15 balloon flight (which was written up in the August 2106 issue of this tome). I guess you have to be prepared to kiss goodbye to the payload in the event of it being irretrievably lost, but if I think of how much an evening with a meal or two in the pub would cost at today's prices, maybe it's small beer in comparison.

Steve, M0SHQ flew the flag for digital voice and showed a Raspberry Pi coupled to the kit. I think it's quite remarkable, the uses a Pi can be put to, but I have to confess that I haven't a clue where to start.



Picture: Essex Ham

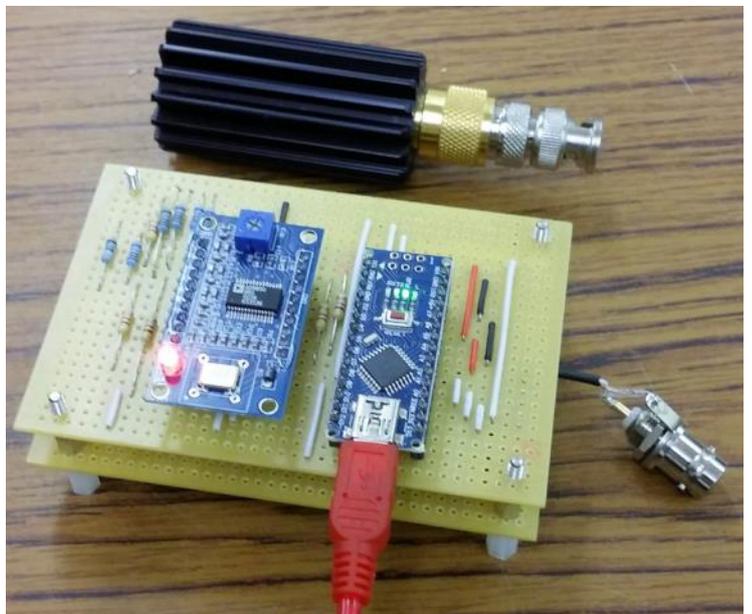
I bought a Pi some years back and hoped to get to grips with it, but I got hopelessly lost amongst the OS; it just seemed such a trial compared to Windows and DOS. For a while, I used it as an alternative to the PC for general web browsing as it saved an awful lot of energy compared to my old PC, but I soon tired of that - waiting for things to happen - as the processor was so slow.

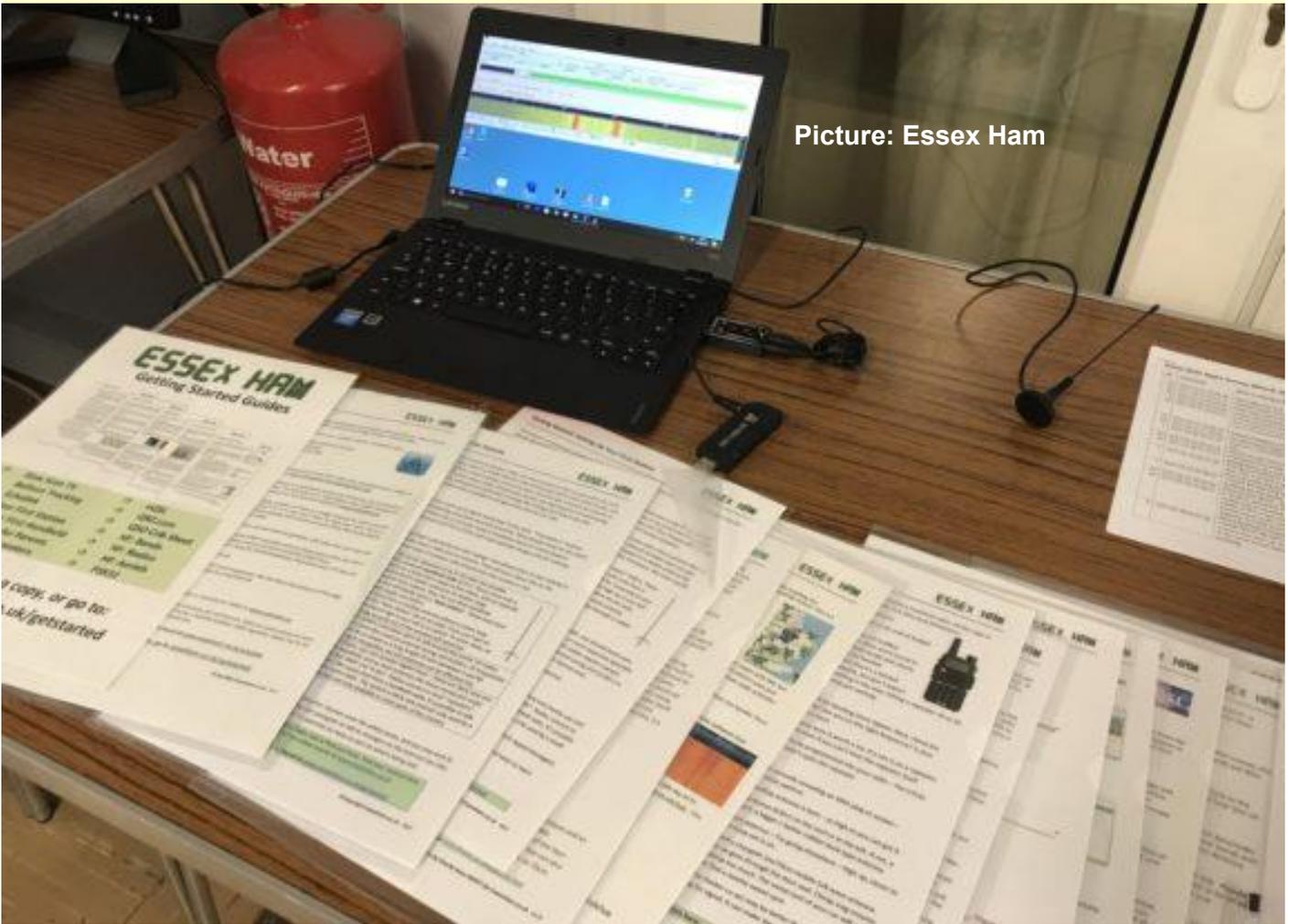
I couldn't think of a good use for it in AR as, at that point, I wasn't using any of the modes that the Pi could be put to good use on. Eventually, I virtually gave it away at one of the tabletop sales. Maybe I will have another look at them if and when I get established in Norwich and the IC 7300 starts to become part of a more digital setup. It may be that I have to use digimodes to get out from there.

Alan, M0IWZ had brought along a more finished version of his Arduino based SWR meter that several people are building. It was good to see the nicely laid-out and stacked Veroboard assembly, but it seemed to be a little prone to noise pickup and there is work yet to be done on the calibration. I'm sure that when Alan has boxed it in a decent screened enclosure and fettled it, it will be a nice addition to the shack.

Now, perhaps that is something I should condition myself to try and achieve with a new RPi, before my braincells succumb entirely to the ravages of my advancing years. I will have more room in my new shack, so test equipment space won't be so much of an issue. (Also, I need the encouragement!)

On to the refreshments: This time around, although we suffered the loss of Ann's cakes (taking a holiday is no excuse, Ann), I was pleased to see bread pudding on offer, courtesy of Terry, M6SKZ. Excellent! David & Myra were again serving tea with their usual smiles and that is always nice. Almost last, but not least for me to mention, is the contribution that Essex Skills as a brand make, and have made, throughout the life of this event. There is always information available, whether printed, or via a visual display. The organisation of exhibitors, set-up, takedown, wall posters and logging of attendees all gets the attention it needs, along with a cheery smile and a sense





Picture: Essex Ham

of humour. There is no doubt that without Pete, M0PSX the event would not be what it is. Long may it prosper under his watchful eye.

Essex CW Club's presence is always welcome and Dean, G4WQI was there to fly the flag for the club's art. My key skills have become rusty and that is something I will also have to remedy in Norwich. I'll wrap up this report and look forward to catching up (remotely) on future events via the pages of Essex Ham and CARS. - Ed.



Essex CW ARC
Encouraging CW Use
On the Amateur Bands



Essex CW Club

The club is considering putting on a CW 'Boot Camp' later this year. Features would include:-

- Morse for the complete beginner
- Morse progression
- Morse for the faster operator
- Contest techniques and programs
- Twin Paddle operating
- Taking the RSGB morse test
- Supervised on-air operation for the novice.

The event would take place on a weekend day in the last quarter in Witham.

We would like to assess the interest before making any final decisions. To this end, we have enlisted the help of Essex Ham, who are a good friend to ECWARC. A survey is available on their website to assess interest and gauge your particular areas of interest.

Please assist us by completing the survey. It's free, confidential, and only takes a few minutes. You can find it at:

www.sxham.uk/morsecampsurvey

Many thanks for your help

Kind regards and 73s,

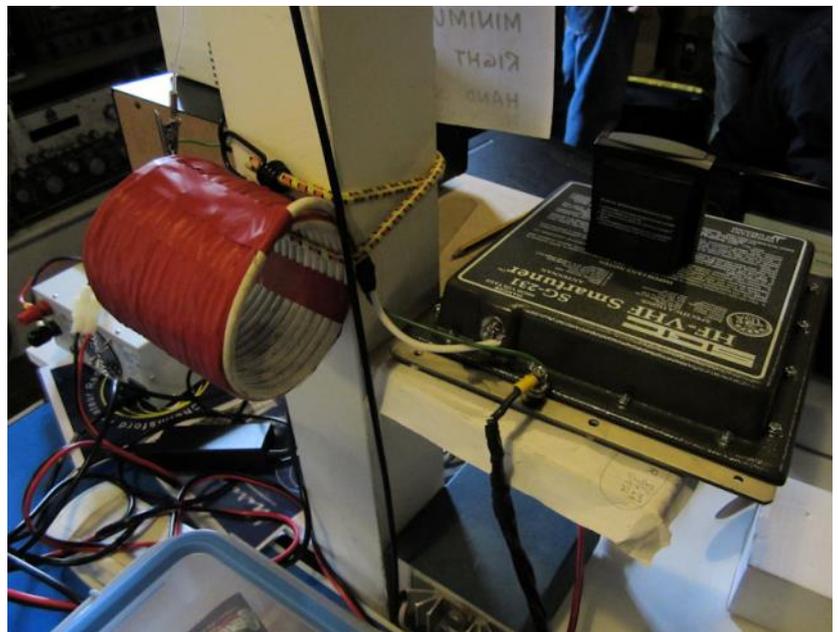
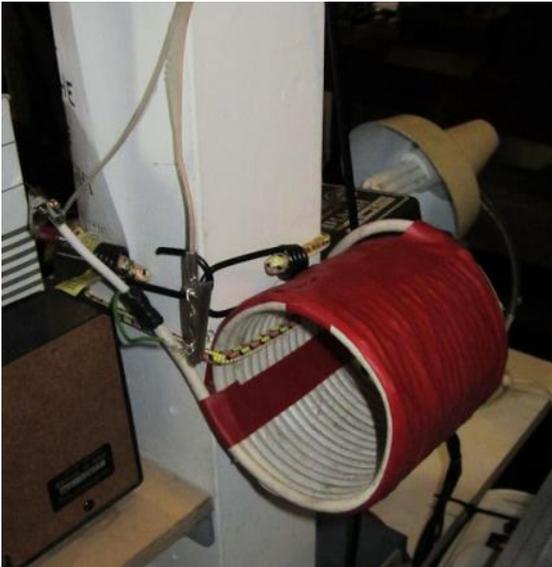
The ECWARC Committee



IMD brief

I popped along to Sandford Mill to see the setup to celebrate International Marconi Day and wasn't surprised to see Andy, G0IBN and Dean, G4WQI operating and logging respectively. Dean was checking propagation and the reverse beacon network to see what paths they could hope to work and how the signal was getting out; Dean reported that the conditions were pretty flat and that was reflected in the RBN map.

I was interested to see that a coax choke balun had been placed between the SG-231 ATU and the 300Ω ribbon feeder which, in turn, runs to the open wire line up to the antenna. It would have been interesting to have got an all-band impedance plot of that setup.



Jim, 2E0RMI had his www.emmatoc.com Internet radio station set up in his eyrie on the mezzanine floor above the hut. Everything will sit in a suitcase and is battery powered for complete portability. He ran his two-hour show like a professional, interviewing guests and participants alike. Andy, G0IBN was telling the audience the reasons for the Morse transmissions and the general coverage of the world that may be achieved. - **Ed.**



GB1STG at Galleywood

I popped over to Galleywood to see the setup outside the Horse and Groom and was pleased to find several stations operating on a variety of bands: 80m, 40m, 20m, 4m and 2m were all operational at various times and there wasn't too much in the way of interference between the stations. Mindful of the fact it was a radio event, Pete, M0PSX took a few group shots with a camera operated wirelessly via his wristwatch (Dan Dare, eat your heart out) and the result is shown below.



The site at midday. Picture: Pete, M0PSX



Peter, G0DZB had a good setup with his vertical and a decent radial farm that promised to cover most bands and a remote ATU where it



should be—at the base of the antenna. The huge loading coil at the bottom of the picture (left) looked good for 160m at least. Peter's transmissions were making themselves known on the 2m station when he cranked it up to 50W, but he was close enough to throw things at...

David, M1ECC confessed to being a virgin - at least as far as operating in the open. His station was well provided with power. A nicely put together solar panel charging his leisure battery through a dedicated charge controller and a wattmeter monitoring the d.c. output power to his rig. He had made everything himself and it looked very neat indeed. There is no real need for sophistication in field portable work, but it's a real bonus if you don't have to faff around with croc-clips and jury-rigged connections and can just work out of the box. Well done, David.



His antenna was a 20m inverted V dipole with a steeper angle than he would have liked, but he ran out of length on his guy ropes. Maybe you don't need sophistication, but you could at least make like a Boy Scout and be prepared in that department!

David was also running an auto ATU, but at the rig end of the coax run. He prefers a manual ATU but this LDG kit suited his purpose for convenience.

John, lower left, had an 80m net running on his Elecraft K2 and inverted V dipole which, like all the others, was held up on a 6m telescopic fishing/flag pole that he bought for £6.99 in Trespass at Lakeside. I was curious about the amount of background noise level on John's Rx - about S7 on 80m. I had hoped that I would see a much lower noise level in an environment you would expect to be electrically quieter than my home QTH, but it seemed consistent. John was operating not far from some overhead power lines (240V, not kV transmission lines) so maybe a lot of the conducted interference was emanating from them.

I particularly liked his ground stake. It was a particularly meaty example with a nice arrangement for adjusting the fit from 25-55mm. Find it at [365-online_shopping](#) on eBay for £9.99.



The three-point screw clamp should enable you to square up the mast if you don't manage to get the stake screwed perpendicular in the ground.

I shall certainly be getting one for the new QTH as I will be erecting and taking down the 10m pole before I gradually wean the neighbours into accepting it as a fixture in the garden.

I have used a 40m inverted V dipole myself at home, but the new QTH just won't have room, so temporary verticals or loops will be mandatory until I find out how to string a wire from the back fence to house gutter in a sloping quad loop. That's the current plan, anyway.

Dorothy, M0LMR was on a journey of discovery with her first foray into SSB using the 2m station. Charlie, M0PZT was coaching where necessary.



Stella and Chris, G0EKP and G0EKN respectively, were setup on 20m initially with a nice homebrew dipole made from two mobile whips fixed at the centre with a commercial clamp. The angle subtended between the whips may have been about 120° or so but it looks steeper in the picture due to optical foreshortening. Chris had a 40m version ready to use if the conditions required it. Again, this makes for a nice portable antenna that gives me ideas for the new QTH.



Dave, M0TAZ had a very compact station setup. Running a 4m vertical from what appears to be a IC-7100 and powered from the car, it was almost indecent in its simplicity. It just shows how simple portable operation can be, if you have a mind to work with the bare essentials.

Talking to Pete on the Monday night net, he reckoned that, in all, about thirty people had taken part during the day, turning up in part to chat, gawp, take notes & photos and operate. A nice interlude, and good a example of how to enthuse people into getting together for a fun day of radio.

25 years ago I was at a model flying event - something I used to do quite regularly - but on that occasion I got sunburnt. Nothing new in that for me, but on that occasion it caught my face. As usual, it turned red. Normally the redness fades and the skin might peel, but this time it didn't. It stayed red ad then the skin turned purple and blotchy. It stayed that way for about a year and then my skin became flaky—like eczema.

I went to skin specialists for years and nobody could diagnose, or fix it and neither would they listen when I told them it started with sunburn. Eventually, a local GP in Chelmsford sent me to a dermatologist at Broomfield Hospital and he prescribed a course of topical chemotherapy to repair the sun-damaged skin. It was a revelation, albeit a painful one in which a course of treatment over the course of a month or so - that results in the damaged cells being effectively chemically killed, peeled off and replaced. This was to be repeated at intervals of 2-4 years up until fairly recently.

I used to attend radio club field days, of course. Now, I have a constant and persistent fear of spending too long in the sun and those days are the ones that are most suited to this sort of activity. Factor 50 sun-screen and silly hats are the order of the day. Longer cycle rides have to take place in the evenings or late afternoons and even working in the garden becomes worrying, so day-long portable activity is not something I normally subscribe to. That said, my colouring is prone to that sort of thing happening and the odd day out in the sun in this country is not going to affect the majority of field day participants adversely.

Enjoy your field events, but take care out there! - **Ed**.

Marconi Birthday Bash

This event was held for the benefit of Sandford Mill museum and John, G8DET reports that about 200 people turned up over the course of the day. The usual mix of old and new was on show with CARS running an HF SSB station in the old Marconi Hut. Tony, G4YTG was on the mic when I called in to see how things were going and it was interesting to see the difference in background noise levels between that location where they were quite low and at Galleywood, where they seemed a lot higher.

Colin, G0TRM had his display of Morse keys on show again, but they were tucked away behind the hut in the place that normally has the old Marconi TV camera demonstrations, which had moved up to the mezzanine floor for greater impact. There were several displays of "live" cameras and old broadcast footage from when Marconi held sway at the BBC. Even though he was a little hidden, Colin had done a good job of maximising the visual impact of his display and John reports that those who visited it loved to sample the automatic tape reader where they could send their names in Morse.

Tim Wander gave a number of his excellent group speeches about Marconi and all aspects of his life and work and the tea room under Ros Webb's supervision did good service with many sitting outside in the sun.

Jim Salmon, 2E0RMI had a gazebo on the grass and a number of people engaged in detailed discussion about all aspects of amateur radio.

Bob, G4MDB had a couple of rigs; a 2m transceiver and a receiver scanning the air bands. His antenna farm consisted of a couple of commercial mag mount whips on a comprehensive ground plane on the gazebo roof in perfect camouflage which masqueraded as a KitKat tin, but you weren't fooling me, Bob!



Below is a photo of Anay and Anurag practicing their Morse (with Dad looking on) having attended a training session with Colin (back to the camera).



Pic: G8DET

I met this family at Hall Street when the radio factory was running and I was demonstrating CW for Essex CW club. There may be a budding CW operator there.

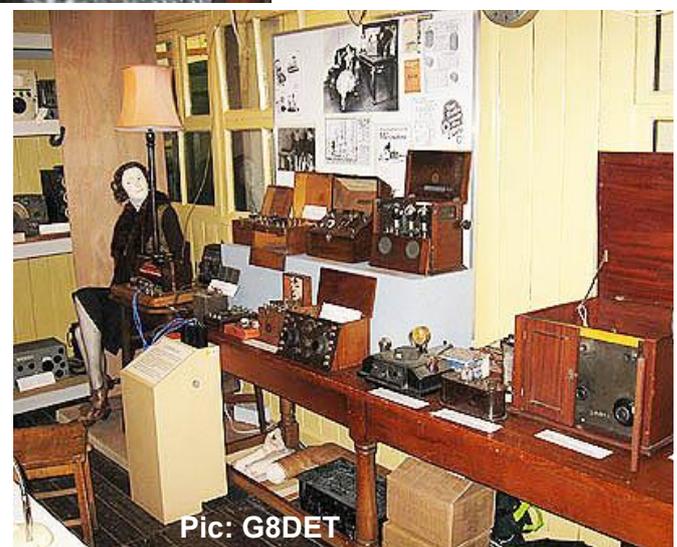
Adrian Soane, M0ABY talking to CARS President Tony Gilbey, G4YTG between QSOs.

Adrian is the Almoner for RAOA, Old Timers' Association and lives in Wheathampstead, St. Albans and a CARS Member for many years with his Wife Mavis.

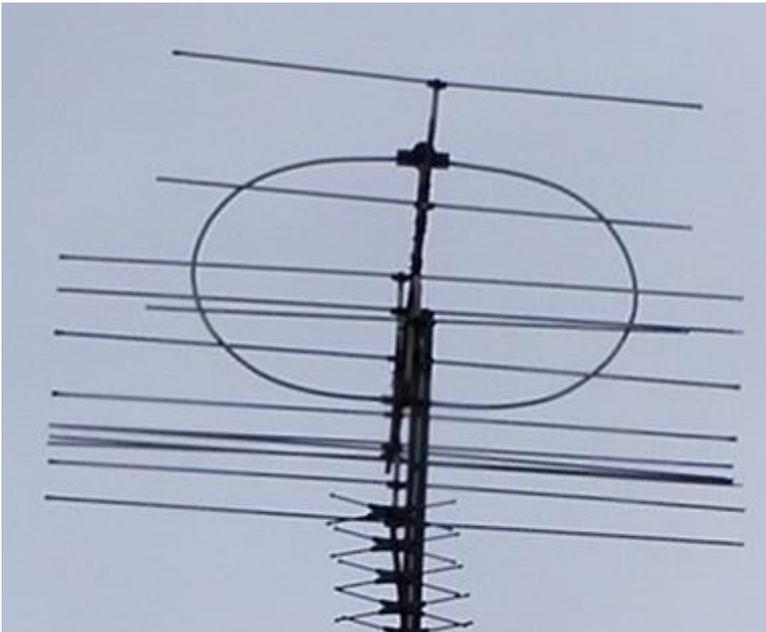
And finally, the 1909 to 1920 Marconi Wireless receivers with the "Marconi Lady" and her Crystal Set. **G8DET / G4GHO** words & pictures



Pic: G8DET



Pic: G8DET



Snake oil again?

I spotted this antenna in London recently. It appears to be a form of squashed loop or “open” folded dipole with three directors and a common skeleton corner reflector.

I Googled “high gain FM antenna” and found it to be a Galaxie 14, made by Ron Smith Aerials: <https://www.ronsmithaerials.com/>. They say: “*The circular dipole enhances the performance on circular transmissions like Capital, LBC and Magic, whilst maintaining normal performance on Vertical and Horizontal modes*”. I haven't come across an antenna that gives enhanced performance on circular polarised transmissions whilst maintaining “normal” performance on either V or H modes (whatever that is).

Normally, with a reflector that is angled as this one is, you would expect there to be a single centrally mounted “driven” or “active” element (albeit possibly a folded one) and one or more directors in the same plane. This configuration seems to suggest the active element is treated as a dual element with the ends folded together—a bit like a vertical Moxon but I can't see any rationale for the directors that are triple stacked vertically.

Does any of that stack up? Perhaps it is just one of those marketing things and carries more style than performance. I say this, because a Hi-Fi audio reviewer is quoted on their website. The antenna is one of a range including, Circular, Diamond and Orion. There are better pictures on there that are copyrighted, but this reviewer's comment is public domain:

“To dispel the notion that any aerial will suffice so long as it is roof mounted, compare the signal strengths I measured off the two aerials I have on a 12ft roof mast. The secondary device is a Magnum Dynalab ST-2 omnidirectional, while the directional multi-element Galaxie 17 is aligned to

use the transmitters at Wrotham in Kent and Crystal Palace in south east London. The Magnum Dynalab omni gives 40dB of signal on Radio 3, and the Galaxie gives 67dB, a difference of more than 2mV; more than 22 times the gain. On one of London's commercial stations the omni manages 39db (89 μ V) while the Galaxie pulls in 74dB (5 mV) the latter being more than 50 times greater. The difference especially on Radio 3, is readily audible. With live broadcasts the Galaxie 17 produces a far deeper soundstage, greater clarity, more depth and substance to instrument timbre, and more low level detail than either the Magnum or the Yagi which the Magnum replaced” The Dynalab ST-2 is a vertical $\frac{1}{2}$ wave whip with a “loading coil”. <http://magnumdynalab.com/pdfs/manuals/manual-st2.pdf>. If it is $\frac{1}{2}$, then that must be a tuned matching coil, surely, ‘cos using a loading coil will shorten an antenna (unless the antenna is electrically $\frac{3}{4}$ λ and the physical length is $\frac{1}{2}$). As it is vertical, it will be at odds with antennas optimised for horizontal or circular polarised transmissions but, in any case, a gain difference of 67dB is a huge number that is un-



likely to be accounted for by that, or the gain figures either. As for far the deeper soundstage, more depth and substance to audio timbre etc., well - your guess is as good as mine as to how these people justify their place in the journals.

Getting back to the Galaxie: It appears to have a single feedpoint and as far as I'm aware, you can't organise an antenna to provide anything other than vertical or horizontal polarisation unless you have two driven elements, each driven by a phase difference. Note also, that the description is of a "circular dipole". It makes no mention of circular polarisation or phasing, so the claims may be spurious. You decide.

Types of polarization

Linear polarisation is the basic form and is usually termed horizontal or vertical to describe the direction of the electric field in the plane at right angles to the direction of propagation. This also corresponds to the optimum orientation of the receiving dipole for the corresponding transmitted polarisation.

If the transmitted power is divided (usually equally) between the horizontally and vertically polarized components with no importance being attached to the phase difference, then the transmitted polarization is called mixed, or slant polarisation. Where the two components are equal and in phase then the electric field lies in a plane at 45° between the two driven elements (conventionally, 45° to horizontal) and is just a special case of linear polarisation.

Circular polarisation is where the signal components are equal, but differ in phase by 90°. With circular polarisation the electric field rotates with time, the 'hand' or 'clockwise' direction of the polarisation being viewed propagating from the transmitting antenna. Right hand = clockwise, and vicky-erky. Circular is a special case of elliptical, wherein the latter has unequal horizontal and vertical components and, obviously, the stronger of the two will determine whether the ellipse is stronger in a horizontal or vertical direction.

So; how many FM stations use circular polarisation? I haven't a clue. The BBC has been using mixed since about 1979 and independent authorities use either mixed or circular, but I haven't an idea what the relative coverage of these modes is. If you are interested, there is an old ITU report paper to be found here: https://www.itu.int/dms_pub/itu-r/opb/rep/R-REP-BS.464-5-1990-PDF-E.pdf that covers 1970-1990 and summarises some tests carried out in various parts of Europe.

Generally, then, mixed or elliptical polarisation is said to give better all-round performance for the variety of FM broadcast antennas out there, be they (mainly horizontal) dipoles, whether straight or bent round to provide omni-directional capability, "transistor" portable and car radio whips & assorted coat hangers.

It's amazing where this Newsletter leads me. When I photographed it, I was going to write a "does anyone recognise this?" article. - **Ed**.

Blank canvas

The garden at the new QTH is not quite as big as this; it finishes just behind the garage (right). They actually took down the back fence to rotovate and put down topsoil on all the gardens in one go. Not much space, is there? We don't anticipate having a lawn. Flower beds around two edges, a patio area for the mandatory table and chairs, a pergola to house our bench seat (for a drink while reading or catching the evening sun) and clearance space for the rotary dryer. There will be a mix of paving, gravel and raised beds, but plenty of space to anchor a mast for a loop or vertical and the fence will be handy for wires... **Ed**.



Titanic Exhibition

I went along to this one Saturday when I was in town and, to be honest, it was a bit lacking. There was plenty of information, much of very interesting, and a lovely model of the Titanic rusting quietly on the sea bed, but the environment and other exhibits were a bit sparse. When I visited, the replica Titanic radio room was at Sandford Mill and was going to stay there until IMD, after which it would be dismantled and then re-erected at the exhibition. I feel that any of the public visiting before the transfer may have been disappointed without that being present. By the time you read this, though, the exhibition should have been transported to Bond Street to add weight to the exhibit.

At the door, you are given a "boarding pass" as a ticket for the event which can be re-used so that is a saving grace. Anyway, whatever the outcome, I wish the exhibition every success in raising funds for the Civic Society. - **Ed**.

<http://www.bondstreetchelmsford.co.uk/index.php/what-s-on/news/277-titanic-honour-glory-exhibition>



Gap filler

This was a blank space.

It was blank because I couldn't think of anything to put in it.

It could have been filled. I could have had lots of things to choose from that were submitted by club members, but I haven't, 'cos you didn't.

Let's hope the next editor has more luck... de **Ed**