



# Chelmsford Amateur Radio Society

Established 1936

Affiliated to the RSGB Club Call Sign-G0MWT  
President-Carl Thomson, G3PEM Chairman-John Yates, G1UZD  
Treasurer-Brian Thwaites G3CVI Acting Vice Chairman-Geoff Mills, G3EDM



Newsletter No 575

Web Address: [www.g0mwt.org.uk](http://www.g0mwt.org.uk)

February 2014

## This Month's Meeting

**TUESDAY, 4<sup>th</sup> February.** Doors open 7pm for 7.30pm start, with 10pm finish.  
**OAKLANDS MUSEUM, MOULSHAM STREET, CHELMSFORD, CM2 9AQ**

## ***“A Hundred Years of Amateur Aerials”***

Presented by Tony Gilbey, G4YTG

Nowadays whether you use EZ-NEC, Google or the local Emporium, it takes relatively little effort to find all the information you need from Design-It-Yourself, to ready-made antennas.

Think back to a hundred years ago and the original amateurs were not so fortunate. Based on archive material, this fascinating talk will present aerials from across the years! Material courtesy of Elaine Richards, G4LFM (RadCom Editor) who manages the RSGB archives, with an original presentational spin by our very own guru, Tony G4YTG.

Carl Thomson, G3PEM and James Beatwell, 2E1GUA will run the Raffle.

### **Dates for your Diary**

Tues 11 <sup>th</sup> , 18 <sup>th</sup> , 25 <sup>th</sup> Feb.	CARS - Evening Radio Nets @7.30pm (Local). See Website for details.
Every Sunday	CARS - Backnang (Germany) Net at 2100 (UTC) on 3.750MHz +/-QRM. Peter DK7SP chairs it - please join in as he's feeling lonely!
Every Monday	Essex Ham 2m Net @ 2000h GB3DA
Sunday 2 <sup>nd</sup> February	Canvey Rally; Doors Open 10:30. CARS & ERG in attendance
Monday 17 <sup>th</sup> February	CARS Skills Workshop from 7pm
Tuesday 4 <sup>th</sup> March	Digital TV, Radio & Amateurs – What's Next? Murray Niman, G6JYB
Thu 13-Mar-2014	Start of CARS Intermediate Course - Contact Clive G1EUC to join
Tuesday 1 <sup>st</sup> April 2014	Marine Radio by Carl Thompson, G3PEM

To be a Member of CARS, send a Cheque for **£15** – Adult Membership (16s and under are FREE) to:-  
Mr Brian Thwaites, 118 Baddow Hall Crescent, Great Baddow, CHELMSFORD, CM2 7BU.  
If you would like a receipt, please enclose a stamped addressed envelope with a 2<sup>nd</sup> class stamp.

Please inform Brian, G3CVI by email at [g3cvi@g0mwt.org.uk](mailto:g3cvi@g0mwt.org.uk) of any changes to your callsign, postal or email address, etc. Only by **YOU** sending Brian your email address, can we ensure **WE** get it right!

**Nets** Tuesdays **19.30h** (2<sup>nd</sup>) GB3DA, (3<sup>rd</sup>) GB3ER, (4<sup>th</sup>) 1.947MHz, (5<sup>th</sup>) 3.750MHz  
Sundays @ 21.00 Backnang net on 3.750MHz  
Also there is the Essex Ham net every Monday @ 2000h on GB3DA

**Net Controller for February is Geoff, G3EDM Thanks to Colin, G0TRM for January.**

*ALL factual content presented is “as received” from the contributors of the articles; the editor accepts no responsibility for its accuracy, errors or omissions.*

## Last Month's Meeting - Tuesday, 7<sup>th</sup> January 2014.

### "Building a Remotely Operated Amateur Radio Station" by John Regnault G4SWX

Technology is always moving forwards and Remote Operation of an Amateur Radio Station can now be within the reach of most people. Indeed for some it may be their best option, as they get older or live in a flat or noisy domestic environment. However things are not always as easy as they might first appear and remote operation can introduce many new issues and problems (not least of which is getting a reliable internet connection!).



Figure 1 - John being introduced.

John Regnault G4SWX is RSGB VHF manager but has also had two years extensive experience of remote station operation including operating 144MHz EME as well as HF. His talk included slides that covered the licence clauses that enable remote operation and the requirements for failsafe and adequately secure links (so Microsoft was not on his recommended list, unless you fancied driving miles to hit CTRL-ALT-DEL!).

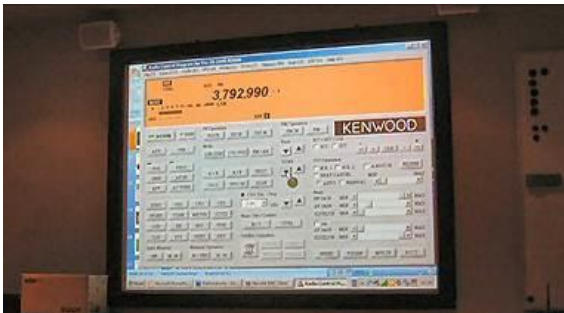


Figure 2 - PC Remote Control of a TS2000

Instead, he showed that modern generation hardware such as dedicated RRC1258 interfaces from <http://www.remoterig.com/> are an example of a better approach. These can transform RS232 PTT, mic, audio etc. to be carried with low latency over Ethernet, potentially without needing a computer at all. This can be complemented by Ethernet controllable relays etc. for antenna or PA switching (Swedish webswitch products from <http://www.webswitch.se/> were one of John's favourites)



Figure 3 – RemoteRig Interfaces

John also showed how existing hardware such as rotators could be adapted to Ethernet control courtesy of products from <http://easy-rotor-control.com/> as well as tips such as having a webcam pointed at SWR meters or temperature gauges in the remote shack for monitoring. Attention to detail had resulted in a MTBF of 3months+.

An impressive set of live demonstrations included remote operation of a TS2000 and an Elecraft K3. The latter used an Elecraft K3/0 as the remote head. This model has no internal rf but provides the perfect radio-like user interface (as opposed to the more common radio-console software on a PC). Just a fraction of a second latency could be heard – quite impressive. Digital modes such as JT65 also worked well through the remote link.



Figure 4 - Elecraft K3/0 Remote Unit.

Allowing for two way audio etc, John indicated that link speeds of ~200kb/s were needed – not too demanding. His own though had an added feature, as there was no ADSL to his remote shack. Instead Ubiquiti Wi-Fi links had been adapted to give 6Mb/s 802.11b over a 10km range in the amateur part of the 13cm band!

The talk had attracted a substantial audience including visitors from Cambridge and even Ireland. Many thanks to John for travelling from Suffolk.

**Words Murray, G6JYB. Photos John, G8DET**

## **CARS Skills Workshop**

Monday the 20<sup>th</sup> of January 2014 saw the first CARS Skills Workshop take place at the Danbury Village Hall. This is a new initiative aimed at providing help and advice for those new to the hobby, whilst giving the more experienced amateurs the chance to try something new and to pass on their knowledge to the next generation of amateurs.

An impressive forty-five people turned up for this first event, including a former CARS graduate making the trip from Sudbury.



CARS Chairman John Yates G1UZD welcomed the attendees, before handing over to the event's organiser, Pete Sipple M0PSX who outlined the purpose of the Skills Workshops – namely to provide a meeting place to learn, share and ask questions.

The first event was largely a social get-together, to allow people to have a chat in a friendly environment and to meet others. A number of demonstrations were on display, including an Echolink station manned by Jim 2E0RMI (with his homebrew Slim-Jim antenna), and a laptop showing live APRS packets being received on 2m, decoded and displayed on a map of Essex. Andy G0IBN and Colin M1OCN from the Essex CW Club were on hand to chat about Morse training courses and show off some of their hardware. Charlie M0PZT brought along some of his homebrew projects including a desk mic and a Digimode interface. Charlie also gave a short presentation on his new logging application uLog, which allows for fast and hassle-free electronic logging. (This can be downloaded for free from [www.m0pzt.com](http://www.m0pzt.com)).

Questionnaires were handed out to allow attendees to set the agenda for the next meeting, which is provisionally planned for Monday the 17<sup>th</sup> of February 2014.

Event co-ordinator Pete Sipple M0PSX: said *“It was very rewarding to see such a strong turn-out for the first CARS Skills Workshop, with attendees ranging from operators with over 50 years’ experience, to candidates currently on our Foundation training course. As amateurs, we all*

*need to explore new ways of helping others to gain new skills in all aspects of the hobby, and we’ve already had many suggestions for future topics and activities for our next workshops.”*

A big thanks to everyone who worked hard to make the evening a success, and making the trip to a very foggy Danbury to try the first Skills Workshop. Special thanks go to David G3SVI and Myra M0MYR, who did a sterling job with the refreshments – especially given the excellent turn-out for the event, and a teapot malfunction.

For a collection of photos from the evening, please see [www.essexham.co.uk/skills-jan14](http://www.essexham.co.uk/skills-jan14)

To find out about upcoming Skills Workshops, go to [www.hamskills.co.uk](http://www.hamskills.co.uk)

**Pete M0PSX**

## **CARS Foundation Course**

The 29<sup>th</sup> CARS Foundation course started on Thursday the 9<sup>th</sup> of January, with eight prospective M6s in training.

The first CARS training course took place back in January 2002, and the training team continues to work hard to get candidates ready for their exam, and to arm them with the knowledge they need to become good operators. The Foundation syllabus includes sections on Safety, Feeders & Antennas, Licence Conditions, Propagation, Technical Basics, Transmitters & Receivers and EMC. There is also a mix of practicals, including making HF and VHF QSOs, CW appreciation, station build, and antenna tuning. The week before the exam, there's a mock exam (with some cunning questions courtesy of Murray G6JYB), and a talk on the Essex Repeater Group. The new CARS Skills Workshop is a logical progression for our new M6s, ahead of their progression to Intermediate.

Good luck to our current candidates Chris, David, Denis, Dorothy, Ian, Lloyd, Sam and Wayne, who will be sitting their Foundation exam (using the RCF's new Optical Marking system) on Thursday the 13<sup>th</sup> of February 2014.

### **Upcoming training courses:**

- Intermediate: 13 March 2014
- Advanced: 1st July 2014 (Exam-only)
- Foundation: 4th September 2014
- Advanced: 30th October 2014 (Revision Course)

More details: [www.g0mwt.org.uk/training](http://www.g0mwt.org.uk/training)

**Pete M0PSX**



## Presidential Jottings

Those members that attended last month's meeting were treated to a very interesting talk on remotely operating your amateur radio station. From a personal point of view, the care and attention that had to be paid to operate within the current licence conditions was an eye opener. The time which had to be spent giving consideration to the "what if scenarios" and finding workable solutions using various black boxes and cards gave the talk a great technical edge. Thanks to John for driving down from Suffolk to give us that most interesting talk.

By the time this is published the RNLI SOS week will have either passed or be well underway. At very short notice several members have found a relevant site, the Marconi sailing club on the River Blackwater, and have put a station with an operating team together so that CARS could participate. Thanks to all those involved, I hope you all had a great time and well done in putting CARS on the map.

I spend a lot of my time listening on the bands and HF conditions have been quite good with the raised sunspot numbers and solar flux. Some physicist have been quoted as saying that not only the sunspot numbers have to be large but the surface area is a factor leading to more ultraviolet arriving at the ionosphere, thus enhancing HF conditions. Enjoy these conditions whilst they are there before we decline into the doldrums again!

For those of you that are interested in chasing DX stations for awards etc. a good source of information is the 425 Dx Newsheet which can be found at [www.425dxn.org](http://www.425dxn.org).

**Carl, G3PEM**

## Aerial Tuning Aid

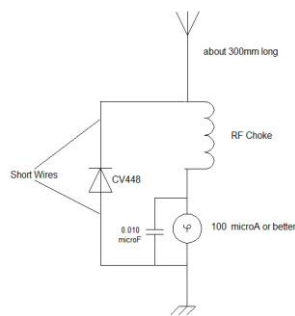
This is a very simple, but useful device, to aid tuning, of any aerial.

The components required are

- 1 x 100  $\mu$ A moving coil meter
- 1 x r.f. choke
- 1 x CV448 diode
- 1 x 0.01  $\mu$ F capacitor

Feed-through insulator to enable connection of a short stiff bit of wire about 300 mm long (the pick up aerial).

Start with the meter and connect the capacitor across its terminals. To the **+ve** terminal of the meter connect one end of the r.f. choke. Connect the other end of the choke to the feed-through terminal. To this same point, on the feed-through terminal, connect the negative terminal of the



diode. The other side of the diode is taken to the case metalwork. The **-ve** terminal of the meter is taken to the same metalwork point,

To tune any aerial. With rf going up the aerial, place the meter so that its deflection is about halfway across the dial.

Let's suppose we are tuning a vertical whip. With a bit of string tied to the top of the whip pull it out of the vertical position. That is to say, you are increasing its capacity to earth by reducing the thickness of the dielectric (the air space between it and the ground). If the deflection decreases it means that the aerial is too capacitive and you need to add series inductance or reduce the aerial capacity; which can be done by reducing the height (length) of the whip.

If the meter reading increases when you pull the top of the whip then the reverse of the above applies, i.e. extend the length of the whip or take out a bit of the series tuning coil.

**Geoff G3EDM**

## And Finally:-

### • An Explanation of Radio

I am often asked how radio works. Well, you see, wired telegraphy is like a very long cat. You yank his tail in New York and he meows in Los Angeles. Do you understand this?

Now, radio is exactly the same, except that there is no cat."

*Attributed to Albert Einstein*

**Closing date for items in the next Newsletter – Wednesday 19<sup>th</sup> February.**

**Remember, any articles you feel may be of interest to members are welcome as are details of items for sale or wanted. Send to [cars.editor1@gmail.com](mailto:cars.editor1@gmail.com).**



**Net Controllers are needed for April and August 2014. Volunteers please.**

- **An interesting link from Peter, G3SUY to an archive copy of the 'Marconi Calling' website.**

<http://markpadfield.com/marconicalling/museum/html/archivehome.html>