



Chelmsford Amateur Radio Society

Newsletter

August Meeting

Tue 6-Aug-2019, 7:30-10:00pm
Danbury Village Hall

Constructors Competition

By CARS Members

The August meeting features the annual Constructors Competition - with cash prizes !

Prizes are awarded for 1st, 2nd & 3rd -- and Best Newcomer. Cash is presented on the night, whilst the certificates will be presented at the AGM

The only real Rule is that it must be electrically SAFE.



A Previous Winner!

Please Note: Venue is Danbury

- as Oaklands Museum is unavailable in August

The famous CARS Raffle and refreshments will feature too!

Volunteers Needed: The CARS AGM in October will see our Treasurer retire. Please do think about stepping forward whether it be for that or other roles!

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Club Diary

Tue 6-Aug-2019	Constructors Competition – with cash prizes!	Danbury Village Hall, 7:30pm – not Oaklands!
Tue 3-Sep-2019	Life as a Radio Officer, Dave Ellis G4AJY	Chelmsford – Oaklands Museum, 7:30pm
Tue 1-Oct-2019	CARS AGM	Chelmsford – Oaklands Museum, 7:30pm

Club Nets

CARS meets for talks/events on the first Tuesday of the month. The subsequent Tuesdays have club radio nets as follows:-

- 2nd Tuesday in the Month – VHF**
 The CARS VHF FM Net uses GB3DA from Danbury starting at 8pm (local).
 GB3DA is 145.125MHz Input and 145.725MHz Output - and CTCSS-only (110.9Hz), 2min timeout
 If for any reason GB3DA is not available then 145.375 Simplex will be used. Vertical aerials are best for this
- 3rd Tuesday in the Month - UHF**
 The CARS UHF FM Net uses GB3ER from Danbury and starting at 8pm (local).
 GB3ER is 434.675MHz Input and 433.075MHz Output - and is CTCSS-only
 Vertical aerials are best.
- 4th Tuesday in the Month - HF**
 The CARS 80m Net on "3756kHz" Night, SSB and starting at 8pm (local).
 Horizontal aerials are best. The idea is to enable distant CARS Members to join the Net.
- 5th Tuesday in the Month (when there is one!) - MF**
 This is the CARS Top Band Net on 1947/1950 kHz +/-QRM, LSB and starting at 8pm (local).
 Horizontal aerials are usually used for this Net. A reminder - limit your power to a max of 30 Watts, please.

Training & Exam Dates

Our training pages have sessions listed for Foundation, Intermediate and Advance.

As you can read in this edition, the past year has been busy for especially for Foundation and Intermediate training – a short break will enabled us to revise material for the new RSGB 'Syllabus-2019' which comes into effect on Sept 1st

Our training manager Peter M0PSD is always keen to hear from candidates for the courses, as well as any needing practicals or other help. An update to the training calendar will be published shortly but we already have a few exam slots inc the December Full exam below. See later for September CW Classes too!

Course	Dates	Comment
Full-24E	Thu Dec-5 th	Full - with opportunities of mocks and others before

Contact: Peter Davies M0PSD, training2019@g0mwt.org.uk Web: www.g0mwt.org.uk/training

 Follow @TrainWithCARS

July Meeting: Three Short Talks

The July meeting featured the CARS 'Three Short Talks' format for a real variety:-

- OFDM and All That – Phil Pearson G0UIB
- Wire Aerial Construction – Tony Gilbey G4YTG
- 100 Years of Amateur Antennas – Elaine Richards G4LFM

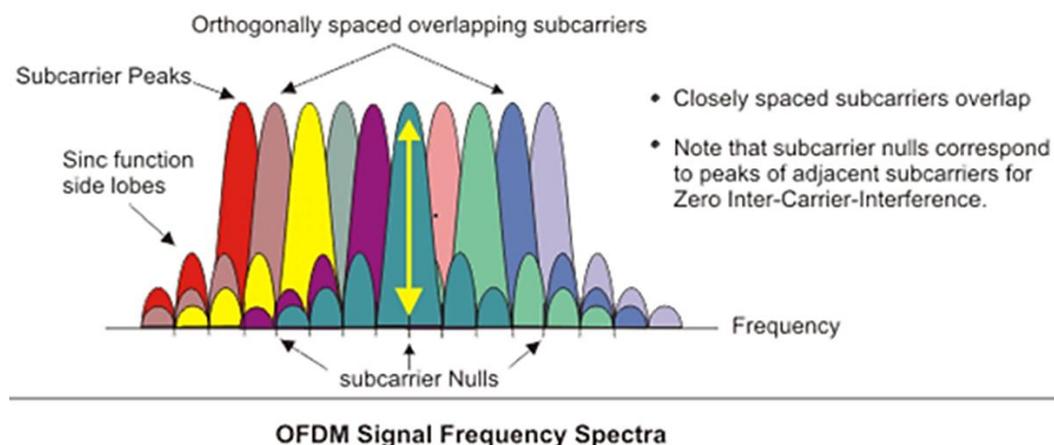
OFDM – Phil Pearson G0UIB



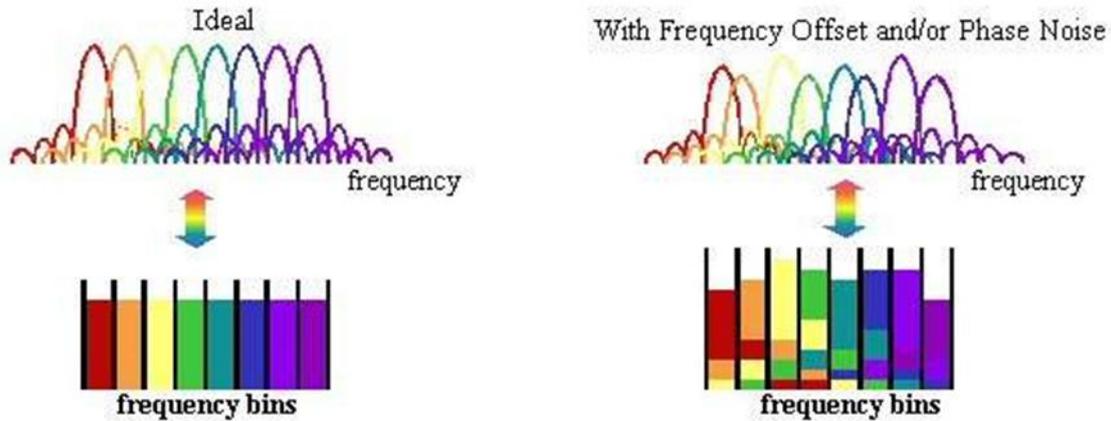
The evening started with one of the most well animated slide sets ever presented at CARS as Phil explained all about OFDM. This started with how a series of sine wave harmonics can add up to create a square wave, as well as how their phase relationship can be 'orthogonal' (out of phase). Multi-carrier frequency multiplexes are the basis of a raft of datamodes from FreeDV to ADSL, 4G-LTE/5G, DAB/DVB and more recent Wi-Fi standards.

The basic scheme in most OFDM uses relative slow symbol rates (sometimes just QPSK) on lots of separate but close-spaced carriers (with plenty of error correction spread across them as well), making them relatively to synchronise and resilient to multipath and transient interference.

Creating or receiving these in a radio uses a technique that goes back to Joseph Fourier (of Transform fame) in the 19th Century, but its only the advent of modern DSP that make it so practical. Spectrally it looks like this:-



In practice the ideal waveform can be affected by non-linear PAs, poor frequency sources (with phase noise), Doppler as well as differential fading etc. In the worst case, the decoding process may get data from the wrong carrier as illustrated below.



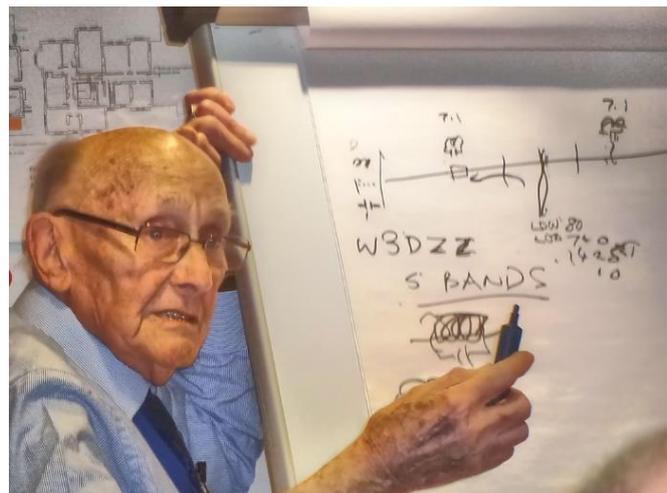
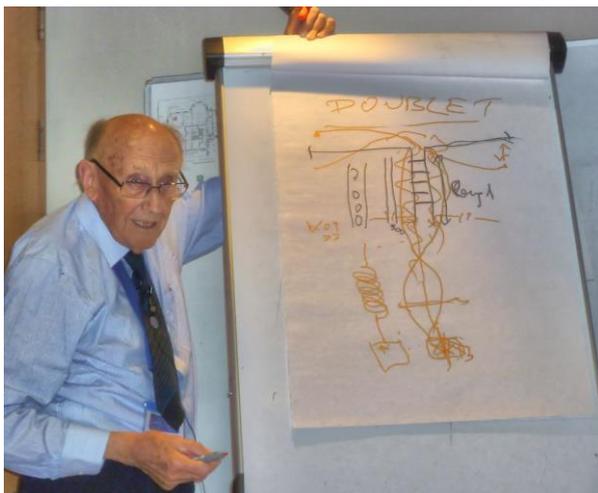
OFDM Signal reception can be impeded by frequency offsets and phase noise

Wire Antennas – Tony Gilbey G4YTG

Next was a wire antenna tour with Tony G4YTG, CARS (and former BT) antenna expert.

No Powerpoint for this one – out came pen and paper!

Tony illustrated volts and current on some common antennas including the the Doublet, W3DZZ 5-band trap dipole, and the famous G5RV.

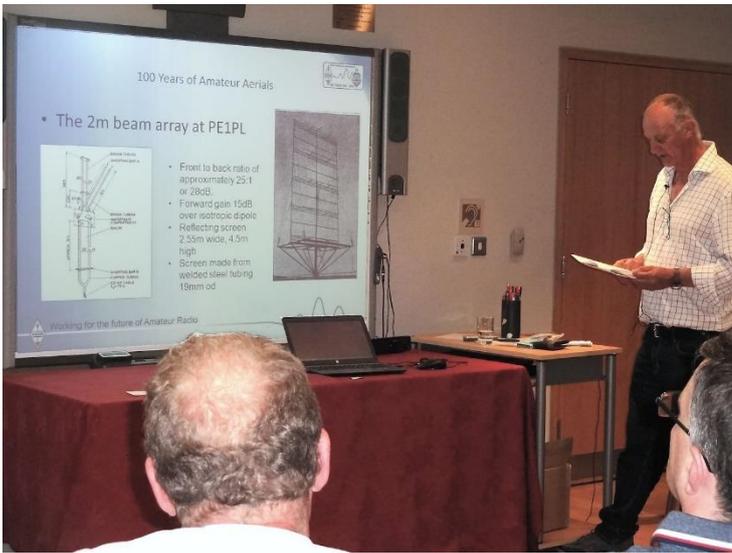


Tony G4YTG with freehand drawings of how various antennas work

Our thanks to Tony
– and for the handy paper and coloured markers!

Cont'd/

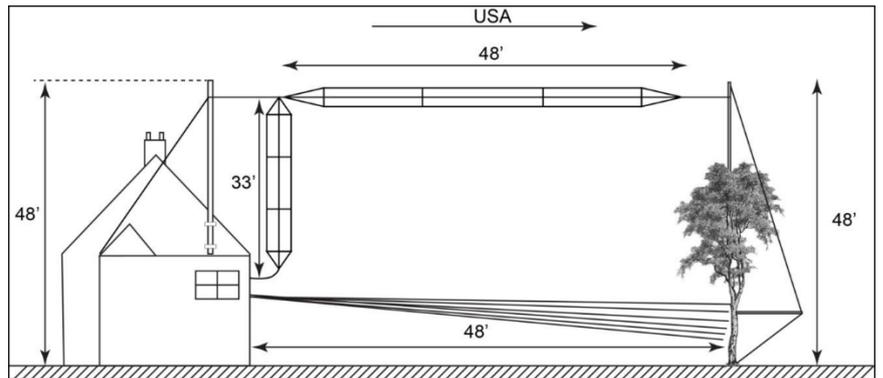
100 Years of Antennas – Elaine Richards G4LFM, RSGB



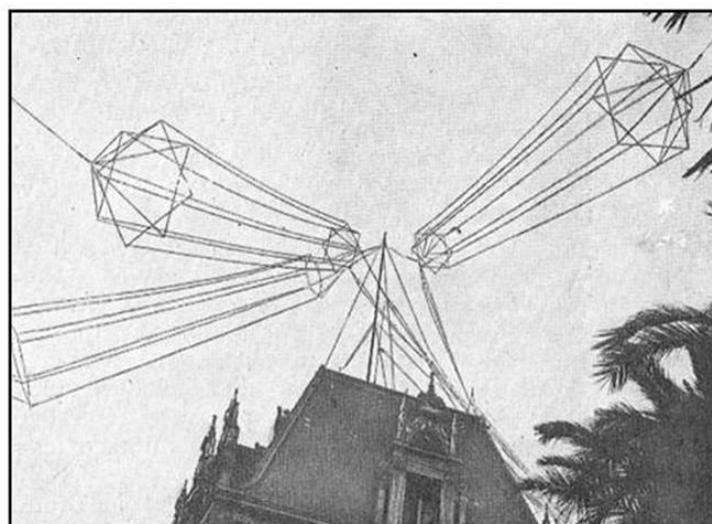
Finally after the break it was ‘100 Years of Amateur Aerials’ by Elaine Richards, G4LFM, RSGB RadCom Editor & Archivist which is one a set of talks originally created for the RSGB centenary.

Bob G4MDB kindly offered to read the presentation notes for a fascinating series of slides from the start in Marconi days when wavelengths were rather longer and ‘fat dipoles’ and groundplanes were even more important than today.

As the slides moved on to more recent years the G5RV, VHF and PW 10 GHz antennas all featured.



The shack and antenna system for Ernest Simmons 2OD, Acton 1912, for 1000m / 300kHz



France 1922: Fat caged dipoles for 3MHz (100m) used by Deloy

All in all a most intriguing trio of talks – our thanks to all the presenters!

– Photos by Murray G6JYB and Colin G0TRM

Autumn Morse Classes

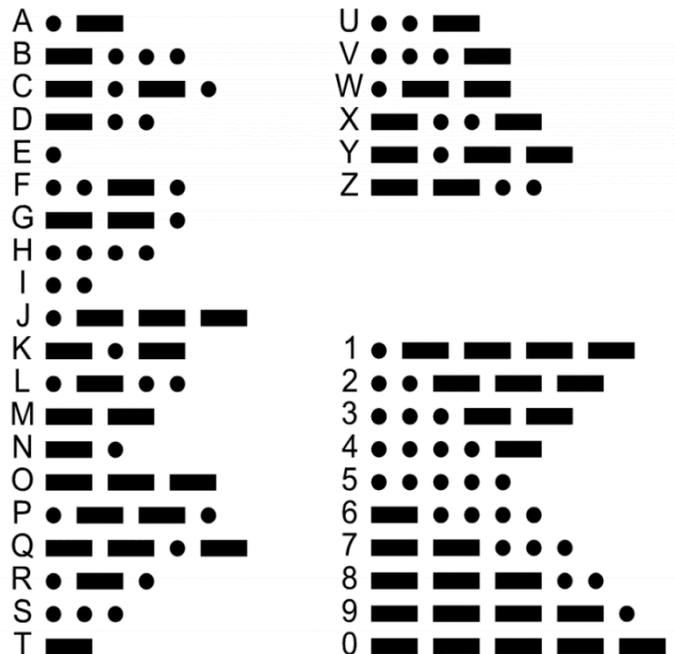
Following the summer break, Morse Classes will resume on Thursday evening September 5th at Danbury Village Hall and are planned to run for a total of 13 weeks until the end of November.

If you just want to refresh your skills, Danbury has a group of enthusiasts who will be pleased to help. If you just want a pleasurable evening with CW friends just come and join us for a fun evening, whenever it suits you.

Morse Code (CW) enables DX working at low power levels. Want to be proficient at Morse ?

Contact: Andrew Kersey G0IBN

T: 01621-868347, E: morse at g0mwt.org.uk



RSGB Cricket & NRC Updates

Cricket World Cup Radio Marathon

In addition to the cricket itself, the accompanying radio event was a phenomenal success:-

- QSOs including both GB19* and International call signs **440,442**
- QSOs for the 31 GB19* call signs **371,489**
- Unique call signs that appeared in the GB19* logs **44,774**
- UK and Crown Dependency call signs in GB19* logs **4,492**



National Radio Centre at Bletchley Park

The NRC continues to go from strength to strength.

Visitors in June numbered just over 9,000, almost 5,000 more than in June last year.

This gives a total for the first six months of 2019 of over **45,000**.



Training

Ahead of the new syllabus which comes into effect in September, CARS continue to take people through practicals and exams up to the summer break. The 11th July session was a busy one, with two groups of Advance (paper and online) undertaken in parallel with Foundation and Intermediates.

The latter are looking happy below. For Intermediate it included a further roundtrip from Wales for Chika (on the right) who resides in Pontypridd.



July-11th - Happy Foundation and Intermediates

Following the above we also had a smaller multi-level session on Thursday August 1st. Below are pictured Tarmo who scored strongly in his Foundation exam and Bogdam who did well in his Intermediate



Aug-1st - Foundation and Intermediate candidates looking pleased with their results – well done!

Training in Review: Sep-2018 – Aug-2019

Training this year has been hectic, but very successful.

Combining Foundation and Intermediate training on the same nights, we have managed to accommodate everyone who wanted to take their exams – from Foundation right through to Advanced, if that was the candidates wished. With exams and training on Skills Nights as well as Training nights.

A sterling effort has resulted in achieving:

- **23 Foundation,**
- **25 Intermediate and**
- **14 Advanced,**
- **Making a total of 62 passes** over the period and more still to come.

Several of these candidates, having completed Foundation thorough to Advanced, in a short space of time.

Some Candidates have travelled from far and wide, to achieve their goals:-

- South Wales, Sible Headingham, Croydon, Frinton on Sea...

This year also saw us undertake our first “On-Line” Exams. This gives candidates their indicative results almost immediately. Although some still prefer paper option.

I would like to take this opportunity to thank the Training Team and the 7 Invigilators, plus Rob & Dean from Essex CW club, who made all this possible.

Peter M0PSD, Training Manager



July-11th: Peter M0PSD (left) giving the pre-Exam brief with Dorothy M0LMR & Richard G7OED as invigilators

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