



Chelmsford Amateur Radio Society Newsletter

February Meeting

Tue 6-Jan-2018, 7.30-10pm
Oaklands Museum, Moulsham Street

RSGB Past Present & Future

By Keith Haynes G3WRO

The February meeting will feature a unique perspective by Keith Haynes G3WRO, RSGB Region-12 Manager.

Keith's presentation will centre around a little nostalgia from the early days of Amateur Radio & the RSGB - then moving to the current structure of the Society, and then a little vision for the future.

After the tea/break and our famous raffle we will also have....

Freeview Changes

John G8DET (see articles) will give a brief update on imminent Freeview changes to Sudbury and Crystal Palace in February/March. These may cause you to lose channels as their frequencies are altered to clear 700 MHz for the next generation of phones. It can challenge even experienced rf engineers!



See CARS at Canvey Rally !!

We have two tables – so...

Kit for club funds and helpers are appreciated

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Club Diary

Sun 4-Feb-2018	33 rd Canvey Rally	Paddocks, Canvey Island, 10;30am
Tue 6-Feb-2018	Meeting: RSGB Past Present & Future, Keith G3WRO	Chelmsford – Oaklands Museum, 7:30pm
Mon 19-Feb-2018	Skills Night	Danbury 7pm
Tue 6-Mar-2018	Meeting: Military Radios for Amateur Radio, Andy G1GKN	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 the 2018 sessions listed for Foundation, Intermediate and Advance.

Our training manager Peter MOPSD is keen to hear from candidates for the 2018 courses, as well as any needing practicals or other help. Note the new 2018 training email address – the 2017 is closed.

Our Morse Classes are continuing on Thursday evenings - Andy G0IBN is coordinating these as usual

Course	Dates	Comment
Intermediate-17	Thu Mar-22 nd – Jun-7 th	Places Limited – contact Peter !
Advance-21	Thu July 12 th (plus Jul-5)	Exam (optional mocks & Foundation/intermediate exams)

Contact: Peter Davies MOPSD, training2018@g0mwt.org.uk Web: www.g0mwt.org.uk/training

 Follow @TrainWithCARS

January Meeting: Antennas – Justin G0KSC

For the first CARS meeting of 2018 we were privileged to have guest speaker Justin Johnson G0KSC, antenna developer and founder of the highly successful InnovAntennas company. Justin came to talk to us about his recent developments with Stacking Yagis and modifying other traditional designs to get enhanced performance Logs, Quads and Multibanders. The meeting was very well attended with many visitors from other clubs.

He started by talking and illustrating the performance of standard design Yagis when stacked reminding us that the full doubling of the Gain cannot be achieved due to the relation of the feed matching and the need in a practical set up to have a reasonable bandwidth for it to be a useable antenna.

He had a 'what if' moment - 'Can I use the space between the units?'. He then experimented with some parasitic elements between them and was able to "tailor" the Gain, Front-to-Back and Bandwidth, reminding us that each can be optimised but at the risk of each other. Justin then told us about his multi-band Yagis, saying that pairs with third harmonic elements would not work properly and he would not make them, though he was often asked for them. (eg. 2m and 70cm). When using two bands or more Yagis, the stacking distance would normally be a compromise between the bands being only right for one. However Justin came up with parasitic elements in the space between, optimising two or more bands and enhancing the pattern (Gain and F/B) on all the bands without detriment to each other.



Further developments in this technique include single band stacked Quads with a reflector element between them attaining 11dB Gain and 22dB F/B.

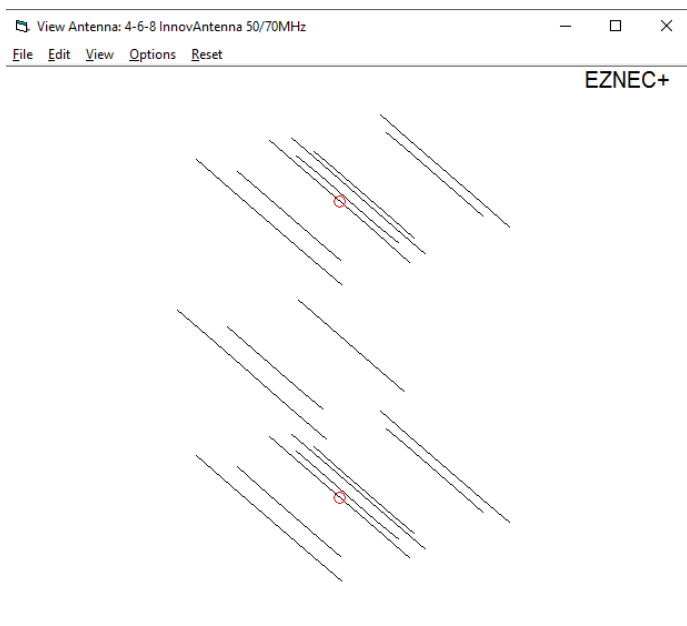
Log periodic antennas are traditionally wide band devices giving similar results on all the covered frequencies. Justin has produced designs which enhance certain parts of the bandwidth covered (Amateur bands) without much detriment to the remaining coverage by shifting lengths and spacings of the elements.

Justin asked for questions and said before we go there, the most common question I get asked is "Do I need a Balun?" He then explained that connecting an unbalanced feeder to a balanced aerial produced currents in the outer of the feeder which distort the radiation pattern of the antenna and make the feeder liable to receive or radiate unwanted signals (local int. for instance) or off direction signals.

One of the many questions from the floor was why do you always give gain figures as dBi (isotropic). He explained that isotropic was a theoretical, perfect omnidirectional reference, whereas a standard dipole for dBs does not exist – it would have to be specified with pattern direction, earth proximity factors etc.

Thanks Justin, keep it up! We need innovators like you in the antenna business, where most users regard it as a black art.

Tony G4YTG



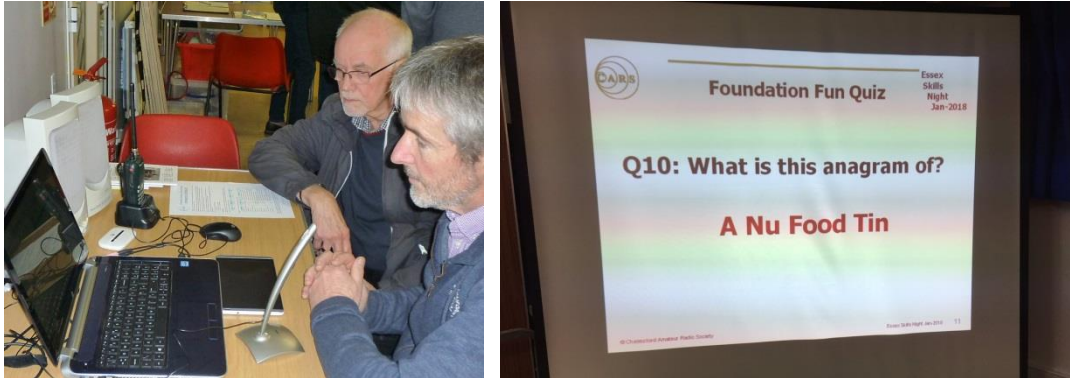
Use of Interleaved parasitic elements between stacked antennas



XR3-NV Tri-band Yagi and new optimised HF Log-Periodic

Essex Skills Night: January 2018

The first Skills Night of the year on the 15th January proved to be popular with over 50 people in attendance. Amongst the highlights was Jim Salmon 2E0RMI managing to get an EchoLink contact with someone 46,000ft in the air over Iran on a flight to Dubai. At a rather basic level, Murray managed to show Full Licence holders what they have forgotten with the Fun Foundation Course Quiz.



EchoLink: Jim 2E0RMI with David M1DCJ – and the Quiz anagram question

Members from a variety of Essex clubs were present. Skills regular Essex CW was in abundance with a full range of keyers, they managed to gather a crowd all evening. Representatives from Thames ARG had their details and on hand to answer any questions - and chocolates for all who wanted one. There were also representatives from SEARS, Thurrock Acorns and LEFARS.



Club tables - Essex CW table and Mark M0IEO with TARG information

In the top room Peter M0PSD (Training Manager) was in demonstrating how to solder a PL259 with his new piece of equipment (A Visualizer) as well as explaining to the Foundation candidates what to expect from the next Foundation Course. Jim and Glynis were doing a nice trade for callsign badges.



Also we would like to thank Myra and Ann in the Kitchen for the never-ending task of providing teas and coffees with home-made cakes from Ann. **NEXT EVENTS: Monday 19th Feb, 19th March, 16th April**

Chairman's Visit to DHARS



One of the many clubs in Essex is the Dengie Hundred Amateur Radio Society (DHARS), who used to host the inter-club Xmas Quiz. On Thursday 28th December I was picked up and taken to this small but exceptional club. I was made extremely welcome and was amazed by their set up.

They are a small club with around 12 members, but have a superb shack with all the necessary radio and Antennas to transmit and receive. Everything is in place - Wi-Fi, Windows 10 PC, and critical equipment such as the kettle and a microwave for heating food.

After an excellent few hours talking to some of the members, I was brought back home. One day my dream is for CARS to have their own transmitting and receiving shack. Let's try to catch up - we can do it!

Peter M0PSD

Freeview Retune - TV Aerials!

As per Murrays previous Freeview talks, a second Digital Switchover is underway that will clear 700 MHz and cause issues for HD and eventually older Freeview TVs. There are imminent frequency changes to TV frequencies from Crystal Palace (London) and Sudbury (Anglia). Chelmsford is around midway between these two, so that depending on your actual location you may enjoy programmes from either or both.

Personally I like the Sudbury News reports but occasionally I enjoy London Live which uses TV Channel 8 from Crystal Palace Local Mux 29 and 538MHz until the 21st March 2018 when it changes to Mux 35 and 586MHz. This puts it towards the upper limits of the London Group-A aerial, so I wondered what a Group-B aerial would respond like?

As I said in the CARS Newsletter in June, all my TV aerials are in the roof, so choosing a day not too cold I swapped the Group-A for an 18 element Group-B Yagi. Overall not a good move! Mux 22 signals fell the most as it is at the lowest frequency edge, falling from typically Quality 5 to 2 and Strength 3 to 2 - and now producing slight picture breakup. The rest of the London coverage was poor compared with the Group-A aerial, but I found it surprising how good a picture could be obtained from a poor signal.

Having connected a Group-B aerial, I reversed its direction, retuned the TV and was surprised at what good reception I got from Sudbury on Mux 41 and 44 with Quality 10 and Strength 5 (the TV I was using did not have a HD Tuner).

I changed back to the Group-A Aerial and thinking of something I read online, I repositioned this so that it "looked" through the roof to London instead of the end wall of the house – wonderful! Everything came up many points with solid picture quality.

I do not know what I can do after 7 March 2018 as the rearranged frequencies seem to penalise the HD Mux signals. Using Wideband Aerials aimed at Sudbury, in theory seems not on – their gain is quite low (at least 3dB down on a Yagi) and it could easily pick up the 4G/5G Cellnet interference.

After 21st March 2018 the Crystal Palace HD frequencies move out of the frequency range of a Group-A Aerial right up to Mux 55 & 56. Unfortunately a wideband Aerial has such poor gain it could result in picture breakup – something you do not want on HD pictures.

Anyhow there was a very interesting Amateur Radio point – if you use directional aerials in the roof – aim them through the tiles - not an end wall !

John Bowen G8DET

Colin Page G0TRM: Marconi, CARS and all that!

In 1992 I took the RAE passed with credits and as I had previously studied radio and electronic principles during schooling and my Marconi apprenticeship that was the easy part, the not so easy part was the 12 words a minute Morse test which I passed at the London Electronics show in early 1993. Later I became G0TRM one of my several requested call signs. By that time, I was a member of CARS having been introduced to the Society by fellow members at Marconi, I was asked to join the Committee and for some years helped Geoff Lovegrove KLV produce the Newsletter, later taking it over.

In 1994 I took on the assistant Secretary's post, later becoming Secretary in 2007, a position I still hold. Duties include taking, writing-up and distributing the Minutes of Committee meetings; Contacting potential speakers for Club nights and arranging dates for them to visit; Producing and distributing an Events Programme covering most of the Club's activities and composing the club profile for the Year Book.

I also produce the Award certificates for the Constructors Competition and for Amateur of the Year and other Specials as required. AS secretary, I answer or respond to various incoming emails to the Society. Another thing is that I generally organise the CARS annual tabletop sale and for some years have booked (and with others have manned) the tables at the Canvey rally, last year with Steve Webb G4GHO.

I had an interest in all things electrical and mechanical from an early age having been encouraged by my father, himself a SWL and constructor. I remember for an early birthday present on one occasion I was given a buzzer and a Morse key. It sparked an interest that has lasted all my life; I might still have that key somewhere along with some 50 others, a fact one or two people may know about. It may also be known they are not heard much on air, but aired in other ways, such as Sandford Mill Open Days, Hall Street and elsewhere. HF operation appeals to me and I enjoy special event station activity. I still appreciate and am happy to receive printed QSL cards. On occasions I host the CARS Tuesday evening Nets during which some good contacts have been made on the HF bands.

I attended a Technical College leaving at 16 to become an apprentice Instrument Maker at Marconi's which entailed a long journey from London to Chelmsford and an early start. At the end of my five year apprenticeship I was working on Government work, so my National Service was delayed for two years. When I eventually served, it was as a J/T Ground Wireless Fitter in the Royal Air Force. After training at Compton Bassett in Wiltshire, I was sent to Scampton in Lincolnshire, home at that time of 617 Dambusters Squadron then composed of heart stirring Vulcan bombers.

On my return to Marconi I passed through an assembly and other sections before joining the receiver test department, later moving for 10 years to Mobile Radio Division at Beehive Lane, eventually in charge of the test department there. It was then back to New Street main works to join HF Communications Division as a systems engineer, involved with long range HF communication links. I was lucky enough to travel for the Company on business visiting Algeria, Denmark and America. I also spent two occasions in Oman living under canvas in the desert maintaining a Triffid radio network during Omani military exercises. One advantage of the system meant amazingly we were able to dial home from our campsite on a standard telephone at the end of three hundred yards of D10 cable, emanating from the final link in the chain of Triffid stations leading back to Muscat the capital. I also travelled in the UK visiting Navy radio stations and shipyards repairing Marconi equipment as and when required. During the last two years or so of my life at Marconi, time was spent involved as part of a team working on two Frigates for the Malaysian Navy at the BAE shipyard in Scotland, setting to work all the radio and internal communication systems designed and built in Chelmsford,

My wife Joan and I have been married for 51 years and have lived in Danbury since 1967. We have two children Richard and Liz. They have given us five Grandchildren, three of whom at the moment reside in Singapore with Liz and her husband. We have visited them a couple of times and can speak highly of the country and its modern outlook.

Colin Page G0TRM, CARS Secretary

2018 Training Gets Underway!

The 2018 training year has got underway with a busy Foundation Course-37. The candidates range from brand new - to qualified engineers. Our best wishes to them all.



Foundation Course-37 Practicals underway on the first evening – Thursday Jan-18th

Help Still Wanted !!...

- **Newsletter Editor**
- **Newsletter Items**
- **Help/items for Canvey Rally**



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