



Chelmsford Amateur Radio Society

Established 1936

Affiliated to the RSGB Club Call Sign: G0MWT
President: Harry Heap G5HF Chairman: John Bowen G8DET
Treasurer: Brian Thwaites G3CVI Vice Chairman Martyn Medcalf G1EFL



Newsletter No 527

Web Address: www.g0mwt.org.uk

February 2010

This Month's Meeting – Tuesday, 2nd February. 7.30pm at the Marconi Club.

"The LFA (Loop-Fed Array) Yagi"

By Justin Johnson, G0KSC.

Justin will give a brief overview of the traditional Yagi and its shortfalls. Then move on to the benefits of the LFA and give some practical build advice. Following this he will introduce Members to a new Yagi style that he has just developed. This will appear in QST and DUBUS magazine a little later this year.

In summary, the LFA is a very low-noise wideband antenna. It exhibits the performance properties of a low impedance antenna while maintaining the bandwidth and feed-point impedance of a traditional OWA (optimised Wideband Array) Yagi.

Justin has a number of UK, European & US manufacturers producing his designs so we are fortunate to hear about them early.

CARS will have its now famous Raffle with at least 10 prizes.

Dates for your Diary

Sun 7 th February.	25 th Canvey Island Rally – 10 to 4pm. Look out for items to sell to bring along. CARS have ordered a Table but only "DIY Selling" this year due to lack of equipment.
Tue, 9 th February	CARS VHF Net on 145.375MHz
Wed, 10 th February	CARS Committee Meeting – Danbury Village Hall – 7.30pm. All welcome.
Tue, 17 th February	CARS UHF Net on GB3ER – The Danbury 70cm FM Repeater
Tue, 2 nd March	CARS Meeting – "London Underground Modernisation" by Mark, M0IEO. Rescheduled from CARS January Meeting due to poor weather conditions.
Sun, 7 th March	CDARC Rally Cambridge
Saturday, 24 th April	CARS – International Marconi Day at Sandford Mill, 10am to 5pm.

To be/remain a Member of CARS, send a Cheque for £12 – 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 2nd class stamp.

Our Treasurer, Brian notes that with the snow and ice and cancelling the January Meeting a number of Members have not had the opportunity to pay their Subscription this year. Please remember to bring your Cheque Book – yes, cheques are still legal tender!

Thanks to Geoff, G7KLV for sending the postal Newsletters – could it go by E-Mail? Please inform Geoff, G7KLV by E-Mail of any changes to your call-sign, postal or E-Mail address, etc. E-Mail him on g7klv@g0mwt.org.uk Only by you sending Geoff your E-Mail address, can we ensure WE get it right!

Club Nets: Tuesdays 8.30pm: (2nd) 145.375: (3rd) GB3ER: (4th) 1.947/50: (5th) 28.375. All MHz +/- QRM. Net Controller for February is Harry, G5HF. Thanks to Colin, G0TRM for doing it in January.

Last Months Meeting:- “London Underground Modernisation” By Mark, M0IEO.

Unfortunately this was postponed from the 5th January to the 12th due to bad weather which continued such that the 12th meeting was cancelled. It has been rescheduled for Tuesday, 2nd March.

CARS Committee is very sorry to have to have done this but as Mark said “I would have not been happy to have heard of anyone breaking a bone coming or going from my Presentation.

CARS Committee rang all those Postal Members who it was thought may come and E-Mails were sent to all those with current addresses. The CARS Web Site was also plastered with the Postponement & Cancellation information.

CARS Committee was very sorry to hear that a small number of people actually did turn up on the 5th only to find it had been postponed. Most of these, it is understood, were visitors interested in railway engineering and not known to CARS.

A Quick Guide to RF Cables, Connectors & Tooling by Dick G4DJC.

Note, most Amateur Radio cables and connectors are 50 Ohm but if you meet a “thinner” inner pin then this will be 75 Ohm. A 75 Ohm plug will often fit into a 50 Ohm socket but the other way round is a DISASTER! It splits the 75 Ohm centre connector and makes it totally useless. Be warned.

1) PL-259

The most common RF connector, Radio Amateurs are most likely to encounter is the “1930s Amphenol UHF Connector” PL-259 plug and SO-239 socket. It is 50 Ohm and designed for 10.3mm cable such as URM67, RG213 etc. There are cable reducers available to enable the use of 5mm cables, RG58 etc, but these should be avoided if possible, much better to use custom 5mm cable entry types. Most of the standard 10.3mm types I have come across from various sources seem to be cheap inferior quality ones targeted at the CB market. The better and the only ones I use are the high quality version from WH Westlake as they are manufactured to a higher standard which makes fitting the cable much more reliable.

An excellent alternative to the standard PL-259 is the Pressure Sleeve (PS) type available from WH Westlake, ML&S, W&S etc although being a bit dearer they are easier to assemble, requiring less complex soldering.

A “Banana Plug” will fit into the socket.

2) BNC's

Generally, the only ones you are likely to come across are designed for 5mm cables and are all made to a similar standard. The only difference being the assembly inside the body re the clamping and insulating washers. There are 10.3mm cable types available but not too common. Available in 50 and 75 Ohm.

3) TNC

Similar to BNC but threaded not bayonet, usually only found on professional commercial equipment. Rarely found on amateur radio gear. Available in 50 and 75 Ohm.

4) N Type

A higher quality/spec connector for VHF and UHF use. Again, versions are available for both 10.3mm & 5mm cables. Available in 50 and 75 Ohm.

5) Cables

There are too many variables on cabling to be specific but generally speaking, for patch leads in the shack at exciter power level or Receiver use, any 5mm variant(RG58/c/u UR43) should be sufficient. For medium long feeder runs at HF any 10.3mm type should be OK. For VHF and UHF medium long runs, Westflex103 should ensure low losses. For really long runs or qro+ (sadly not applicable for most of us!) then Andrews Heliax LDF 4-50 or LMR400 has to be the cables of choice. *Note; Heliax should never be used up a telescopic tower as it will kink.* It should be joined at the base using a suitable waterproof housing & a flexible type ie RG213 run up the tower. Good for fixed guyed towers though.

6) Tools

There are a few basic tools needed for fitting the above cable/connectors. Although a normal mains pencil type soldering iron will just about be good enough for the pins on a BNC or N type, trying to fit a PL-259 with one will guarantee a lovely dry joint! It just won't be hot enough, a TCP iron is essential. I use two Weller TCP irons with different bits for convenience. A 150mm rule, a scalpel or a craft snap off blade knife is very useful and a good pair of side cutters (Lindstrom (ex BT) are hard to beat) along with a small pair of scissors which will be needed for trimming the braid. The actual fitting of different connectors is beyond the scope of this article. However cutting/stripping details and dimensions can be found in various publications and CARS Training Web Site, ARRL and RSGB handbooks etc.

Dick, G4DJC.

Thanks for that Dick – makes a good introduction to Justin's presentation where coaxial cables will be used.

Micro Direction Finding

It was announced in the January Newsletter that Roy, G4JAC was going to present a Micro Direction Finding Event on Sunday 8th August, 2010 at Sandford Mill.

Unfortunately we now know that Sandford Mill will NOT be open during August Afternoons.

Watch this space for further announcements.

DJ8UF Calling from Germany

The report of the previous Meeting on DF caused memories to flood back to one of CARS German Members, Jim, DJ8UF. joachim@walke-hdh.de

DF Accidents.

Reading about accidents in DF made me smile a bit, because things seem to happen to other Amateurs too, though when it occurred to me I was not amused.

Some years ago there was that big Southern German DF competition in our area. My fellow Club members had done the 80m part, so nobody wanted to do 2metres. So they picked me to run for them, and I almost felt obliged to do so "for the honour of the Club". I got some unknown gear given by someone and off I went.

Things went fine at the beginning, I found 2 transmitters, but then I saw that little branch lying on the lane, and instead of stepping over it I tried to push it aside.

The problem was its end was solidly anchored in the mud, it did not yield at all, and because I was running, I went full tilt to the ground.

I thought all my ribs were broken, but I only had some bad bruises and the radio seemed to have survived too (what a relief!). I slowly recovered, carried on, but needless to say that I was disqualified for exceeding the time limit, and I was a shame to my local club, hi.

We had great fun with DF at school, however, when demonstrating Amateur Radio at the end of the year in Project Week. The kids liked that most of all I think.

My "micro transmitter" consisted of one of those 36 MHz crystal oscillators from a computer and a coil tuned to 144 MHz across its output together with two 50cm bits of wire as a dipole. The children hid it in the weirdest spots (garbage cans, girls' toilet etc.) but we always found it again, even myself, and I never got trapped in a little branch again.

Happy New Year to all of you (and 73 to Roy!)

Jim, DJ8UF

January Radio Sport (Contests) All in UTC.

- 01 February** - RSGB Club - SSB - 20:00 to 21:30
- 07 February** - 432MHz AFS - 09:00 to 13:00
- 10 February** - RSGB Club - DATA - 20:00 to 21:30
- 13/14 February** - CQ WW WPX - RTTY - 48 hrs
- 18 February** - RSGB Club - CW - 20:00 to 21:30.
- 20/21 February** – ARRL DX CW 48 hrs
- 27/28 February** - CQWW 160M - SSB - 48 hrs

For further information please email Steve G4ZUL contests2009@g0mwt.org.uk

Steve, G4ZUL, CARS Contest Manager.

Radio Path Predictions – February.

Gwyn, G4FKH was requested at the November Meeting to provide an "Only to CARS" Propagation Prediction. Thank you Gwyn.

Asia: Dhahran - around 14:00 on 21.0MHz for 88 percent of days, with poor signals.

Oceania: Sydney - around 16:00 on 7.0MHz for 62 percent of days, with poor signals.

Africa: Johannesburg - around 20:00 on 10.1MHz for 83 percent of days, with poor signals.

S. America: Caracas - around 08:00 on 10.1MHz for 68 percent of days, with poor signals.

N. America: Halifax - around 20:00 on 7.0MHz for 79 percent of days, with poor signals.

Comments are welcome. Please E-Mail Gwyn at: g4fkh@btinternet.com

Gwyn, G4FKH

CARS Radio Nets

After the CARS Meeting on the first Tuesday in the month, CARS has a Radio Net on each of the remainder Tuesdays in the month.

2nd Tuesday is VHF on 145.375MHz.

3rd Tuesday is now on GB3ER

4th Tuesday is HF on 1.947MHz

5th Tuesday (when there is one) is 28.375MHz.

Additionally, Steve is running a CW Net on the 2nd Tuesday of each month on 3.545MHz but starting earlier at 8pm Local.

Steve says that it will NOT be a "high speed – I can send faster than you" Net but to encourage CW.

John G8DET.

Training Courses

CARS run courses for all three levels

The current Foundation Course (CARS landmark 21st Course!) started on 14th January 2010.

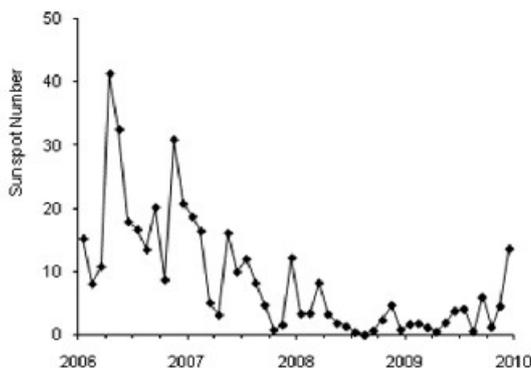
An Intermediate Course starts 18th March, 2010. If you would like to attend this, please contact Clive G1EUC below.

More details are on our Training page: - <http://www.g0mwt.org.uk/training>

Tel: 01245-224577 Mob: 07860-418835
E-mail: training2009@g0mwt.org.uk

Increase in Solar Activity.

Sunspot activity in December 2009 was the highest for two and a half years (since June 2007). My average sunspot number (the monthly average of the number of sunspot groups plus 10 times the number of sunspots on each day an observation was made) for December was 14. The plot shows my monthly averaged sunspot number since the start of 2006. As can be seen, solar activity was particularly low during most of 2008 and 2009.



Although the December sunspot number was still quite low, five different groups were seen during the second half of month with two of these appearing for more than just a few days and being quite complex in nature. This increase in activity has continued into January although to a lesser extent as only two groups being seen so far (up the 16th January). Whether this increased activity is the first signs of an upward trend towards the peak of the next solar cycle remains to be seen.

Peter, M0ZBU

RSGB – Mixed Items

Region 12 Club Competition.

John, G8DET prepared a Draft RSGB Region 12 Club Competition entry which was commented on by Trevor, M5AKA and Colin, G0TRM and passed to Murray, G6JYB for final editing. Snow & ice came

onto the scene such that Murray only had the last day to look at it – he finished and submitted it at 11.45pm – Midnight being the closing time – is that cutting it fine or what.

It gives me great pleasure to inform you all that CARS was selected as the Winning Entry.

http://www.rsgb-region-12.org.uk/news.php?news_id=507

Thanks to all Members who supported CARS during 2009 and making our entry possible.

Region Liaison

The RSGB have elected our Region 12 Representative, Phillip Brooks, G4NZQ to be a Board Member with sole responsibility for increasing the Society's membership. Congratulations Phillip.

RSGB Essex Vacancy

There is a vacancy for the voluntary post of RSGB Deputy Regional Manager covering Essex.

James, M0ZZO from Colchester did a sterling job for a number of years but has had to give it up to concentrate on his own business.

For further information contact
The RSGB Regional Manager Phillip Brooks G4NZQ
Telephone: 01603 250639
Email: g4nzc@rsgb.org.uk
http://www.rsgb-region-12.org.uk/team.php?team_id=124

John G8DET.

Remote HF Receiver on the Internet

The website below is very interesting from the University Twente in Holland. When you browse through the site you will see that they have been working on this Receiver for eight years or so. Various hardware pictures illustrate the development of the present receiver. The receiver is, of course SDR, and covers the whole HF spectrum up to 30 MHz. Have a look at the Waterfall Displays.

<http://websdr.ewi.utwente.nl:8901/>

Geoff G3EDM

CARS 2009 DVD

A very limited number of copies of the CARS 2009 DVD will be available at the February meeting. It contains CARS pictures, videos, newsletters and other memorabilia from the past 70 years.

Trevor, M5AKA

Chain Home Radar Commemorative Event

Murray, G6JYB is arranging for a CARS Special Event Call-sign, possibly, GB75CH to be "On Air" from Thursday, 25th February, possibly for a month using aerials draped from the big mast at Great Baddow.

This is to commemorate 75 years since the Daventry Experiment by Sir Robert Watson Watt saw the birth of British Radar that proved so vital to the RAF in 1940. The event is being coordinated with GB75RDF at Daventry and GB75BRS at Bawdsey. The Great Baddow Labs were also involved with production of the Magnetrons used in WWII Radars, and E.K.Cole (EKCO) in Southend also did radar equipment.

HF and VHF are expected to be used. E-Mail details will be circulated later but if you would like to be considered to operate from the site – put your name forward at the February Meeting.

<http://www.chainhome.org.uk/>

Murray, G6JYB.

Winter Maintenance (Additional Comment)

Continuing CARS series for Foundation Pass Members and a reminder for all.

Mark wrote last time:-

Guy Lines

When was the last time you looked at the condition of your guy lines? At this time of year the guy lines get wet and will hold water in the core of the rope for days, even weeks. This is true of all ropes whether made from hemp (not so common these days) or Polypropylene (Nylon), when the water inside the rope freezes, it expands which can cause premature breaking of the fibres in the core of the rope and unexpected failure.

Mark, M0IEO.

Ivan G4VAD has added the following words of wisdom. "I was amazed to see a reference in the Newsletter to "guy ropes made of Polypropylene (Nylon)".

Polypropylene rope is definitely not Nylon. The two are as different as chalk and cheese.

Polypropylene rope is cheap and cheerful and fine for the Wife's linen line as long as you keep an eye on it, but it degrades under UV light and loses its strength. Never use it for an important job like holding a mast.

Nylon is much more expensive and stretches, and is very suitable for anchor ropes and for towing. But if you are towing a car for example and it breaks then

beware because the energy stored in that stretched rope can do a lot of damage.

Polyester rope (Terylene or Dacron) is also more expensive and is used for hauling up sails because it can be bought pre-stretched. So I would have thought that was more suitable for holding up masts.

If you are using Polypropylene rope for anything important take it down and spend a fortune at the yacht chandlers on a more suitable replacement".

Ivan G4VAD

Compact Fluorescent Lamps (CFL)

The "new" bulb to light the shack and the house has been referred to a number of times in CARS Newsletters. It is rewarding to see the IET (formerly IEE) journal "Engineering & Technology" for 21st November – 4th December, 2009, page 18 has 4 pages on the same subject.

Interestingly it agrees with what CARS has been saying for years – much of which is in contradiction to Government policy!

Just about every Compact Fluorescent Lamp (CFL) packet sold in the UK has stamped on it the Government's quango, "The Energy Saving Trust (EST)" recommended 5.1 times the lamp's Wattage equals the equivalent to the traditional hot wire lamp, referred to as a General Lighting Service (GLS) lamp. This is a nonsense. Anyone can see that using this figure produces a dimmer illuminated area.

The dimness is compounded by the fact that the CFL starts up dim with the light output increasing during the first few minutes after switch-on. It is later compounded by the fact that slowly the light output drops linearly by 20% towards lamp failure unlike the GLS which remains pretty stable until failure.

Talking of failure, the press go on about the GLS lamp fails after 1,000 hours – indeed they do. If 100 bulbs are checked they will fail after 1,000 hours + or – less than 10 hours. This is achieved during manufacture by puffing a corrosive gas into the bulb before it is pinched off to ensure failure! 2,000 hour rated bulbs can be purchased but for more money.

Going back to the conversion factor, the EU "CFL Quality Charter" suggests working on 120% the light required (to compensate for age dimming) and then use a conversion factor of 4 times the Wattage. The American Lighting Research Centre, New York recommends 3.1 times the Wattage. This is a little bright so the writer suggests 3.5 times and has done so for 10 years.

This leads to a problem as an old 100 watt GLS lamp (1340 Lumens) cannot be accurately replaced.

A 23 Watt CFL equates to a 80 Watt GLS while the next manufactured size is typically 32 Watts which is 112 Watts and a fair bit brighter; 27 Watts is really needed but the writer has never found one.

The next factor to consider is the colour of the lamp output. Most CFLs are colour rated at 2,700 degrees Kelvin which in layman's terms is "dull yellow" or "yellow white". As reported previously the writer uses Androv lamps (now stocked by Amazon) with a colour rating of 6,000 K (Daylight) which some people think is a "bit white".

Radio Frequency radiation is another factor not mentioned by any of the manufacturers. It is thought that this was much more of a problem 10 years ago than now.

Running a series of simple tests, assuming a basis oscillator about 35 - 38kHz, 927kHz seems like the upper frequency but only a tiny fraction compared to that radiating from a 37" Plasma TV or BT's PLT.

Glass frailty is a major factor with the twisted pattern – one CANNOT hold the glass while inserting a CFL into a lamp holder – must use only its base.

CFL failure is another area not usually talked of – they are designed to fail in a pall of smoke which is intended to extinguish any potential flame. It is a pungent, powerful smell but it does work as a "fire extinguisher". If one is in the room when it happens – ventilate it well – the writer has no idea of its make-up!

September 2010 EU legislation will require Lumen Output, Colour Temperature in degrees K, Switching Cycles before failure, Life Time and Warm-up Times to be displayed on all CFLs.

For completeness the following are the normal descriptions for a given Colour Temperature.
2,700 K – Officially called INTERNA – the writer calls "Yellow White"

3,000 K – Warm White.

3,400 K – White – Typical fluorescent tube colour.

4,000 K – Cool White.

6,000 K – Daylight – Offices which are engaged in photography and G8DET's QTH.

6,400 K – Sunlight – Medical and colour matching.

John G8DET.

For Sale

Kenwood TS530P HF Transceiver with handbook and original microphone.

Will accept £250 cash or in part payment a Mobile HF Transceiver and part cash,
Reason for sale is the space is needed.

**Ken Pallant, G0OSI on
either 01376-334110 or 07800-501851.**

For Sale

Yaesu FT897D. immaculate condition, complete with microphone, manual etc, boxed.

Fitted with YF122S SSB filter. dust cover. LDG FT meter. Heil AD-1-YM headset adaptor. £550

Dick, G4DJC. g4djc@yahoo.co.uk

For Sale – Silent Key Sale for Widow

Yaesu FT 290R £150.00,

Yaesu NC11C Charger £20.00.

Gould Power Supply 15v 16A £40.00.

Microwave Modules MML 144/30AMP Linear Amplifier £ 60.00.

RS 3 3/8" speaker £10.00.

Kent Morse Key £40.00.

G.L.Benbow Radio Amateur Exam Manual. £5.00.

Martyn, G1EFL. Tel. 01245 469008.

Oaklands Museum

The Mayor of Chelmsford invited Chairman John, G8DET and Pauline to the Re-Opening of the Oaklands Museum on Friday, 22nd January. A number of CARS Members were also in attendance.

The £5million extension is to a very high standard and well built.

The Foyer houses the 30kW Transmitter from Sandford Mill and three Receivers. Models of Marconi Radar are in nice plastic housings with a "story" alongside. There is also a replica section from the 450ft mast from New Street, as well as the Luftwaffe model of the New Street works .

Well worth a visit – better car parking now.

John G8DET

And Finally:-

John G8DET edited this edition. Material by; Geoff, G3EDM; Trevor M5AKA; Steve G4ZUL; Mark M0IEO; Martyn, G1EFL; Gwyn, G4FKH; Ken, G0OSI; Ivan, G4VAD; Jim, DJ8UF; Dick G4DJC; Peter. M0ZBU & Clive, G1EUC.

Items for the next Newsletter, including your experiences with your latest rig or antenna, tips on working DX, or your latest project, to be sent to the editor@g0mwt.org.uk by Saturday, 20th February.