



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 526

Web Address: www.g0mwt.org.uk

January 2010

Seasons Greetings to all our Readers

This Month's Meeting – Tuesday, 5th January. 7.30pm at the Marconi Club.

"London Underground Modernisation"

by Mark Sanderson, M0IEO.

How many of you have used the underground railway in London either to get to work or at the weekend for a day out in London? Have you ever stopped to wonder how the system, which was first opened in 1863, is kept running? How is maintenance carried out on tunnels, which in places are nearly 150 years old?

As the infrastructure grows older it requires more work to keep the system running and with the eyes of the World being cast on London in 2012 with the Olympics coming to town, it is time to spruce the Underground up and bring it up-to-date.

The showcase of the underground is Oxford Circus station which is coming to the end of an £80 Million refurbishment, but with the station open to the public from 06:00 to 00:30hrs seven days a week, how does the work get done?

Join Mark at the CARS January meeting on 5th January and find out about London's other world.

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

Dates for your Diary

Tue, 12 th January	CARS VHF Net on 145.375MHz
Wed, 13 th January	CARS Committee Meeting – Danbury Village Hall – 7.30pm. All welcome.
Tue, 19 th January	CARS UHF Net on GB3ER – The Danbury Repeater
Tue, 2 nd February	CARS Meeting – "The Loop-Fed Yagi by Justin Johnston, G0KSC.
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.

To become 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.

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 January is Colin, G0TRM. Thanks to Patrick for doing it in December.

Last Months Meeting:- “Direction Finding & Micro DF-ing” By Roy Emeny, G4JAC.

Roy is obviously a very dedicated DF'er with some thirty years of experience. His talk was very entertaining and illustrated using a Power Point presentation leading to, now and again, some hilarious laughter over the situations that both the hunted and hunters got themselves into. This involved pictures of hunters' injuries when falling over in the dark, when going through brambles or getting wet by going through streams.

A history of DF was given illustrating the traditional practice of one starting point and two hidden transmitters using the 160m band; the hidden stations could be up to several miles from the start and the hunters would usually use a homebrew receiver using a frame (loop) or ferrite rod aerial. Some circuits of these were shown to the audience together with an actual receiver built by Roy himself. There are some pictures and more information on Roy's website, have a look on <http://www.forjac.freemove.co.uk/df.htm>

A number of the audience appreciated the nostalgic pictures showing a few well-known amateurs who took part and who were members of Chelmsford or Colchester A.R.S. Some recognised Mike Hawkins, Bill and Doreen Pechey, Dick Brocks, Andrew and Daphne Mead (see website <http://www.dfable.org>), Ian Butson, Peter Graves, Phil Cunningham and several others from those early days. Every weekend they would travel to the various events being held by clubs all over the UK. Usually the hunters worked in teams consisting of the operator, the navigator and the runner.

Roy showed how to plot cross bearings of the hidden station on an Ordnance Survey map (see fig. 2) and also the need for a sensing aerial on the receiver to help decide which of the two reciprocal bearings was the forward one. The bearing error could be at best about +/- 2.5° and often much more if measured near railway or power lines. This meant that instead of a simple cross to indicate the position of the hidden station that a small area was involved where four lines (two from each of the two bearings) crossed on the map. The smallest area would be when the nominal bearings crossed at right angles. To get to this area using the OS map would need some orienteering and athletic skills, and was often difficult because of the uncertainty of where the station was within that area. Sometimes the area would embrace a river or other difficult obstacle barring a direct approach to the hidden station operator. When the hunter found the hidden operator a signature would be given together with the time of arrival. Usually two hidden stations had to be found within two to three hours. The first person to have found both would be declared the winner of the event. Hunters

would be given a sealed envelope to be opened if they failed to find the hidden stations and so that they could enjoy the feast provided at the end of the hunt.

Leading on from the description of traditional DF-ing Roy said that he felt that beginners were not getting a fair deal. He decided to design a new system that would give all those participating some reward, at the same time make it easier for beginners to progress and feel some achievement at the end of the event. After some difficulties to persuade existing DF-ers with his ideas he decided to build a system which initially would involve master stations each having some mini and micro stations nearby which would be unmanned and which would run very low powers detectable no further than when you were 200 metres away from them. The Ofcom regulations allow some unmanned transmitters on 1960 kHz (see your licence). Roy introduced this new system recently and feedback has been very favourable. It uses a points system and so gives both beginners and old timers a worthwhile challenge to get a good score in the two hours allowed. The new system was tried out only two days before Roy's talk to us and first feedback was good. See:-

<http://www.forjac.freemove.co.uk/dfres/291109/291109.html>

If you didn't attend the meeting you missed a very good evening.

Geoff Mills G3EDM & Patrick, M0XAP.

Geoff adds a comment: -

Some hunters, in the past, used valve receivers but the trend was to move to transistors with the initial use of bipolar transistors and then field effect transistors (FET's). A move forward to using integrated circuits then followed. Just before this last stage I recall that Peter Clarke, G3LST, sold some few hundred Mullard modules that were made from discrete components that were the basis of a portable 160m DF receiver design in the early seventies. See Radcom p. 307, 1969.

Micro Direction Finding

Following Roy, G4JAC's successful presentation to CARS at the December Meeting, he has agreed to present a Micro Direction Finding Event starting at 2pm, Sunday 8th August, 2010 at Sandford Mill.

The idea is that Roy will hide a number of Micro Transmitters around the grounds of Sandford Mill and then invite CARS Members and the public to find them.

CARS will present small prizes to those successful and a Certificate.

January Radio Sport (Contests) All in UTC.

02/03 January - ARRL, RTTY - 24 hrs

04 January - RSGB Club - CW - 20:00 to 21:30

10 January - RSGB AFS - CW - 14:00 to 18:00

13 January - RSGB Club - SSB - 20:00 to 21:00

16 January - RSGB - AFS - SSB - 14:00 to 18:00

21 January - RSGB - Club - DATA - 20:00 to 21:00

30/31 January - CQWW 160M - CW - 48 hrs.

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

Steve, G4ZUL, CARS Contest Manager.

Radio Path Predictions – January.

Gwyn, G4FKH was requested at the November Meeting to provide an “Only to CARS” Propagation Prediction. About 7 CARS Members found it “very useful” so thank you Gwyn.

Asia: Dhahran - around 10:00 on 24.9MHz for 91 percent of days, with fair signals.

Oceania: W. Samoa - around 10:00 on 10.1MHz for 79 percent of days, with poor signals.

Africa: Johannesburg - around 20:00 on 10.1MHz for 79 percent of days, with poor signals.

S. America: Caracas - around 08:00 on 10.1MHz for 71 percent of days, with poor signals.

N. America: Saskatoon - around 16:00 on 14.0MHz for 83 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.

Net Controllers take it in turns – anyone can do it. The Controller for Tuesday, 15th December was Patrick who made the initial call on GB3ER, the Danbury Repeater.

He had the following participants: Denis M0FHA; Ron M3CAM; Bob M4MDB; David M0BQC on a

handheld; Roger M1CMW from Maidstone; Alan G0RTH from Langdon; Clive M0GHH who reported that he could hear Mark and Alan for the very first time!; Marcus 2E0COO from Folkestone running full battery power; Mark, M0IEO from Canvey Island; John G8DET and Tony M3KPQ from Burnham On Crouch. Colin, G0TRM listened after returning from a dinner engagement.

The beauty of this 70cm Net was that once Ron, M3CAM had attached an aerial so that he could contact the Danbury Repeater, all signals were 5 by 9 and perfect communications quality. Topics included “59 Café – a motorcycle Café near London” which supported a beauty called “Jungle Judy”; the transfer of Hedgehogs from Chester (by accident) and the Wall of Death motorcycle event at Southend on Sea. The previous CARS Meeting presentation by Roy, G4JAC on DF-ing also got an airing.

A very good Net with all persons being able to hear all others well. Thank you Patrick for running such a good Net and ERG for providing GB3ER.

John G8DET.

Training

CARS run courses for all three levels. A fast-track Revision Course started on Thursday, Nov-12th for the Advanced exam on Monday, 7th December. The completed papers have to be sent away for marking so only by the candidate informing CARS how they got on do we know.

We now know Richard and his Father, Peter Meadows both passed – congratulations. Sascha Troscheit sat and passed the Intermediate Exam at LEFARS the previous night and has now passed the Advanced Exam with CARS – congratulations. He is now M0TRS.

The next Foundation Course (CARS landmark 21st Course!) starts on 14th January 2010. An Intermediate Course starts 18th March, 2010.

If you would like to attend either, 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

Friends of Chelmsford Museum - Christmas Party by Geoff, G7KLV.

Our Vice Chairman, Ros Webb, welcomed thirty five members and guests to what has been claimed to be our best ever Christmas Party on the evening of Thursday 10th. December 2009. This year it was held at Christ Church, New London Road, in lieu of Oaklands, because the new £5M extension, due to be opened at the end of January, was not quite ready. Incidentally, the Friends are donating over £5K for the purchase of IT facilities.

We were entertained by members who had organised quizzes, party pieces and turns. One very amusing turn was performed by Annette & Mike Fawcett (the enterprising couple who organise the successful refreshments on Sandford Mill Open Days). A revival of that old chestnut "Call My Bluff" caused some merriment! As usual the delicious seasonal refreshments were organised by Marie, widow of one time CARS member Ralph Polley, G3NAA. Winners claimed a variety of prizes as the Raffle was drawn and the evening ended with a sing-song and Christmas Carols led by the inimitable Tony Gilbey, G4YTG aided and abetted by his accordion!

Geoff, G7KLV.

CARS Christmas Lunch

This year CARS repeating the excellent Lunch provided by The Chimes Restaurant at The Bell, Rettendon, CM3 8DY. Martyn Medcalf, G1EFL and his lovely Wife, Val co-ordinating the Bookings and provided a nice Ticket with a reminder of what each had ordered. Even so there was a slight hiccup when someone could not remember what they had ordered and could not read either – but it was easily sorted out. 35 Members and Guests attended.

We had the room to ourselves and the decorations were very nice as were the Crackers. Guests were Trevor, M5AKA, RSGB Region 12 Rep, Phillip G4NZQ from Norwich and Mark M0IEO & Belinda his Wife who has supported CARS so much during 2009.

The 3 Course meal was soon consumed and the Raffle run with 10 prizes producing a £70 donation to the MacMillian Nurses.

A jolly good Christmas Lunch – thanks to all who attended and Martyn & Val for running it.

John G8DET

Components for Valve Power Units

Thinking of entering a Valve PA in the Constructors Competition? Stumped for suitable components for the PSU? All is not lost, I can help!

I have a variety of components all waiting for a good home including paper capacitors, smoothing chokes and mains transformers and an odd valve or two. They are too heavy and cumbersome to take down to Canvey! Call me on 01245 473822 and they can be yours, buyers collect! Just one snag! A small donation is requested to Club funds!

Geoff G7KLV

Essex CW Amateur Radio Club

The Essex CW Amateur Radio Club is a new club for anyone with a passion for Morse code.

Although the founders are from Essex, members are welcome from anywhere in the UK or abroad.

Essex CW ARC is looking to organise a whole range of CW activities including contest participation e.g. CW NFD, demonstrations at special events, talks and promotion of CW at local radio clubs.

The club's call-sign is G1FCW and they meet on-air (using CW of course!) on the last Wednesday of each month at 19:30 on 3,540 KHz +/- QRM.

One important area for the club is assisting those who wish to learn CW. If you fall into this category or can help others with this activity please consider joining us.

Essex CW Amateur Radio Club
Encouraging CW use on the Amateur Bands
<http://www.essexcw.org.uk/>

Steve, G4ZUL

CARS 2009 DVD

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

We would welcome more pictures from pre-2000 and also any scans of early club documents or any old licences that you may have. Does anyone have a copy of a Mobile Amateur Radio licence or any Amateur licence pre-1970? Your recollections from the early years would also be most welcome. Please send to m5aka@amsat.org

Trevor M5AKA

Closure of GB7ESX & GB7NNA BBS's

It is with great reluctance due to heart problems, that G1NNB has had to close down his packet station/network, which included the International BBS's GB7ESX & GB7NNA.

Both have given continuous service to mid Essex and beyond for over 25 years and were probably the longest running stations in the country. They used software designed by George's son G1NNA. This cleverly designed popular software has been used by "packeteers" both in this country and abroad. GB7ESX & GB7NNA were the first AX25 BBS's in the World to have compressed mail forwarding. Latterly, by popular request George installed GB7DXE Essex's first and only packet DX cluster, which is still running on the Internet.

Packet stations have come and gone, but the Essex BBS's kept on running, thanks to George's hard work and dedication. George lives with his family in Witham.

CARS members Carl G3PEM & Chris G0IPU have stated they will miss very much not having access to George's BBS's and cluster.

I am sure a good number of Amateurs particularly in Essex and surrounding counties, would like to thank George for promoting this mode of operation and keeping it alive for so many years.

Clive, G1EUC

Winter Maintenance

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

Antenna Masts

With the onset of winter now upon us, just a timely reminder to those of you new to amateur radio and to those who have seen a few winters that now is the time of year to make sure that your antenna masts are in good shape for the coming months of bad weather. I wonder how many of you have thought to carry out the basic maintenance that your antenna needs? Here are just a few pointers for good housekeeping that should be carried out at least on a yearly basis.

Safety

As with any installation or repair, safety is the most important thing to consider before you undertake the work. How will you get access to the rotator? If you are lucky enough to have a tilt over mast make sure that there is on one in the vicinity of the mast as you lower it. Always have a responsible adult in attendance when working on a mast just in case of an accident, they may be the one who can get to the phone if you fall. In all cases you will need someone

to foot a ladder or pass you tools. Consider the use of a tower scaffold for working at height, the cost of hiring one will be about £45 for a weekend and is by far the safest way to access a mast, if you do hire one, make sure that the hirer gives you a full briefing on how to erect the tower and do use the guard rails, toe boards and outriggers supplied for heights over 2m. This is a requirement of the Health and Safety Executive and also common sense. As with ladders, never over reach from a tower scaffold and never have a person stood directly underneath the tower while you are working above. Consider investing in a tool belt or pouch for carrying tools aloft and never throw anything from the top of a tower.

Mast Anchorage

If your mast is anchored to a wall using the TK bracket system, check that all the bolts holding the brackets to the wall are secure and that there is no sign of cracking around the positions where expanding bolts enter the wall. Also check for signs of rusting on bolt heads and treat with either Galvafruid or Zinger paint after removing any loose rust.

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. Also strong winds can over tension ropes to the point of breaking from the inside out. Look at all guy lines and if there are signs of fraying consider replacing them before it becomes a major problem or worse, you are having to rebuild or replace your expensive antenna. If you are using a 3 or 4 way mast clamp, install rope thimbles at the point where the rope meets the clamp to prevent the clamp from cutting through the rope, and make sure that any lashings to ground posts are tight and secure. Remove long grass or plants from the ground posts to reduce the water being held in the ropes at ground level.

Rotators

Check all mounting bolts to see that they are tight and secure, ideally this should be done every six months but do not over tighten them as damage will occur to the threads and the bolt will fail. Most bolts are manufactured to perform at a specified torque setting, given in either foot-pounds or Newton's per meter squared. The setting for your bolts can be obtained from your local supplier or from the GKN website via Google. Remember too that most rotators today are made from cast aluminium which if overstressed will crack and fail, especially in cold weather so remember to re check all fixings in the spring when the weather warms up again.

Have someone operate the rotator while you listen for any sounds of distress inside, if you are doing this in situ, please remember that even with a small antenna, the momentum will be considerable and more than enough to knock you off a tower scaffold, please be careful when doing this. Is the rotator jumpy in operation? Is there excessive noise? These could be signs of either a dry gearbox or teeth missing from the cogs inside. Follow your manufacturers maintenance recommendations for your rotator, paying attention to things like the recommended type of grease to use, remember, if you use a high melting point grease it will thicken in cold weather, which will place more strain on the motor when trying to turn your antenna.

Power Feeds and Coax Connectors

Check all power feed cables to the rotator and the coax feed to the antenna for breaks, cuts and corrosion, replace any cables, which appear to be damaged and check the coax plugs at the point they connect to the antenna. Is there any sign of corrosion to the plug? Is it a waterproof plug, if not then either change it for one of the compression type fittings or at the very least ensure that there is a good seal using self amalgamating tape at the point where the plug and coax meet. Check also that the plug is firmly attached to the antenna.

Beam Antennas

Look at the antenna; are there any elements that look out of line? Check with the manufacturers installation instructions to see that all elements and fittings are where they should be and that they are securely fitted. Check for corrosion at the points where the elements meet the boom, this is a favourite place for interference problems to start and often the cause of poor tuning of an antenna. Are all the connections clean and secure and are there any cables which need to be re-secured, cable ties are good but they do break down with UV from sunlight so it is as well to check them.

Vertical Antennas

If the antenna is mounted on a ground post, is the post in good condition? It may look ok from the top but are there signs of rusting inside the post from sitting in the ground? Does the post have a good solid foundation with no sign of cracking, this is always a better option than a scaffold pole banged into the earth. Does the top of your vertical antenna sway excessively in the breeze? If so then consider guying it at about two-thirds the way up. This will reduce the stress in the base and will save it from becoming bent. Again like the beam antenna, check all the connections, which form the antenna to see that they are secure, as they could have become loose with movement from the wind. As with all antennas, check the coax feed and fittings for signs of corrosion and breakage replacing where necessary.

Wire Antennas

These are the easiest to maintain and to replace if things do go wrong. As with all the above, inspect at regular intervals, more so during windy weather paying attention to things like guy lines and support poles. Also inspect insulators for signs of cracking especially on china insulators and that all lashings are secure and safe. If lashed to a tree, remember that a tree will grow during the summer months and may have over tightened the lashing to the point of breaking. As with any antenna, the first sign of trouble often comes from a high VSWR reading so it would pay to dig out the VSWR meter and keep it handy with a patch lead. Check the VSWR reading on a weekly basis. Getting into a routine with this is a good idea, say on a Sunday morning but please do be careful of the frequency that you use as there could well be someone that you cant hear chatting to someone who can hear you!

Station and Antenna Earth

An important part of any station is the station earth and antenna earth. Remember from your Foundation Course we told you that you would need to provide an RF earth for your station? How often do you check it to see that it is still connected? If like me your shack is on the first floor of the house, you may have a problem if you run one continuous cable down to an earth rod outside the house because it could well form a resonant length meaning that more of your signal will go to earth than into your antenna.

You may need to install an artificial ground system to overcome the distance your earth cable has to cover. Remember that a good earth system is as important as a good antenna system.

Have a safe winter and I hope the above is of use to you all.

Mark, M0IEO.

And Finally:-

John G8DET edited this edition.
Material by; Geoff, G3EDM; Trevor M5AKA;
Steve G4ZUL; Clive, G1EUC; Mark M0IEO;
Geoff G7KLV, Gwyn, G4FKH & 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, 16th January.