Chelmsford Amateur Radio Society

Established 1936

Affiliated to the RSGB — *Club Call Sign: G0MWT*

President: Carl Thomson, G3PEM — *Chairman: John Bowen G8DET*

Treasurer: Brian Thwaites G3CVI — *Vice Chairman Martyn Medcalf G1EFL*

LOTTERY FUNDED

Newsletter No 538 **Web Address: www.g0mwt.org.uk** **January 2011**

HAPPY NEW YEAR TO ALL OUR READERS

This Month's Meeting – Tuesday, 4th January, 7.30pm at the Marconi Club

"Radar and Chain Home Film, Renewing YOUR Licence, a Practical Soldering Class and Transmitter Tune Practical"

By CARS Members

This is a change to our published programme in RadCom, partly due to the likelihood of adverse weather in January - we feel we cannot request people to travel distances at this time of the year.

As a continuation to CARS Operating GB75CH from Great Baddow to commemorate 75 years of Marconi involvement with Radar and Chain Home we are showing a film about its development. This is a really good film and explains possible reasons why the Germans never really found out about the English use of Radar.

At the same time the film will be shown we will have a workstation connected to the Internet & Ofcom to Re-License Amateur Radio stations Licenses. If you would like to Re-License YOUR License - please contact the Chairman or a Committee Member before the meeting.

After the refreshment break, President Carl, G3PEM will give a Practical Soldering Demonstration. At another table the correct way to use a MFJ Tuner to tune a Transmitter to an Aerial will be demonstrated with the invitation for YOU to have a go.

CARS will have its now famous Raffle with at least 10 prizes - only £1 per Ticket.

Dates for your Diary

Sat, 8th Jan 2011	CARS 80 Metre Fun Contest see Rule Sheet issued by Carl – see page 4.
Tues, 11, 18 & 25th Jan	CARS CW Net starts at 8pm on Tues 11th; SSB Nets starts at 8.30pm (Local)
Wed, 12th Jan	CARS Committee Meeting – Danbury Village Hall – 7.30pm. All welcome.
Thursday 13th Jan	CARS Foundation Course starts in Danbury Village Hall.
Sat 15th Jan	CARS 80 Metre Fun Contest – see Rule Sheet issued by Carl – see page 4.
Tues, 1st Feb	CARS Meeting – "Expedition to Antarctica" by Prof Les Barclay, G3HTF
Sun, 6th Feb 10:30am	Canvey Rally – Surplus wanted for the CARS Table – Please bring to the Jan meeting.

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.

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 Patrick, M0XAP. **Thanks to those who did it in December.**

Last Month's Meeting:-
"The Joy of Contesting"
By Mark Haynes, M0DXR

Mark presenting his excellent talk on Contesting Although the room looks empty it was filled with a surprising number of Members who braved the snow and ice.

Mark began his talk by describing his route in Amateur Radio and eventually to Contesting. Encouraged by his Father, Keith G3WRO he obtained his first licence in 1996 and was granted 2E1ERN, the first of his three call signs, when he was 12 years old.

In 1999 Mark was the winner of Young Amateur of the Year Award and in the meantime his call-sign had changed to 2E0APH. Mark said Contesting was in his blood from a young age and put the onus squarely on his Father, who was in the audience to hear Mark give his talk to the Club. In 2000 he obtained his current call M0DXR and has recently taken on the Chairmanship of the Harlow Club.
He was Founder of the Contest University UK, and has operated from many DXCCs including Comoros D68C, Maldives 8Q7XR & 8Q7ZZ, Kerguelen FT5XO. He has member ship of a number of organisations

With family and work commitments his time is limited but has still found time to hold the records in CW Contests both in England and World-Wide as a Single Operator All-Band, low power, and (known as SOAB) as well many other contest formats.
There are many other formats and abbreviations as Mark explained, such as SOSB, Single Operator. Single Band. SO2R Single Operator 2 Radio. MO Multi-Operator. MS Multi-Operator Single Transmitter. MM Multi-operator Multi Transmitter. M2 Multi-Operator Two Transmitter. To indicate power levels HP, LP or QRP can follow these abbreviations.

Contests can be one hour long or up to 48 hours and usually, but not always, take place at the weekends on all bands except the WARC bands. At the peak there could be some 30,000 contesters on the air at any time. One of many method used in contests is S&P or Search and Pounce, the technique of tuning for stations to work instead of calling CQ, which may be used in SO2R operation.

Mark replayed a number of audio clips through the PA system to illustrate the skill and techniques used by the top rated contesters to gain the maximum number of contacts with the minimum time spent on each QSO. These clips covered both SSB and CW operation. Mark pointed out that aim was to use an absolute minimum number of words, but at the same time ensuring absolute accuracy in call-signs because an error could cost points to both operators in a QSO. Duplicates also lost points and it wasted precious time, so a first a rate logging programme was paramount. Likewise with CW, time is everything and in the examples heard some 40wpm was not uncommon, preventing the writer reading very much of the exchanges apart from perhaps one letter in ten. In CW so called 'cut numbers' are used for numerals, such as N for 9, A for 1, T for zero and so forth. Cut down call signs are also in use.

As we all know from the sometimes-crowded Bands there are many Contests that can be entered by all classes of operator and in many modes; amongst which are: -
CQWW WPX CONTEST - SSB, RUSSIAN DX CONTEST, CQ 160-METER CONTEST - CW,
CQ WORLDWIDE DX CONTEST - CW,
CQ WORLDWIDE DX CONTEST - SSB,
IARU HF WORLD CHAMPIONSHIP, and of course the January CARS 80m Fun Contest.

Mark has no doubt entered some of these contests and most likely won some of them.

During the break the proceedings were given a festive spirit by the eager devouring of hot mince pies, thoughtfully provided by Chairman John G8DET.

After the interval Mark went on to explain in detail about a top rated Contest station in the USA K3LR that he visits and operates in contests on occasion. In this situation he may well be known as a 'Hired Gun' that is highly skilled guest operator.
It is maintained and owned by what can only be described as the ultimate amateur Contester. Not just one radio and operator but truly MM. In fact about 12 operating positions, each with at least two radios and top notch radios at that. Win-Test software was also used.

As far as antennas are concerned, again no expense is spared, covering several acres and consisting of many high (217ft) masts each holding multiple antennas, many of which are rotatable. Of course

every Contest band is covered more than once in some cases, with multi-element yagis and sometimes-long wires as well.
Put versions of "K3LR" into Google and follow.

Another typical station of this type can be seen at www.cn2r.org, this a super contest station in Morocco.

Most of the top MM stations these days use CW Skimmers. The extracted call signs are exported as DX cluster spots via the built-in Telnet cluster server.

This write-up has covered just some of the many points raised by Mark during his excellent talk and at every stage Mark's enthusiasm for Contesting shone through and it is hoped that some of this enthusiasm will rub off and encourage many CARS members to try this newly named Sport Radio activity of Contesting.

Colin, G0TRM

Updated Magnetometer Online

The 2nd version of the Magnetometer shown at the 2009 Constructors' Competition is now fully operational and is returning useful data.

Since 29th November we have been trialling a new magnetometer module with X, Y and Z magnetic field strength readings, and collecting temperature data from inside the magnetometer box. This waterproof box is currently located on the ground about 3m from the shed but will be put underground to reduce temperature variations in the measured field strengths. Once this has been done we will investigate further the sensitivity of this new magnetometer for detecting geomagnetic activity.

At the same time, we are also logging the signal strength of a Very Low Frequency (VLF) receiver designed by the British Astronomical Association. The signal (on 23.4 kHz) originates from Germany, so the reading is a product of the ionospheric conditions. This means Sudden Ionospheric Disturbances (SIDs) caused by solar flares, which affect propagation, can be seen as small bumps on the graph. A thermometer on the VLF board inside the shed is also output.
Under the new system, the data is now automatically routed to the Web and can be seen, in near real time, at
www.petermeadows.com/mag/

A good example of a VLF SID can be found for 3rd and 5th November on the VLF data page.
Be warned that if you don't have broadband you may have to wait a while for the page to load.

Richard, M0SBU & Peter, M0ZBU

Solar Wind and Aurora

Over Christmas, John G8DET entertained a friend of the family from Bologna, Italy. He is keen on Solar Wind and Auroras. He went to northern Sweden mid-October to see the Aurora but it was cloudy so he had to look at them "cloudy".

He is interested in Peter and Richards Web Site (above) and when back in Italy will have a chat with his mate at a University.

There was a lot of Moderate Northern Solar Wind (Grade 3) activity on Sept 24 – 26; Oct 19 – 20 & 24th; Nov 2-3 and Dec 12th.

A beautiful video shot on the 6th December 2010 can be seen at: -
http://laughingsquid.com/time-lapse-of-aurora-borealis-over-troms%C3%B8-norway/

On the 26th December 2010 there was 2 hours of the most beautiful Northern Aurora over Tromso, Sweden.

The aim is to now work out the correlation between these events and Peter and Richard's Magnetometer readings and then to use them for Radio Propagation Predictions – very exciting.

To assist look at: -
http://www.spaceweather.com/

I remember Ron Ham (now SK) spent years working out the relationship between a Solar Flare and what happened on Earth. I was only mildly interested at the time (45 years ago) but 10 days seems to stick in my mind.

Who has some old RadComs/Practical Wireless with Yearly Index and could look up Ron Ham, please.

Trevor has come up with a very interesting link: -
http://thelemix.net/~xako/fhtagn/jbanks-guildhall.txt

"Whilst the shock wave, or Coronal Mass Ejection, may take anything from 6 to 40 hours to reach earth,"

John G8DET

John Dodson G0LSY Silent Key.

It is with regret that we record the sad passing of yet another CARS member. John Dodson GOLSY was a long-time member of CARS, at least twenty years to my knowledge, always known to his friends as' Dodi, pronounced Doddy! I have known John for about nineteen of those years without really knowing him at all and it is only through reading the eulogies read out at his cremation that I realised what an amazing chap he was. I am grateful to Graham Leggett G7JYD for supplying me with these details as I did not attend that event. John was born in Ilford in 1931 and was evacuated to Devon during the war. On

leaving school aged 14 he obtained an engineering apprenticeship. Whilst on holiday in Devon some years later he met his future wife Veronica.at a local hop. They arranged to meet the following day at a local beach but it was very crowded and he couldn't find her. With a stroke of pure genius he decided to wait near the toilets and at last he was rewarded! They married a few years later and had three children, two girls and a boy and were eventually blessed with five grandchildren. Sadly the' marriage foundered but fortunately they remained good friends until Veronica passed away.

In 1964 John joined Marconi and until his retirement at 65, in 1996 as a Development Engineer in the Radar Division at Baddow. He became an enthusiastic Radio Amateur with a fascination for Morse, helping others to pass the test and eventually becoming a Morse examiner. He was a keen constructor dabbling in hi-fi and TV as well as HF but his interests were wide and varied ranging from his allotment to wine making, the study of bats and walking. At the age of 70 he took up skiing and snow boarding and appeared in the ice skating pantos at Riverside and even did parascending in France! John latterly suffered from asbestos related cancer and. passed away at Farleigh. He will be sadly missed by his 'children, grandchildren and his many friends. What a truly amazing chap he was.

Geoff G7KLV

Fred Wright – G6FXM

Fred unfortunately has had a spell in Broomfield & Basildon Hospitals – CARS wish him a speedy recovery in St Joseph's Danbury. Give him a bell. 079 299 087 53 and St. Joseph's is 223367

President Jottings Number 3

Last month's meetings talk gave an insight to another facet to our wonderful hobby. The talk on contesting by Mark started with the basic steps and ended with a graphic description of a super contest station. All very interesting! This talk was timely as the CARS are trying to revive the fun contest of 1967.
I hope you will all have a go either Transmitting or Receiving, remember the scoring is biased towards the newly licence stations, the 50 Watt plus stations will have to work hard to gather the points.

Remember this is for fun among the members

NOW FOR THE SACKCLOTH AND ASHES BIT:
I have to apologise to Patrick M0XAP, he questioned the timing of the segment on the 15th Jan. Having checked on the RSGB web site I told Patrick that he had the wrong date however the fault was mine as I had failed to notice that the dates I was looking at were for this year not 2011. This would have put our contest in the first hour of the RSGB AFS contest therefore I intend to move our contest to 1100 to1200 on the same day (the 15th Jan) as this would put us in the clear of AFS. The date on the 8th of JAN remains the same at 17,00 to 18,00 hrs.
Sorry for the mix up - I have learnt the lesson!
I need to read ALL the details on a web page.

The timing of 1100 to 1200 on 80 metres will mean that the propagation will be local but as it is the middle of winter it could throw up a few surprises.

Carl, G3PEM President.

January Radio Sport (Contests) All in UTC

03 January – RSGB Club – CW - 20:00 to 21:30
08 January - CARS 80m Fun Contest, 17:00–18:00
09 January – RSGB AFS - CW – 14:00 to 18:00
8/9 January – ARRL, RTTY – 24 hrs
12 January – RSGB Club – SSB – 20:00 to 21:00
15 January–CARS 80m Fun Contest, 11:00 – 12:00
15 January – RSGB – AFS – SSB – 14:00 to 18:00
20 January – RSGB Club – DATA – 20:00 to 21:00
29/30 January – CQWW 160m – CW – 48 hrs

For further information please email Steve G4ZUL
contests2010@g0mwt.org.uk

Steve, G4ZUL & Carl G3PEM.

Radio Path Predictions – January

These are provided "Only to CARS".
Thank you Gwyn.

Asia: Dhahran - around 12:00 on 24.9MHz for 94 per cent of days, with fair signals.
Oceania: Sydney - around 14:00 on 10.1MHz for 79 per cent of days, with poor signals.
Africa: Johannesburg - around 20:00 on 10.1MHz for 83 per cent of days, with poor signals.
South America: Rio de Janeiro - around 08:00 on 10.1MHz for 76 per cent of days, with poor signals.
N. America: Saskatoon - around 18:00 on 14.0MHz for 80 per cent of days, with poor signals.

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

Gwyn, G4FKH

Using an Icom E880 on 2m & 70cm

This is Icom's mobile or fixed station rig using their latest technology and additionally it is D-Star (Digital Smart Technologies for Amateur Radio) enabled. We have one local repeater (GB7ZP, 430.4875 MHz Input, 439.4875 MHz Output), which, as far as I know, has not yet been connected to the Internet.

It does though support working within its local area.

This article is simply to report on my findings to date and is limited to non D-Star experiences on 2 m and 70 cm. As a newcomer to this rig I came with a knowledge of analogue working through repeaters such as GB3DA on 2 m and of simplex working both main station and mobile.
The installation for mobile and fixed stations is well explained in the accompanying handbook of 178 pages but the use of the software is marred by the translation to English and the use of jargon which is not defined, and the too often cross reference to other pages, and with which it is expected that the user is already familiar. A glossary of the jargon used would be very helpful and nowhere on the Web have I found much that really helps.
There are a few pages describing a quick start for simplex and non D-Star repeaters and that is helpful.

The Receiver covers more than just 2 m and 70 cm and starts low enough in frequency to cover Airband listening and frequencies up 900 MHz. It appears very sensitive and I found it useful to copy many repeaters and thereby mobiles within a radius of 150 miles which has been useful to get up-to-date knowledge on road conditions in the recent snowfalls

The Transmitter can run at three power levels - 5, 15 and 50 watts and certainly I can access GB3DA or GB3ER on 5 watts whether the aerial is connected or not (I don't recommend the latter!). The fan can be left to run automatically or programmed to switch on when the heat sink gets too hot. It is a very quiet fan and very small as is the whole transceiver. The control panel is detachable and a lengthy extension lead enables it to be anywhere in the car that is cool. The panel is provided with a magnetic mount that enables it to be attached easily to any steel part of the car. Alternatively, double-sided sticky tape would do the job if the magnets were not usable - as on plastic.

Look forward to further reports as I progress

Geoff Mills G3EDM, Vice President.

HF Signal Paths

Having operated mainly on the 20 metre band since I was first licensed in 1946 I was led to believe that if all the equipment and the transmitter powers were similar at each end of the path that reports, that is to say signal strengths, should be the same in both directions. Only recently has there been a reminder that this is not the case (see QST December 2010, p33 … Gimme an X, Gimme an O).

It's a common belief that signals travelling via the ionosphere have horizontal, vertical or whatever polarisation that the DX station is using. And that polarisation is scattered (randomly polarised) by the ionosphere, for example, a wave starting from a horizontal Yagi beam may have any one of these polarisations at the receiving end. This is a false premise! (Not assisted by the Advanced Licence exam requiring that you "recall that transmit and receive antenna should have the same polarisation").

All HF ionospherically refracted signals are elliptically polarised, whether clockwise or anti-clockwise, and this is down to the fact that the ionosphere is a magnetised plasma (ionised gas). The mathematics that describes this is well established. The outcome of this is that if a linearly polarised wave, say from a Yagi or dipole, is launched into an ionised gas it splits into two separate, counter rotating, circularly polarised waves, one CW and one ACW (A circularly polarised wave is simply an elliptically polarised wave with ellipticity of 1). These two circularly polarised waves are known as the Ordinary (O) and the extraordinary (X), hence the title of the QST article.

Because the X wave travels a bit faster in the ionosphere than the O wave it travels higher and, therefore, has a longer skip distance. The waves return to earth in different places, the differential being greater as the launch angle is lowered. In signals propagating over the earth's magnetic Polar Regions there is also azimuth skewing. So what's the effect of all this?

Those operators having rotatable beams will have noticed that often the signal is stronger other than on the great circle path. Often the signal appears to be coming from every direction at once - in fact it's then actually coming from straight overhead. An aerial capable of receiving circularly polarised waves is required to examine this. The author of the QST article suggests that an HF turnstile aerial comprising two crossed inverted V dipole aerials is a simple starting point, as it only requires one vertical mast, and the aerials also act as guy wires! Additionally, he suggests you cut the dipoles for 15 MHz so that you can receive WWV (The standard frequency signal). But why not experiment on the 20 meters band, as most of the real DX is there?

Geoff Mills G3EDM, CARS Vice President

And Finally:-
John G8DET edited this edition. Material by; Trevor, M5AKA; Steve, G4ZUL; Gwyn, G4FKH; Murray, G6JYB; Carl, G3PEM, Geoff, G7KLV, Geoff, G3EDM, Colin, G0TRM, Peter, M0ZBU and Richard M0SBU.

Items for the next Newsletter, including your experiences with your latest rig or antennas, tips on working DX, or your latest project, to be sent to the editor@g0mwt.org.uk by Friday 21st January.