



Chelmsford Amateur Radio Society

Established 1936

Affiliated to the RSGB
President: Harry Heap G5HF
Secretary: Martyn Medcalf G1EFL

Club Call Sign: G0MWT
Chairman: John Bowen G8DET
Treasurer: Brian Thwaites G3CVI

Newsletter No 500

Web Address: www.g0mwt.org.uk

October 2007

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

The Annual General Meeting 500th Newsletter

**Yes, we are celebrating the 500th Copy of the CARS Newsletter.
Also celebrating the 90th Birthday of CARS President, Harry Heap, G5HF.**



Brian, G3CVI is under the "0" & Harry is standing 3rd from the right in the front row. Photo by Murray, G6JYB

**Yes, it is the AGM again! Where do the months go! Come and have your say.
After the AGM we have a Presentation & Demonstration of Echo-Link.
See you there. There will be our usual good Raffle.**

Dates for Your Diary

Sunday 23 rd September	Science & Discovery Day at Sandford Mill. 10am to 5pm. HF & VHF – GB5HF
Wed 10 th October	CARS Committee Meeting - Danbury Village Hall at 7.30pm - All welcome
Thu 18 th October	Essex Repeater Group - AGM at Danbury Village Hall – with good food!
Sat/Sun 27/28 th October	CQ WW DX – SSB Contest - CARS are entering this Contest with Short Call-Sign M2T
Tuesday 6 th November	CARS Meeting – Elaine Richards, G4LFM, Editor of Radio User magazine.
Monday 26 th November	Inter-Club Quiz Night at Dengie – with good food!

Thanks to Denis, M0FHA & Joy for arranging the Postal Members Newsletter – could it go by E-Mail?
Inform Membership Secretary, Brian, G3CVI, informed of any changes to your call-sign, E-Mail address, etc.

Club Nets: Tuesdays 8-30pm: (2nd) 145.375: (3rd) 28.375/1,947 (4th) 1.947: (5th) 145.375. All +/- QRM.
Net Controller for October is CARS President, Harry, G5HF.

Last Months Meeting:-

History of Radar by Andy Tyler G1GKN

A packed audience of members and visitors (68 in total we believe) were present from around Essex to hear Andy Tyler G1GKN return to CARS. Following his popular talk in April 2006 on Weather Satellite reception, this year's topic was the history of radar - concentrating on its origins and leading up to the Chain Home (CH) system – the latter exemplified by the 360ft CH mast at the BAE Great Baddow Site

Andy went to great effort to dispel the common belief it all invented by Watson Watt in the 1930s.

His first slides reminded us that EM waves started with the work of Maxwell and Hertz in the 19th century.

The first real start for radar was in 1904 when Christian Huelsmeyer gave public demos of his patented (and nicely engineered) system for the use of radio echoes to detect ships for collision avoidance.

In the main though, this and many other ideas did not gain acceptance due to short ranges or impractical designs. Andy explained that Zeppelin and Submarine threats in WW1 led to development of ASDIC (Sonar) and acoustic listening arrays to detect aircraft. In some respects these acoustic systems principles laid the ground for pulsed rf radars later.

Short range collision avoidance radar though was first used commercially by the French liner SS Normandie in 1935.

In fact Marconi also suggested similar for ship collision avoidance in 1922. As time passed other workers in the 20s and 30s reported radio reception interference from passing aircraft inc the Post Office and NPL Ionospheric sounders (where Watson Watt originally worked)

By the 1930s there was quite a bit of evidence around that supported some form of aircraft detection by radio waves and classified radar work started across Europe, USA, Russia and Japan.

The fear though as Stanley Baldwin said in 1932 was that 'the bomber would always get through'

The Birth of British Radar

Much was written about Death Rays and other means of combating the bomber threat in the 1930s. The Tizard committee for Scientific Air Defence was formed in 1934 and eventually invited Watson Watt to demonstrate aircraft detection. This was conducted on 26th February 1935. The 'Davenport Experiment' as it is called used a pair of dipoles located 10 km from the BBC Empire Transmitter at Davenport (which was Tx Power 10 kW on 6MHz). The dipoles were phased to cancel direct Davenport reception out, but as a Handley Page Heyford bomber flew past at ranges of up to eight miles, the multipath reflection from it gave a clear signal.

The Davenport results immediately led to rapid radar development by the British (mainly based at Bawdsey Manor) not only of a genuine pulse based system that could get range, bearing and height, but also the reporting and integration with the chain of command and the fighter bases to provide an integrated system. Identifying friendly or enemy aircraft was also considered, resulting in IFF.

It should be appreciated that basic technology such as coax, waveguide, high power transmitter tubes, rotary joints (so radar can turn) etc were not to hand at the time. Within months, progress that normally would take years to achieve was being made. Four year later the Chain Home system operated on 20 or 30MHz with peak powers of 350 (later 750kW) and mains locked PRFs with quite sophisticated anti-jamming measures

Metal towers like the Baddow one hung the Transmitter antenna arrays between them, whilst shorter (240ft) wooden towers in front held the receive antennas. This was supplemented by 200MHz CH-Low to fill in low level coverage gaps (and had more stable rf propagation)

By 1939 twenty Chain Home sites, costing £10m, around the South and East coasts were in operation. They were severely underestimated by their German opponents. Not long after though, the Germans deployed high frequency radars, such as Freyas (125MHz) and Wurzburgs (566MHz), to defend their own airspace.

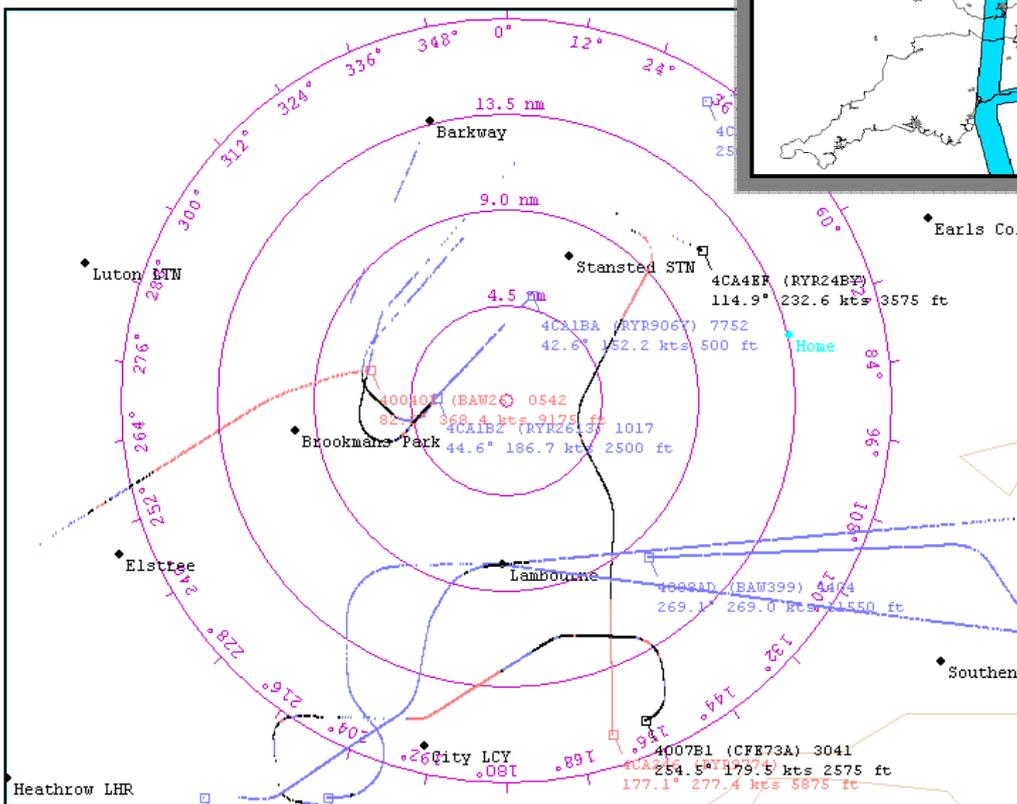
Andy concluded the first part of his talk with a brief mention of Randall & Boots development of the cavity magnetron in Feb 1940 at 3GHz. He also played a video clip interview of Watson Watt describing the Davenport experiment

Demonstrations of ADS-B and ACARS

After the slide presentation, Andy gave a pair of live demonstrations of receiving aircraft position/data reports via the increasingly popular ADS-B and ACARS systems

ADS-B (aka IFF Modes-S)

A spectacular demonstration was setup for after the break of a Kinetic Avionic SBS1 Automatic Dependent Surveillance-Broadcast (ADS-B) receiver. This currently retails from Martin Lynch for £380 and has been advertised in Radcom. It receives the 1030MHz Mode-S IFF signal from aircraft transponders and plots the GPS data on a PPI-type moving map display. It provides almost real time traffic / flightpath position and height information from the aircraft overlaid on a map of Britain/Europe. As Andy zoomed/panned the display it was astonishing that a simple antenna outside the MASC room decoded aircraft reports from beyond Heathrow, Stansted, Gatwick, Luton etc out to the Benelux countries and other parts of Europe. The software also allow can be supplemented by downloads of airport maps, aircraft databases etc (so you can filter the display by airline or country etc). Flight paths, height profiles, stacking patterns and turns around navigation beacons can all be seen

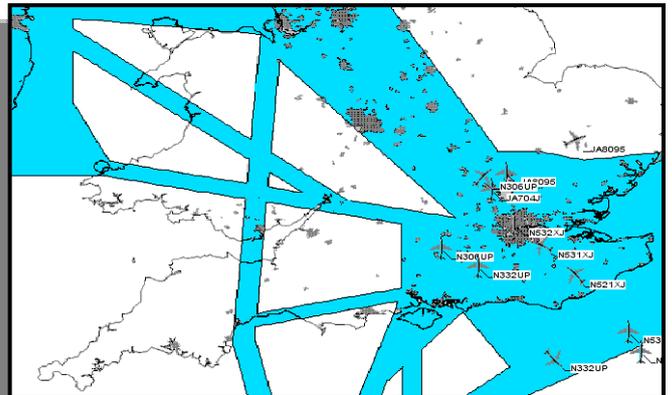


Clearly there are applications for aircraft enthusiasts and professionals alike. In addition such data can be very useful where surveillance radar cover for remote or inhospitable areas that may not have coverage with primary radar. For amateurs there is increasing interest in aircraft-scatter comms in the 23cms band and such receivers provide could be a valuable aid.

Around a third (and quickly growing) of all aircraft in UK airspace have ADS-B equipment

ACARS: Aircraft Communication And Reporting System

This uses the existing HF or VHF radio System, interfaced within the flight management system and transmits the current aircraft GPS position along with callsign, flight number etc. Andy had a demo using a standard scanner in the 130MHz VHF aircraft band. Although rather fewer aircraft use this system than ADS-B it didn't take long for a few reports to appear on the screen. To decode ACARS, all it needs is a PC equipped with sound card fed from an ordinary VHF Scanner audio output and free software – PC-HFDL for HF or WACARS for VHF



Above: ACARS
Left: ADS-B

Potted Club History from 1963.

Taken from a past Nostalgia Event with thanks to Geoff, G7KLV.

Arthur Butcher G3KPJ, recalls that the forerunner of CARS was the Chelmsford RSGB Group which used to meet in a room over Fred Smith's radio shop in Moulsham Street. Arthur joined the group in late 1951 and only attended a few meetings there when the venue changed to Marconi College on Tuesday, 4th March 1952.

The Group's main activity in those days was the annual NFD which was held in the field behind the Running Mare at Galleywood. The location close to Louis Varney, G5RV's QTH was not purely coincidental! As a keen and determined youngster Arthur believes he was the first SWL to be allowed to log for a Chelmsford NFD event.

Fred, G2HNF was also a keen member of the group at that time. Meetings were quite informal and more of a natter club with no officers or bureaucracy. Louis, however, seemed to be the main driving force. Another member of that early group was Eddie Cole G3IIS.

The change from Chelmsford RSGB Group to Chelmsford Amateur Radio Club occurred sometime during the late '50's and apparently Mike Barlow, G3CVO was the instigator. He emigrated to Canada in 1957. Just prior to this Arthur went away to serve his Queen and country from late '56 to '57. When he returned to civvy street the Club had become CARS.

We do however have copies of some of the Notices of Next Meeting. These were run off and distributed mainly using the Internal Post System in Marconis. May I quote from a few which the late Roy Martyr, G3PMX has found.

6th October 1959 - 1/4 sheet - CHELMSFORD RADIO CLUB at that time. *Next Meeting will be by Louis Varney - G5RV "Elizabethan Transmitter". One is in Sandford Mill.*

Coming forward to 3rd October 1961
Next Meeting will be Fred Leach - G2HNF "METALWORKING FOR THE AMATEUR"

Amateurs also provided tremendous publicity for Marconi's in Chelmsford - even to the extent that when I transmitted in 1970 just about everyone thought I would be working for Marconi's.

One list of club members in those early days includes Basil McLarty, and you couldn't go much higher than that in Marconi's!

This brings us up to January, 1966 and from that time the historians job has become much easier with the introduction of the regular monthly news letters when The Hon Editor, W A Dix (Tony) G5IX produced the first Newsletter "For an experimental period of 3 Months" Maybe the understatement of the Society!!.

To stimulate operating interest the Club was organising an 80 Meter Contest with separate transmitting and receiving sections. Prizes were a pound for each section. The winner of the TR section was Peter Chadwick, G3RZP and the runner up was G3PMX. Winner of the RX section was an SWL, Peter Selwood. There were invitations for technical articles and an Exchange and Mart section became a regular feature.

It was also humorous, perhaps unintentionally. I quote: "We are sorry to learn that Doug, a G3 had VFO trouble and was confined to hospital over Christmas. Best wishes for a speedy recovery and we hope to have you back on the air soon," was the message. Talking of hospitals, in News Letter No.8 there appeared a thank-you note from Roy, G3PMX to all those who had visited him during his three week 'confinement' in hospital – (the mind boggles)! To help pass the time he had Ela install his top-band mobile receiver in his bedside locker. I wonder what Matron thought of that. Still it probably kept his mind off the dolly-bird nurses!

Just one more about hospitals. In Newsletter No.38, and this one made the local press, Eric Groome, G3ONE was given permission to work /A from a ward in Broomfield whilst undergoing his confinement there. He worked top-band using a transmitter loaned by G3RZP, Peter Chadwick and a receiver from G3WCO, John Rollason.

The early News Letter's tended to concentrate on DF news, advertising future events and recording the results of the hunts. There were snippets of news about members, bits of technical advice and quite a thriving for sale and wanted section. For example:

For Sale:
CR300 RX 15kHz to 25 MHz - £8
Pye Cambridge 2 & 4 meters - £10
VCR97 with base – 10d
2off 4CX250B + base's and chimneys - £2.50

The various News Letter editors have all left their subtle mark. They were:

Tony Dix G5IX	From Jan 1966
Jon Naunton G8CYI	Oct 1968
John Greenwood G3KRZ	Nov 1970
Jim Evans G3VDB	Nov 1972
Les Turner G8CUT) Aug 1973

Bill Pechey G4CUE	Nov 1976
Andrew Mead G8KQE	April 1980
Ian Maslen G4BYR	Nov 1984
Roy Martyr G3PMX	Mar 1986
and Ela	until March 1998
Geoff, G7KLV &	April 1998
Colin, G0TRM	
John, G8DET	Jan 2006
Geoff, G7KLV	Nov & Dec 2006
John, G8DET	Jan 2007

A noticeable change was during Andrew's reign when he introduced the "Last Month's Meeting" feature. At first the entries were quite brief and Andrew remembers they were to inform Members who could not attend - what went on - jolly good.

In early 2000 the club experimented with e-mailing the newsletters. This proved very popular and before long many members had the newsletter delivered this way, greatly reducing the clubs postage costs and the hassle of Postal copies.

The presentation of the Newsletter's developed apace with the then current reproductive machinery – Gestetner – Roneo machines, computers with dot matrix, Laser & ink jet printers. We have been treated to 'genuine re-touched pictures', topical clip-art. Special editions have featured colour and it is only cost and file size to eMail to Dial-Up Internet users that precludes it's regular use.

Thanks to Geoff, G7KLV & Trevor, M5AKA for providing the basis for the above History, modified to suite this occasion.

Historic Updates

1) A phone call from John Greenwood, G3KRZ proved that both he & Tony Dix, G5IX are well but living out of the area & send their best wishes to CARS. He also sent their "Best Wishes" to Arthur Wreford, G3EHZ.

2) I joined CARS when I was a graduate apprentice at Marconi's in, I think, 1970. I edited the Newsletter for what seemed like an age but was only a few years. I left Marconi's and the Chelmsford area in 1980 but kept up my CARS membership for a while. I met Doreen, G8NMO, in the Chelmsford years and we were married in 1982. I remember Newsletter number 100 being published but that was before I edited it.

It seems strange today but there were no email systems or photocopiers in those days.

Each issue was typed directly onto a stencil; the typewriter ribbon was removed and the printing hammers hit the stencil, making weak points in it where ink could come through. The stencil was attached to an amazing machine (usually made by Gestetner or Roneo) which fed paper in at a rate of knots. Ink was squeezed through the stencil leaving an image of quite reasonable quality. The best machines were actually faster than most of today's office photocopiers; I reckon they turned out about two sheets a second.

I think about 70% of the members worked for Marconi's and their Newsletters were delivered by the internal mail system. Marconi's also allowed the use of its facilities to produce the newsletter. We were always grateful for this because it would have cost the club a lot of money to print and send out a newsletter every month.

Bill Pechey, G4CUE

Congratulations on No.500

Colin G0TRM and I took over the newsletter jointly in April 1988 when Roy G3PMX's health was tragically failing. That was a hard act to follow! In June of that year, our third issue, we had to announce the sad news that Roy had passed away and we produced a longer than usual newsletter carrying many tributes from members.

Roy was a perfectionist and he and Ela G6HKM would work into the wee small hours to get things right. They also did the printing. Our first efforts contained many silly mistakes and errors but we gradually improved!

Roy used PageMaker but we decided to use Microsoft Publisher. Apart from the heading we continued in the form and presentation he had established, with only minor changes. In those days the newsletter consisted of one double sided sheet but over the years it grew to two sheets. I have always regretted that we never managed to establish a lively reader's letter section!

I think it was Murray G6JYB who suggested that we should try an email version, with consequent cost savings, as well as the postal version. He also suggested that we use Microsoft Word and send it as a PDF. There were a few teething troubles but we got it right eventually. It remains in that form today. The now familiar CARS roundel was Murray, G6JYB's creation in 2001.

Somewhere along the line I became Editor with Colin as Assistant Editor. Colin always checked each issue most thoroughly and I would like to propose him as the Champion Nit-Picker of all time! I will always be grateful for his never ending support and assistance!

The main purpose of the Newsletter is to keep members in touch with the club, to inform them of forthcoming events and to form a record of our activities and meetings. It is very easy to get carried away with gimmicky, colourful publications but we have resisted that approach, always with an eye on cost. I think we have achieved the aims stated above satisfactorily and economically in the past and continue to do so providing an excellent newsletter.

Rather rashly I also volunteered to edit the Friends of Chelmsford Museum newsletter. This is a much larger job, published quarterly but it doesn't have the very strict time schedule of the CARS newsletter. When the publication of both coincided, four times a year, the Boss-Lady always used to say that there was an air of tension in our house - walking on egg shells! I have to admit that she was right, but don't tell her! With advancing years I decided that the time had come to concentrate on just one publication!

At first I didn't really like the CARS "New Look" but I have to admit that it now looks far less cramped and is easier to read with the increased paragraph spacing and larger font. The return to in-house printing of the postal version with everything under the Editor's control would seem to me an advantage.

I also admit to only glancing through the email copy I receive. I know it sounds silly but I'm fairly sure I would read a postal copy more thoroughly! Does anyone else have this feeling, I wonder!

Anyway, my congratulations and best wishes to the current editorial team, they are doing a grand job! Roll on No. 600! (*in early 2016? Ed*)

Geoff G7KLV.

Did you Hear – Did you See – Part 2

GB100J Hylands Park – Onsite Report by Doreen, G8NMO

Hylands Park was extremely muddy when I arrived on Saturday 21st July, and helped put up antennas. On Tuesday the rest of the team arrived, then the 14 to 18 year-old Scouts. It was now dry and there were fewer generator problems, so we finally got some Amps.

Richard (G0REL) was our main licence holder, with eight more full UK licence holders on the Ofcom letter. As we operated a 24-hour rota, one of us was always in the shack to allow overseas amateurs to operate GB100J. One evening I coped with my first pile-up on 80m.

There was something for everyone: some were thrilled to pass greetings messages, while licensed participants operated under supervision. They could practise Morse Code, or find a hidden DF transmitter in the nearby woods. Energetic Scouts rode a bicycle generating electricity to blow up a life-sized Scout made from plastic bags.

I supervised construction; participants replaced one battery in a four-AA case with a rainbow LED poking through a hole, then stuck a translucent dove over it. A cord allowed the "badge" to be worn; glowing beautifully as evening deepened. I'll never forget the look on a Finnish Scout's face at this achievement; she had never used a soldering iron before.

Now the REAL coup! Ivor (G4GET) had spent over three years organising a contact between GB100J and the International Space Station. Read about it in RadCom. Richard and Ivor had to be at the link-up, which was in a much larger marquee with GB4FUN, so I supervised at the shack. As the satellite went over, I ran outside with my (husband's) hand-held, tuned to the downlink. Sjaak, a Dutch amateur, tuned to the uplink. Participants wandering by were amazed. One asked which antenna (waving at our antenna field) was receiving the signal. When I pointed to the rubber duck on the hand-held his jaw dropped, "but it's about 200 miles." I said there was not much in between.

Jamboree On The Air (JOTA) was conceived fifty years ago at the 1957 Jamboree in Sutton Coldfield. To celebrate, we had a party for all radio amateurs. The cake was cut by Tormud, LA8RU, our oldest operator and Maura our youngest licensed Scout. Richard Middelkoop, PA3BAR, the World JOTA Organiser, told us the dark secret that JOTA was not conceived at the Jamboree itself, but at the snack bar opposite the entrance.

To read more about the Jamboree, the daily newspaper is published on the website: <http://eng.thejamboree.org/oneword/>

Note, Not a WWW.

Doreen G8NMO

Sandford Mill on Sept-23 – GB5HF

Science & Discovery Day is on Sunday, 23rd September, 10am to 5pm. CARS will be running the HF Station in the 2MT Hut with Colin, G0TRM & Geoff, G7KLV occupying the Landing for their Morse Demonstration.

The 2 Metre Station will be run by Jim, 2E0RMI & James, 2E1GUA from out in the grounds, weather permitting.

Like to Operate, Log or Host?
Come along and see Brian or Jim at the Event.

Thanks to Dr Geoff Bowles for inviting CARS & to all CARS Members who made the events in August such a success.

Congratulations.

Computers – Love them - Hate them!

Congratulations to the British Computer Society, which is 50 years old this month. Computers have come on tremendously during this time – my feeling exponentially. Did I hear you say “so have the problems!”

I have a Tandy TRS80 which has two 5¼ Floppy drives and printed out only in capitals! This was sold in America for \$4,100 when it was first produced. One day I must dig it out and put it on e-Bay. I also have a working Amstrad 1640 which I purchased in 1987 which still does things my other two more modern computers cannot do – good old Basic.

E-Mail Discipline – Spam

Spam is a great problem. G8DET gets about 1,162 per month – this is about max size of the BT Spam Bucket. To try & protect themselves, various ISPs have introduced various procedures which mean if you do not know them, your E-Mail may well be eaten.

1. DO NOT send an E-Mail as a “Forward” without first putting some text of your own in “above” the information you are sending on.
2. DO NOT put “Re:” or “Fwd:” or use unusual characters in the Subject Line.
3. “Send” and “Receive” all E-Mails as “Plain Text”. Unfortunately, Microsoft set the Default on all the many versions of Outlook Express as “HTML” for “E-Mails” rather than Plain Text – this is poor.

Change it so:-

Outlook Express - “Tools” – “Options” – “Send”.
“Mail Sending Format” – Click on “Plain”.
Click “OK”.

Space 50 years On

Sputnik (Fellow Traveller) first flew on 4th October, 1957 – did you hear it? As a young technician I was invited to listen to it after a few days – I seem to remember it just went “bleep – bleep – bleep”. Does anyone have anything to add to that? Doppler Effect was very pronounced coming in high & leaving low.

Another Sputnik was launched on 4th November 1957 but this time it had a mongrel dog called Laika onboard.

A year after Sputnik 1, the Russians sent Lunik 3 round the Moon & photographed the “dark side”.

In December 1958 a 68kg satellite called Score transmitted President Eisenhower’s Christmas Message for 13 days – do you remember that?

John G8DET & Murray, G6JYB

October Contests from Steve G4ZUL

1.3GHz & 2.3GHz Trophy – Oct-6th

Start: 14:00, Finishes: 22:00 UTC
Sections: SF, O. (Special rules S6)
Full rules from www.vhfcc.org

For any further information please email Steve G4ZUL
contests2007@g0mwt.org.uk

Oceana DX Contests

SSB: Oct-6/7, Start 08:00, Finish 08:00 UTC. 24Hrs
CW: Oct-13/14, Start 08:00, Finish 08:00 UTC. 24Hrs
Bands: 1.8, 3.5, 7, 14, 21, 28MHz.
Exchange: RS(T) + Serial number.
Full details from www.wia.org.au

RSGB 21/28MHz CW/SSB

Oct-7, Start 07:00, Finish 19:00 UTC
Exchange: RS(T) + Serial number + District code.
Sections: Open, Restricted, QRP.
Further information & rules from www.rsgbhfcc.org

CQ WW DX – SSB

CARS are operating in this!

27/28 October, 48Hrs
Bands: 3.5, 7, 14, 21, 28MHz.
Exchange: RS + CQ Zone.
Categories:
Single operator (single band & all band)

Multi operator (single TX, Two TX, multi TX)
QSO Points: own country 1pt, own continent 2 pts,
different continent 3 points.
Multipliers: US States & VE areas 1 pt,
CQ Zones 1 Point
Final score: QSO points x Multipliers.
Full details from www.cq-amateur-radio.com

For any further information on contests or NFD, please
email Steve G4ZUL
contests2007@g0mwt.org.uk

CARS M2T Contest Callsign

CARS most recently operated its Special Contest
Call-Sign M2T in the RSGB IOTA Contest on
25/26 July. This was a single operator entry by
Terrence, G3GLL. Our grateful thanks to him.

CARS are also going to use M2T on the CQ WW
DX – SSB on the 27/28th October. Would you
like to operate from the Danbury area in this
Contest?
If so, contact Steve, above.

Steve, G4ZUL

Digital TV Switchover Arrives! - with BBC Radio Retune on Freeview

The first Digital TV Switchover starts in just a few
weeks time on Oct-17 in the Copeland and
Whitehaven area of the Borders region.
On November-14 all analogue TV broadcasts
cease in the area

Most relays will only have three Digital TV
multiplexes. So on the morning of Wednesday
3rd October, following the installation of new
equipment, BBC Radio 1, 2, 3 and 4 on Freeview
are moving into the same space as the other BBC
radio services across the UK - from multiplex A to
multiplex B. Channel numbers are not changing,
but you will need to rescan your Freeview
receiver to make sure you can continue to hear
these networks.

Dengie Quiz – 26th November

CARS are regular supporters of the Dengie Club
annual quiz. Please put Monday Nov-26th in your
diary – Their hospitality and catering is renowned at
this very enjoyable event

Cheaper Components

I gave away a number of “RS look-a-like
component books” at the August CARS Meeting.
Club members can receive 10% discount from
Rapid Electronics, contact Chris, Carl, Martyn,
Colin or John for the authorisation code.
I promised Rapid Electronics that we would not
broadcast the Code around Essex.

Carl, G3PEM.

Help Required

Colin, G0TRM does the Sound for each CARS
Meeting. He requires an Assistant – could it be
you or you, please? See Colin or a Committee
Member or E-Mail the Editor. Thanks.

Essex Repeater Group AGM

This year’s ERG AGM will be on Thursday Oct 18th
starting at 7:30 for 8pm at Danbury Village Hall.

Do come along to support the Repeaters, renew
subs etc. Free refreshments, a raffle and items for
sale will be on offer!

More CARS Centenary Newsletters

This one is Issue 500 but do you remember
Issues 100, 200, 300 or 400?. We have updated
the newsletter section of the website so you can
see the previous centenary/birthday issues

www.g0mwt.org.uk/newsletter/

And Finally...

John, G8DET edited this edition.
Material by Colin, G0TRM; Murray, G6JYB,
Trevor, M5AKA, Steve G4ZUL, Geoff, G7KLV,
John Greenwood, G3KRZ, Bill and Doreen Pechey,
G4CUE & G8NMO & Carl, G3PEM.

Do you like the slightly larger font?
Nobody has commented – do you read this?

Would you like to edit an issue of the newsletter ?
If so let us know.

Items for the next newsletter should be sent to the
editor@g0mwt.org.uk by Sunday, 21 October.