



# 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



**HAPPY NEW YEAR to all our READERS**

Newsletter No 514

Web Address: [www.g0mwt.org.uk](http://www.g0mwt.org.uk)

January 2009

This Month's Meeting – Tuesday, 6<sup>th</sup> January. 7.30pm at the Marconi Club.

## Jack Binns-"C.Q.D"-1909-R.M.S Republic by John, G8DET

On 22nd of January 1909 the R.M.S Republic left New York and headed towards the Mediterranean with 410 passengers and a crew of 300. Early the next morning in very thick fog it was rammed broadside by the Italian Liner S/S Florida. The Marconi Wireless Operator, Jack Binns sent the code letters "CQD" created by Marconi for such an emergency in 1904 but not used before in need - this started a tremendous rescue at sea which caught the public's attention and saved in the end possibly 1,625 lives (with no further loss of life after the initial crash). It still is the largest transfer of passengers at sea.

The Chief Marconi Wireless Operator on the RMS Baltic, Henry J Tattersall was a Chelmsford man who lived in First Avenue until his death, in 1980, aged 94.

Come along and hear this intriguing story which happened 100 years ago this month. As this is a general interest Meeting – All visitors are welcome.

As part of this commemoration Sandford Mill will be open on Friday, 23<sup>rd</sup> & Saturday 24<sup>th</sup> January to transmit using Morse using the Special Event Call-Sign GB0MWT (this is because all messages were all sent in Morse 100 years ago). On Sunday, 25<sup>th</sup> January, SSB will be used but if the Operator wishes to use Morse then it can be used.

CARS will also have its now famous raffle where typically 12 (plus) prizes are given away.

### Dates for your Diary

Tues. 13 <sup>th</sup> January	CARS VHF Net on 145.375MHz at 8.30pm, Local
Wed. 14 <sup>th</sup> January	CARS Committee Meeting in Danbury Village Hall at 7.30pm – All Members welcome
Fri.23 <sup>rd</sup> to Sun 25 <sup>th</sup> Jan	Extended weekend operating from Sandford Mill commemorating Jack Binns-1909.
Sunday, 1 <sup>st</sup> February	Canvey Rally. Doors open at 10.30am. CARS & ERG have tables. <a href="http://www.southessex.ars.btinternet.co.uk/canveyrally.html">http://www.southessex.ars.btinternet.co.uk/canveyrally.html</a>
Tues. 3 <sup>rd</sup> February	CARS Meeting. Amateur Radio Aerials by Tony, G4YTG

### October was the start of the CARS Membership year – Subscription is the same as last year £12.00.

For those of you who forgot your cheque books – England still does (just) have a postal service. Send your 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 2<sup>nd</sup> 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](mailto:g7klv@g0mwt.org.uk) Thanks. Only by you sending Geoff your E-Mail address, can we ensure WE get it correct!

Club Nets: Tuesdays 8-30pm: (2nd) 145.375: (3rd) 28.375/1,947 (4th) 1.947: (5th) 145.375. All +/- QRM.  
Net Controller for January is Colin G0TRM. Thanks to Patrick, M0XAP for doing it in December.

## **Last Months Meeting:- "Satellites on a Shoe-String" By Andrew Tyler, G1GKN"**

At the start of the meeting, Carl, G3PEM was presented by President Harry, G5HF with a glass mug engraved by Bert Collis of Danbury in thanks from CARS for his efforts with Training.

Carl then showed the Shield he had just had made. It is engraved at the top "In Memory of Anthony N Martin, 1967-2008. Below it is engraved "The M1FDE Constructors Competition Shield" with small shields around the edge for the years winning name. A CARS Logo is in the centre. Applause rewarded Carl for his efforts.

Andrew Tyler, G1GKN introduced himself and reminded the large audience that he came two years ago and presented "Weather Satellites". This time he proposed to call this presentation "Amateur Satellites on a Shoe String".

He did a "straw poll" with a show of hands "of those who had already owned UHF & VHF Radios" This showed that a number of Members could work a Satellite tonight.

History – Andrew played a tape of the Russian Sputnik launched in October 1957. In reply the Americans put up Explorer 1 in January 1958. four years later radio amateurs launched OSCAR 1 it was built by K6LFH in his garage in Silicon Valley and launched by sharing a launch vehicle with a commercial satellite, this was a double first, the first amateur satellite and the first multiple launch.

OSCAR 1 carried a 100mWatt transmitter and lasted for 18 days; it was not a communication satellite in the real sense as all it produced was a series of bleeps. It was quickly followed by its sister satellite OSCAR 2 which was exactly the same. March 1965 saw the launch of OSCAR 3 which was in effect a flying repeater with a 100 stations in 16 countries worked through its linear transponder during its short life.

AMSAT now build or fund amateur Satellites with 80 plus launched over the last 44 years, involving 22 Countries.

Universities are often involved in the design and production of Satellites which can contain scientific experiments to help pay for amateur radio package.

Orbits - Low Earth Orbit (LEO) Satellites orbit 400 to 2000km up. They pass over the same location twice a day, with passes lasting 10 to 15 minutes depending on the elevation angle (height above

the horizon) and enable operators to work through them from up to 3000km away.

Geostationary satellites orbit at about 36,000 km taking one day to complete one orbit therefore appear to remain stationary in the sky. No Amateur Satellites use this orbital mode yet, it's mostly commercial communication satellites such as for satellite television.

Elliptical orbit satellites orbit the earth every 12 to 18 hours, and at their closest they are <1000 km from the earth and at their furthest are > 35,000 km. AO 40 is an example of this type orbit.

Andrew then went on to describe how to work through the easiest satellites which are in Low Earth Orbit (LEO)

Typically a LEO amateur satellite has an uplink in the 2 metre band and a downlink in the 70cm band. However as Satellites are becoming more complex AMSAT have introduced configurable working allowing a flexible approach to uplink and downlink frequencies and modes.

A simple station can consist of just a hand-held 2m and 70cm dual antenna and a 5 watt dual band handheld radio; you may need a diplexer to split the 2m and 70cm feeders from the single antenna socket of your handheld depending on make.

For a fixed station antenna size is not an issue and two antennas, one for receive and one for transmit can be used, crossed Yagis are best at frequencies below 1 GHz and small dish antennas above. A Phasing Harness can be made quite easily which will allow the polarisation of each crossed Yagi to be switched to either RH or LH circular polarisation. You could also include horizontal or vertical polarisation switching for terrestrial use.

A Tracking Program is required to keep in touch of where your Satellite is at any given point in time during its orbit. Most tracking programs give a real time display of the satellites position. All tracking programs require Keplerian Elements which contain the orbit parameters for the satellite of interest, for up to date tracking the latest elements should be downloaded from the Internet.

WX Track from David Taylor is a typical example of such a program. David wrote this for weather Satellites but it works equally as well for any other satellite.

Simon Brown's (HB9DRV) HAM Radio Deluxe is Andrew's favourite tracking software but it's not just a tracking program it's a logbook, a radio control program and much much more.

All orbiting satellites exhibit Doppler Shift due to the high speed that they are travelling. As the satellite approaches you the operating frequency decreases and as it leaves you, increases. Doppler Shift of a LEO satellite can be as much as 10 kHz (depending on orbit, height, speed etc). It is not so noticeable on FM due to wider receive filters in both the ground station and the satellite. But on SSB this can be a problem unless you can operate in full duplex mode i.e. listen to the downlink whilst transmitting. A possible solution is to program in a number of discrete frequencies into your radio and recall these during the pass. Use 5kHz steps at 70cm and 2.5 kHz steps at 2m. Ham Radio Deluxe automatically adjusts your receive and transmit frequency based on the satellites orbital parameters.

Live demonstrations can always go wrong on the night. Unfortunately Andrew's live demo went wrong several nights before the meeting when AO51 had a software glitch and was off air on the night – what luck!

A quick reconfiguration and a spare 2m Low Noise Pre Amplifier solved the problem and VO52 was chosen for the demo.

The satellite was tracked by Ham Radio Deluxe which also took care of the Doppler Shift. At the appointed time Andrew put the microphone to the receiver and we could hear the Satellite 3,000kms away transmitting just a quarter of a Watt!

VO52 was built by the Indians and fired into orbit by an Indian rocket it carries two inverting linear SSB transponders, one built by Indian radio amateurs and the second by Dutch radio amateurs these are alternately switched. On the night Andrew was not certain what transponder was active due to the hurried reconfiguration of his demo.

As discussed above preferable to be able to listen to the downlink frequency so that you know the quality of your signal through the Satellite. The demonstration showed that one person we listened to was obviously not!

QSOs tend to be short with just an exchange of Callsign, Name, Locator & Signal Report. This allows the maximum number of QSO's to take place during the short period that the satellite is above the Horizon.

You can buy a commercial Rotator to steer your fixed station beam and pay up to £500 for an elevation over azimuth or make one! Andrew then showed a home made system he has under construction the azimuth rotator used bits from an old Epson Printer!

He showed a home movie (using Function + F4 & waiting 30 seconds for Windows to catch up) of his prototype elevation rotator. The main problem with this first design was waterproofing around the lead screw. The solution (not yet built) is to use a commercial jack from a satellite television dish which is fully waterproofed. Both the rotators will be controlled by Ham Radio Deluxe using the G6LVB tracker; details can be obtained from G6LVB's web page or from AMSAT-UK'

After the refreshment break, Andrew pulled out 20 Raffle prize winning tickets.

The future of amateur satellites is good with eight satellites under construction including the long awaited AMSAT Eagle, which will carry several linear transponders and at its furthest distance from the earth will give coverage over most of Europe and into North and South America.

The cost of building and launching an Amateur Satellite is a fortune so, if your interested, join AMSAT UK and make a contribution to the amateur satellite program.

**John G8DET and Andrew G1GKN.**

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**Sandford Mill – CQD - Jack Binns – 1909.**

To commemorate the 100th Anniversary of the first use of CQD at sea, Sandford Mill will be open on Friday, 23rd & Saturday 24th January from 9am to 5pm for the transmission of Morse only using GB0MWT.

On Sunday, 25th January, Sandford Mill will be open for SSB & Morse from 9am to 5pm. Saturday, 24th is also to celebrate SOS and is organised nationally by the RNLI.

Please put these dates in your diary and tell Brian, G3CVI at the January Meeting which days you would like to Operate or Log or simply attend to assist with running the event.

**John G8DET**

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**AWARDS FOR ALL - LOTTERY AWARD**

CARS have awarded W&S the job of supplying a number of radio items at a "good price" and 15% VAT. Saturday December 20<sup>th</sup> saw a CARS group take delivery of the items in time for the first 2009 Foundation Course.

**John G8DET.**

## Computing – Feedback (1)

It was noticed that a number of CARS Members use another Spam Filter to that mentioned in the December Newsletter. It does leave a message at the end of each E-Mail though.

*"I am using the free version of SPAMfighter. We are a community of 5.7 million users fighting spam. SPAMfighter has removed 1750 of my spam emails to date. Get the free SPAMfighter here: <http://www.spamfighter.com/en>*

*The Professional version does not have this message".*

Any comments about this program, please.

**John G8DET**

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## Computing – Feedback (2)

To connect to the Internet I have used a "3" Dongle from January until this week but my service was getting slower & slower. It had been 750kbs/sec Down but limited to 58kbs/sec Up. I was typically getting 135kbs/sec Down & 49kbs/sec Up - sometimes it was down to 22kbs/sec both ways.

My Son gave me (for Christmas) a Vodafone "Hauwei" Dongle last week and I got 450kbs/sec Down & 350kbs/sec Up using 3G. This slowed down & quite by accident we found it was due to the USB Port on my computer. It appears it can slow down on its own & no one seems to know much about this aspect. Swapping the Dongle around the ports speeds up things amazingly. Murray, G6JYB has spotted I have 6 USB1.1 and 4 USB2 Ports – so this could be another consideration. Most things are so slow they do not matter, eg printers however scanners & external hard drives I rate as being fast. Another factor controlling data throughput is the Up speed due to the "hand shaking" which goes on during transmission of data

The best I have got is 1.28Megbs/sec Down & 470kbs/sec Up when it seems to fly by my usual standard. Colin, G0TRM says he gets up to 5Mbs/sec Down & 340kbs/sec Up on a BT line.

The tariff for the Vodafone is £15/month for 18 month period and with a 3GBytes usage/month.

**John G8DET**

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## January Sports Radio (Contests) from Steve, G4ZUL.

### ARRL RTTY Roundup

03/04 January (operate no more than 24hrs)  
Exchange: RST + serial number.

Categories: single op, multi op  
high power, low power.

Further information from [www.arrl.org/contests](http://www.arrl.org/contests)

### RSGB Club Championship (80 metres)

This contest runs from January to July each year and is a series of short evening contests.

Dates for January as follows:

CW 05 January 20:00 - 21:30 LOCAL

SSB 14 January 20:00 - 21:30 LOCAL

DATA 22 January 20:00 - 21:30 LOCAL

Please try to support these short contests and send your log by email to [www.rsgbhfcc.org](http://www.rsgbhfcc.org) using the excellent free SD contest logger by EI5DI, download from [www.ei5di.com](http://www.ei5di.com)

### RSGB Affiliated Societies Contests (80 metres)

Each year in January the RSGB organises two AFS contests, Sunday, 11<sup>th</sup> January, CW and Saturday 17th January, SSB. Each Contest is 4 hours in duration and runs from 14:00 to 18:00Z.

Please try and find some time to operate these contests, they are good fun, and with more CARS Members taking part I'm sure that we could achieve some good results.

11 January, CW

Start 14:00 – Finish 18:00 UTC

Exchange: RST + serial number

17 January, SSB

Start: 14:00 – Finish 18:00 UTC

Exchange: RS + serial number.

Full rules from [www.rsgbhfcc.org](http://www.rsgbhfcc.org)

### CQ WW 160 Metre / CW

24/25 January, 48hrs.

Exchange: RST + prefix or country abbreviation.

Categories: single op, multi op.

High power, low power, QRP.

Scoring: own country 2 points, other countries same. Continent 5 points.

other continents 10 points.

maritime mobile 5 points.

Multiplier: sum of states/provinces/DXCC countries worked. Final score: QSO points x the sum of all multipliers. Further information from

[www.cq-amateur-radio.com](http://www.cq-amateur-radio.com)

For any further information please email Steve G4ZUL [contests2009@g0mwt.org.uk](mailto:contests2009@g0mwt.org.uk)

**Steve G4ZUL**

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## Phase out of Conventional Light Bulbs.

A European Union report has recommended banning conventional incandescent light bulbs by 2012 to save energy and cut down on greenhouse gas emissions. Most light bulbs sold in the EU are of the type pioneered by Thomas Edison in 1879.

The report says the EU could save up to \$12bn (£8bn) a year in energy bills by switching to low-energy bulbs. The report needs the backing of the European parliament and all 27 member states to become law.

Phase out - Once approved, the EU would phase out conventional bulbs between September 2009 and September 2012.

Consumers will choose between long-life fluorescent bulbs or halogen lamps. The EU says the measure will save households up to 50 euros (\$64, £48) a year and pump up to 10bn euros (\$13bn) into the economy. The new-style lamps carry energy savings of 25% to 75% compared to traditional incandescent bulbs, which are little changed since they were invented almost 130 years ago.

The report also says the switch will reduce carbon dioxide emissions by 12 million metric tonnes a year, and save energy equivalent to the consumption of 11 million European households. Phasing out will have to be gradual so that "production facilities could adapt to the new lighting" and the quality of illumination could be ensured.

Several nations including Australia, Canada and the Philippines have already announced they will phase out or restrict sales of traditional bulbs.

*Editorial comment* – The EU have not organised how to dispose of the "old" energy saving bulbs. RF Noise Pollution is another major problem. Recently the NZ Government announced that they are NOT banning the ordinary light bulb – which is a reversal of their policy.

<http://national.org.nz/Article.aspx?ArticleID=29097>

## Murray, G6JYB & Trevor, M5AKA

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### Amateur Radio Website

While on the CARS 10 Metre Net on Tuesday, 16<sup>th</sup> December, Geoff, G3EDM happened to mention that he had come across a very useful website with stacks of useful Amateur Radio transmitters & receivers, diagrams, manuals, magazines etc.

[www.cqham.ru](http://www.cqham.ru)

It is a Russian website but click on the UK flag and it switches to English. Most information is from about 1955 to when the Berlin Wall fell down – wonder which wing of the K\*B the author(s) worked for?

## Geoff, G3EDM

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### HF Broadband & Power Line Interference.

The November 2008 issue of the *IEEE Communications* magazine carries an article on the potential effects of broadband power line telecommunications on the HF spectrum.

A number of companies such as **BT** supply products that transmit a broadband HF radio signal over the home mains power supply. One of the latest is from **Logitech** who have launched their new Home Security Video Cameras. This system sends the video from up to six cameras to the PC using the Homeplug that transmits over the HF spectrum covering Broadcast and Amateur bands.

The use of the mains power supply to provide internet access or transfer video can not only cause severe interference to the reception of broadcast radio stations in nearby houses it could also impact on the military users in this key part of the radio spectrum potentially jeopardizing Homeland Security.

Some of you may remember seeing Paul Bigwood, G3WYW, during the CARS visit to W&S in January 2006. In a posting to the UKQRM group Paul wrote the following about the IEEE article, reproduced here with his permission:

*The IEEE article is a rehash of the NATO report. Dr Arto Chubukjian, the lead author of the article was also the chair of the group that produced the report.*

*The quote "A great number of in-house PLT ...." in the IEEE report is also in the NATO Report Conclusions and Recommendations Chapter 9 Section 1c. The graphs are also reprints from the NATO Paper.*

*The NATO IST 050 RTG report is a seminal research paper on PLT systems and xDSL systems and the effects they contribute to the HF noise floor and is recommended reading for anyone who wants to know the how and why of QRM from these systems.*

*We are against PLT in any form that causes detectable QRM across the whole shortwave spectrum not only the Amateur Bands and hope that OFCOM can be persuaded by the evidence to ban these devices sooner rather than later.*

A link to the original NATO Report can be found at [http://www.southgatearc.org/news/september2007/nato\\_bpl\\_report.htm](http://www.southgatearc.org/news/september2007/nato_bpl_report.htm)

The UKQRM group was started by Shortwave listeners. Its aim is to save shortwave radio listening whose very existence is under threat from Broadband Power Line adaptors. The groups website can be seen at <http://www.ukqrm.org/> and contains videos showing the appalling interference these devices can produce. There is also a page that explains how to lodge a formal interference complaint with Ofcom.

## **Trevor, M5AKA**

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### **Training**

The second KEGS Foundation Course starts 8<sup>th</sup> January and runs for 6 weeks.

Following that, CARS are running another 6 week evening Foundation Training Course at Danbury Village Hall starting Thursday 26th February.

Members can help by telling people about the course and by putting up posters in public places. We need everyone to help spread the word about the course in whatever way they can. For instance you could write a short item for your local community newsletter or local newspapers. We need to make the general public aware of the course.

A poster for display can be downloaded from: -

<http://www.g0mwt.org.uk/training/poster2.pdf>

The recent Advanced class drew to a close with the exam taking place on Monday 8th December. We wish all candidates every success.

For details of all CARS training courses contact Clive Ward G1EUC  
Tel: 01245-224577 Mob: 07860-418835  
E-mail: training2008 (at) g0mwt.org.uk

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### **For Sale**

Two J-Beam 5-element crossed Yagis for 2m. Probably towards the end of production, they have been rescued from store, and are still in original packing and un-used. Complete with 2" pole mounting bracket and phasing harness (with instructions) for circular polarisation - left or right hand as you wish. Superb quality, as you probably know. £50-00 ovno each.

I can bring them to a CARS meeting or you can collect from my QTH by arrangement.

Dave G3PEN 01376 326487 (Braintree)  
E-Mail [davepennyg3pen@yahoo.co.uk](mailto:davepennyg3pen@yahoo.co.uk)

## **David G3PEN**

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### **Silent Key Sale**

YAESU FRG-7 Communication Receiver, Reasonable/Good Condition, all seems to work OK, although Volume Control is a bit noisy and could do with some switch cleaner, unfortunately no handbook - £15.

David M1DCJ - 01277 656325  
E-Mail [davidt.james@virgin.net](mailto:davidt.james@virgin.net)

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### **Radio but not Amateur Radio**

On your Mobile Phone, key in **\*#06#**  
A 15 digit Serial Number should present itself – make a note of this number & if your Mobile is lost or stolen inform the supplier of this number so that the phone can be made useless – even if the SIM Card is changed.

## **John G8DET**

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### **New London 2m D-STAR Repeater**

A new 2m D-STAR repeater GB7OK serving London and Kent is now on the air. Located in Bromley, locator JO01BI, the output frequency is 145.7125 MHz and the input 145.1125 MHz. It replaces GB3OK which used FM

Further information is available at: -

<http://www.ukrepeater.net/repeaters/gb7ok.htm>

GB7OK website: -  
<http://www.gb7ok.com/>

## **Trevor, M5AKA**

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### **And Finally.....**

John G8DET edited this edition. Material by; Murray G6JYB, Trevor M5AKA, Steve G4ZUL & Geoff, G3EDM. Satellite write-up corrected by Andrew Tyler, G1GKN.

Items for the next Newsletter should be sent to the [editor@g0mwt.org.uk](mailto:editor@g0mwt.org.uk) by Friday, Thursday, 16th January.

**Happy New Year to all our Readers.**