



## 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 504

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

February 2008

**This Month's Meeting – Tuesday, 5<sup>th</sup> February. 7.30pm at the Marconi Club.**

### **Micro-DXpeditioning – Roger Western, G3SXW**

Roger is travelling to Chelmsford to tell us (and show us) how we can pack-up and take a small (micro) radio transmitter & receiving station to work portable.

This is the opposite of DX Expeditions where 3 tons of equipment is shipped to a unique location.

Roger's CV reads: - Roger Western. Licensed: February 1964. International Adviser to CQ World-Wide Contest Committee, CQ Contest Hall of Fame Nr 30 May 1998, CQ DX Hall of Fame May 2007.  
Current Call-Signs: G3SXW, G0AAA, GX0AAA, M5A. Past Call-Sign: EP2IA  
QSL Manager for 3X5A, 5U5Z, TZ5A, XT2DX.

Come along to this interesting presentation by an expert in the field.

There will be our usual high quality Raffle.

### **James (Jimmy) Watt G6ZC – Silent Key**

It is with regret that CARS have learnt that James Watt, G6ZC passed away on 12<sup>th</sup> January 2008, aged 93.

Service at Chelmsford Crematorium on Monday, 28<sup>th</sup> January at 11.45am Family flowers only.  
Afterwards at the South Lodge Hotel. CM2 0AR. Opposite BBC Essex.

Donations to either Essex Wildlife Trust or Friends of Orkney Wireless Museum (see latest RadCom).

C/O Paul King, Funeral Directors, 6 Corporation Road, CHELMSFORD. CM1 2AR  
Tel 01245 264411.

We extend our sympathy to Mrs Mary Watt and the Family.

### **Dates for your Diary**

Sunday 3 <sup>rd</sup> February	Canvey Rally – Paddocks Community Centre – Canvey Island – Doors open 10.30am.
February 2008	Morse Classes in Danbury Village Hall – Carl, G3PEM.
Wed 13 <sup>th</sup> February	CARS Committee Meeting - Danbury Village Hall at 7.30pm - All welcome
Tuesday 4 <sup>th</sup> March	CARS Social Meeting – Hylands House – Ceri Lowen & Richard Oscroft

Thanks to Geoff, G7KLV for arranging the Postal Members Newsletter – could it go by E-Mail?  
Inform Membership Secretary, Brian, G3CVI of any changes to your call-sign, postal or E-Mail address, etc.  
Brian would also be delighted to receive your Subscription for 2007 to 2008 period. It is now £12.  
Send a SAE and a cheque made out to C.A.R.S. to Mr B Thwaites, G3CVI, 118 Baddow Hall Crescent, Great Baddow. CHELMSFORD. CM2 7BU – Thanks.

Club Nets: Tuesdays 8-30pm: (2nd) 145.375: (3rd) 28.375/1,947 (4th) 1.947: (5th) 145.375. All +/- QRM.  
**Net Controller for February is : - Geoff, G3EDM.**

## **Last Months Meeting:- Software Defined Radios by Peter Waters, G3OJV of Waters & Stanton.**

Chairman John, G8DET welcomed Members & visitors who had travelled from Cambridge, Gatwick, Suffolk & Kent. The evening started with Carl, G3PEM informing the large audience (of some 85 or so) that 3 out of the 4 candidates for the recent Advanced Amateur Radio Exam had passed. Well deserved clap. Gwyn, G4FKH then invited anyone who could transmit & receive at 15 words per minute to join him for an Advanced Morse Class.

As the Lecturer was late, Murray, G6JYB fired up his laptop & presented an Introduction to SDR.

Murray's slides introduced the concept of SDR and concentrated on the Softrock RX which really started off the popularity of the technique.

Peter Waters, G3OJV of Waters & Stanton arrived and apologised for being late but soon set up his computer and started by saying he was first licensed in the late 1960s. He also liked to compose music using his computer at home and said that virtually every record, CD and DVD purchased would have been produced using Music Software, mainly on a Mac computer. He argued that if the music industry used computers & software why did the Radio Amateurs not use it?

Peter briefly took the audience on a history lesson - starting with a 100 Watt AM TX which needed a 100 Watt Modulator & big PSU - then SSB which produced the quote "throw away half the audio!".

SDR was not computer controlled radio - that had been available for a number of years. The Flex 5000A was the most advanced (and expensive at £1,700) SDR available but had an impressive specification. A photograph of it was shown as W&S had sold all the stock they had! The back was more impressive than the front (just about an On/Off switch) - it contained its own purpose build Sound Card and a FET 100 Watt transmitter covering 160m to 6m and feeds the PC with a Firewire cable. Look at [www.flex-radio.com](http://www.flex-radio.com)

Peter showed a movie clip of stored RF on his computer and demonstrated how the mouse could tune the bandwidth and the frequency. This was displayed on the screen with sound amplified by the CARS PA system with Colin, G0TRM in control.

If you would like a CD to run on a computer of a number of reviews and notes to do with SDR & in particular Flex 1000 & 5000, drop an E-Mail to: - [peter.waters@wsplc.com](mailto:peter.waters@wsplc.com) with your postal address. Use "My Computer" to look at the disk.

To reinforce the fact that the Software of SDR is "Open Sourced", e.g. free and available for all to use, John Melton, G0ORX produced another Apple laptop & showed his software for the Flex 1000. This was well structured and impressive.

The meeting showed their appreciation to Murray, Peter & John Melton (who then had to drive to nearby Gatwick Airport). Meeting closed at 10pm.

## **Post Meeting Comment by Geoff, G3EDM.**

For those getting interested in SDR, I would recommend a read of Chapter 8 of the newly published 9th Edition of the RSGB Radio Communications Handbook. This 52 pages chapter is entirely devoted to SDR and is contributed by VK6VZ (Steve Ireland) and VK6APH (Phil Harman) who also write about SDR in RadCom (see December RadCom, p26/27 for Penelope TX). Incidentally, I have worked both of these Western Australian stations on HF using analogue equipment.

Steve is especially interested in DX on 160m. He has been able to see stations on the 160m SDR bandscope display that were not even heard on an analogue FT1000 transceiver! This type of SDR display even enables you to see, and thereby read, the CW signals (and if you miss the copy first time you can replay it).

What wasn't mentioned at the talks on Tuesday was the fact that you can "build" lots of test equipment using software e.g. signal generators, oscilloscopes, spectrum analysers and digital filters. Another thing that can be done is that if someone is transmitting a lot of splatter you can record it and email it to him!

The fact that the SDR approach to Amateur Radio involves only 1% of the hardware components of an analogue transceiver must mean the system becomes a hundred times more reliable. Although the weakness in the system is now transferred to the reliability of the modern PC which, in my experience, is less than ten years before a major fault and much less for the occasional crash. So PC reliability must improve.

Finally, we might think about the definition of SDR accepted by Steve and Phil. That is to say: - "A software defined radio refers to wireless communication in which the transmitter modulation is

generated or defined by a computer ... and the receiver uses a computer to recover the signal intelligence (information). [My own preference in brackets]. To select the desired modulation type, the proper programmes must be run by the computer which controls the transmitter and receiver."

**Geoff, G3EDM**

---

### **Advanced Morse Classes**

Gwyn, G4FKH invites anyone who could transmit & receive at 15 words per minute to join him for an Advanced Morse Class. Gwyn says "there is an excellent program which teaches and enables one to enhance their CW speed. It is "MRX" and can be found on URL <http://www.mrx.com.au> and it's free". If you would like to put your name forward, please tell "The Editor" and it will be added to the list.

---

### **Low price Short Wave Radios Back in Superdrug (see CARS January Newsletter)**

The UK High Street store Superdrug were advertised at £3.99, however CARS Members reported buying them immediately after Christmas for £1.99 – then they ran out! They are back in stock on a daily basis.

Simon Wilton, G7HCD kindly purchased seven which were sold at the January Meeting and went like hot cakes.

---

### **New Sun Spot Cycle Started?**

It has been reported that 4 to 5<sup>th</sup> January a Sun Spot was seen on the Sun with a reverse Magnetic Field – this could indicate that a New Solar Cycle (24) has actually started. Cycle 23 sunspots are expected to continue to appear for several months in 2008.

The average duration of the sunspot cycle is 11.1 years, but cycles as short as 9 years and as long as 14 years have been observed.

An excellent read: -

[http://en.wikipedia.org/wiki/Solar\\_cycle](http://en.wikipedia.org/wiki/Solar_cycle) and

<http://www.petermeadows.com/html/drawings08m01.html>. and also

[http://www.esa.int/esaCP/SEMT1J3MDAF\\_index\\_1.html](http://www.esa.int/esaCP/SEMT1J3MDAF_index_1.html)

**Carl G3PEM, Murray, G6YJB and CARS Member, Peter Meadows, SWL.**

---

### **Energy Saving Floodlights.**

Typically Radio Amateurs use a 500 Watt Floodlight to illuminate the path to the Shack at

the bottom of the garden. They are also used as a burglar deterrent or to illuminate ones way to the car or garage. They tend to follow a pattern of construction with a cast aluminium case housing a 500 Watt Quartz Halogen lamp with a PIR Detector mounted below.

Trouble with them is

1) They get very hot - one burnt down Windsor Castle - so should be mounted a metre away from anything combustible.

2) If a Mains Failure results in a 2 to 4 second break, the sensor in the PIR unit thinks it should switch to Manual Mode and stay ON!

This is OK if one is about & can switch OFF the lamp for a minute and then switch back ON – lamp Resets itself & life goes on. Problem comes when one is away from the house, maybe on holiday – lamp remains ON costing 1 Unit every 2 hours!

Recently the writer spotted in B&Q a variation of this set-up. It is called a "Maximo Energy Saving Floodlight with PIR, model 55759". Having got it home it turned out to be a bog standard 500 Watt Floodlight, but with a relay (instead of a Triac). Packed with it was a special version of a 24 Watt, Compact Fluorescent Lamp which has a plastic unit with end contacts designed to fit between the 118mm lighting points.

The light output is a good white colour and it produces plenty of light immediately (but gets brighter after 5 minutes). Light output is about that which a 150 Watt Halogen would produce – 2,000 Lumens. However, it is more than adequate, and if left on for a fortnight would not have cost much. Runs very cool compared with the 500 Watt bulb! The standing load to the lamp unit is 6 Watts for the PIR. As the tubes of the Compact Lamp are positioned more forward than the Halogen bulb, the angle of illumination is wider at about 155 degrees. This particular unit is imported by "Ring Lighting" of Leeds.

Don't forget one can easily purchase and fit a 300 Watt Halogen in the 500 Watt housing (called R7s) easily but bulbs are available in the following sizes :-

100 (1300 Lumen); 150 (2200 Lm); 200 (3200Lm)  
250 (4000Lm); 300 (5000Lm) & 500 (9500Lm).

Similarly, the smaller and typically 150 Watt housing (78mm) has bulbs available in the following ranges: -

75 (900 Lumens); 100 (1200Lm); 150 (2000Lm);  
200 (3000Lm); & 250 (4000Lm).

**John G8DET.**

## Electric Power Costing

To continue the Pound, Shillings & Pence costing of electricity started by Ken, G7RFT, Theo Stanley SWL of Writtle has been busy with my Power Meter. He started by observing that there are 365 x 24 Hours in the year = 8,760. This means if your PSU/Rig takes 1 Watt, you pay for 8.76KWatt Hours/Year.

If the supply is to a security light which only consumes 1 Watt and only comes on during the hours of darkness the figure is approx 4.0KWatt Hours/Year, Normal & 2.8KWatt Hours/Year on Economy 7.

Typically, a PIR takes 4 Watts all the time it is connected to the mains (this is ignoring the light power). Problem comes when one adds up all the PIRs/Night-time Switches associated with a house, typically 4. This is 4 at 4 Watt each (minimum). 4 x 4 = 16 times 8.76 = 140KWatt Hours. At 10p/Unit this is £14 simply to have them installed. 10p is cheap electric in 2008! At my house I have 7!

Theo has replaced his mains driven bedside Alarm Radio with a battery version as it was costing over £14 per year to run. Rechargeable batteries being cheaper to recharge. Comments, please.

## John G8DET & Theo Stanley SWL.

---

### February Contests from Steve G4ZUL

#### **432Mhz AFS Contest**

03 February.

Starts 09:00 UTC

Finish 13:00 UTC

Sections: SF, O. (special rules S3).

Please refer to the RSGB website

<http://www.vhfcc.org> for full details of all VHF contests.

#### **RSGB Club Championship (80 metres)**

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

Dates for February as follows:

SSB 04 February. 20:00 - 21:30 LOCAL

DATA 13 February 20:00 - 21:30 LOCAL

CW 21 February 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 <http://www.ei5di.com>

#### **CQ WW WPX / RTTY**

09/10 February, 48HRS

Exchange: RST + serial number

Categories: Single operator (single band & all band)

Multi operator (single TX, Multi two, Multi TX)

Scoring: 3 points on 28, 21, 14Mhz / 6 points on 7, 3.5, 1.8Mhz

If on different continent and if same continent then 1 point & 2 points respectively.

Prefix multipliers: The number of valid prefixes worked.

For full details please refer to CQ Magazine or <http://www.cq-amateur-radio.com>

#### **ARRL International DX / CW**

16/17 February, 48HRS

Exchange: RST + transmitter power.

Categories: Single op. = all band, single band, high power, Low power, QRP. Multi op. = single TX, two TX, multi TX..

Scoring: 3 points per QSO.

Multiplier: sum of states/provinces worked.

Final score: QSO points x multipliers.

Further information & rules from

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

#### **CQ WW 160 Metre / SSB**

23/24 February, 48HRS.

Exchange: RS + prefix or country abbreviation.

Categories: single op, multi op, High power, low power & QRP.

Scoring: own country 2 points, other countries 2 points, 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: - [contests2008@g0mwt.org.uk](mailto:contests2008@g0mwt.org.uk)

---

#### **Bromley 23cm Repeater GB3BK Operational**

The 23 cm FM repeater GB3BK in Bromley, Kent come on air Sunday 6th January 2008. There may still be some teething problems so reports and feedback are welcomed which can be sent to "gb3bk at btinternet.com" or from the website <http://www.wiggysweb.co.uk>

Channel Input: 1293.850; Output: 1299.850MHz.

QTHR: - JO01AK Location: - Bromley Kent

CTCSS frequency is 103.5Hz (Tone-G).

#### **Trevor M5AKA**

## Video - Making a Triode

A video about making a triode has been made available on the web. It was posted by F2FO and shows step by step the making of a Triode valve (tube). It is called "Fabrication d'une lampe triode" but the soundtrack is simply background music so there are no language difficulties.

The construction is fascinating to watch, see it at

[http://www.dailymotion.com/video/x3wrzo\\_fabrication-dune-lampe-triode\\_tech](http://www.dailymotion.com/video/x3wrzo_fabrication-dune-lampe-triode_tech)

## Trevor M5AKA

---

### The Windbelt

Working in Haiti, Shawn Frayne, a 28-year-old inventor based in Mountain View, California, saw the need for small-scale wind power to juice LED lamps and radios in the homes of the poor.

So he took a new tack, studying the way vibrations caused by the wind led to the collapse in 1940 of Washington's Tacoma Narrows Bridge (aka Galloping Gertie).

Frayne's device, which he calls a Windbelt, is a taut membrane fitted with a pair of magnets that oscillate between metal coils. Prototypes have generated 40 milliwatts in 10-mph slivers of wind, making his device 10 to 30 times as efficient as the best microturbines.

<http://www.popularmechanics.com/technology/industry/4224763.html>

## Trevor M5AKA

---

### CARS at the Canvey Rally Sunday 3rd February 2008 – Doors 10.30am.

We urgently need all your unwanted electrical, electronic, wireless, radio, Hi-Fi, Lo-Fi, and surplus amateur gear for sale on our 2 Tables at Canvey. Anything you think might sell or for that matter, might not, we will be glad to take it off your hands, but PLEASE, NO large TVs or monitors or furniture! We can arrange collection nearer the time or of course if you prefer, you could deliver to Geoff, G7KLV in Great Baddow (473822) or Colin, G0TRM in Danbury (223835). If it does not work Geoff will try his hardest to make it do so, if there is time.

This Rally and the Table Top sale are our main sources of CARS Income so your help is much needed. Canvey is one of the best local events. CARS members will also be running the ERG and RNARS stands and look forward to welcoming you and your support.

The organization is always good, as is the food and the drink. See you there.

## Colin, G0TRM

---

### Have you Paid your Subs?

This is a friendly notice to remind you that the CARS Subscriptions are now overdue for 2007 to 2008. If you have NOT paid you may not even be able to read this!

It is easy to pay – see the front page for the Treasurer's details.

For those of you who have paid – "Thank You" and a Happy New Year.

---

### Intermediate Course

The next Intermediate Course starts on Thursday 6th March with the exam on 15<sup>th</sup> May. It takes place at Danbury Village Hall and runs from 7pm until 9pm each Thursday evening.

To take the Intermediate you must have first passed the Foundation. For more details contact Clive G1EUC on Tel: 01245-224577  
Mob:07860-418835  
E-mail: [training2008@g0mwt.org.uk](mailto:training2008@g0mwt.org.uk)

### And

#### Helpers Wanted - Training

Helpers are needed to make the tea/coffee at the Foundation and Morse classes held every Thursday evening at Danbury Village Hall. If you can help contact Clive G1EUC Tel: 01245-224577 E-mail: [training2008@g0mwt.org.uk](mailto:training2008@g0mwt.org.uk)

#### 73 Trevor M5AKA

#### Helpers Wanted - Raffle

Helpers are needed to assist with the CARS Monthly Meeting Raffle table. Apply onsite.

---

### And Finally...

John, G8DET edited this edition.  
Material by Colin, G0TRM; Murray, G6JYB;  
Trevor, M5AKA; Steve G4ZUL.

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](mailto:editor@g0mwt.org.uk) by Friday, 22nd February.