



Chelmsford Amateur Radio Society

Established 1936

Affiliated to the RSGB Club Call Sign: G0MWT
President: Harry Heap G5HF Chairman: John Bowen G8DET
Treasurer: Brian Thwaites G3CVI Vice Chairman Martyn Medcalf G1EFL



Newsletter No 528

Web Address: www.g0mwt.org.uk

March 2010

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

"The Modernisation of the London Underground" **By Mark Sanderson, M0IEO**

How many of you have used the underground railway in London either to get to work or at the weekend for a day out in London? Have you ever stopped to wonder how the system, which was first opened in 1863, is kept running? How is maintenance carried out on tunnels, which in places are nearly 150 years old? As the infrastructure grows older it requires more work to keep the system running and with the eyes of the World being cast on London in 2012 with the Olympics coming to town, it is time to spruce the Underground up and bring it up-to-date.

The showcase of the underground is Oxford Circus station which is coming to the end of an £80 Million refurbishment, but with the station open to the public from 06:00 to 00:30hrs seven days a week, how does the work get done? Join Mark at the CARS March meeting and find out about London's other world.

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

Dates for your Diary

Fri/Sat/Sun 26/27/28 th Feb.	CARS Operating GB75CH from BAE Systems at Great Baddow.
Wed, 3 rd March	"2MT Writtle" Tim Wander G6GUX, Cramphorn Theatre, 8pm.
Sun, 7 th March	CDARC Rally Cambridge
Tue, 9 th March	CARS VHF Net on 145.375MHz
Wed, 10 th March	CARS Committee Meeting – Danbury Village Hall – 7.30pm. All welcome.
Tue, 16 th March	CARS UHF Net on GB3ER – The Danbury 70cm FM Repeater
Thursday, 18 th March	CARS Intermediate Training Course starts – Danbury Village Hall.
Tuesday, 6 th April.	CARS Meeting - "World War II Wireless Intercept and Secret Stations". By Stan Ames G4OAV.
Saturday, 24 th April	CARS – International Marconi Day at Sandford Mill, 10am to 5pm.

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.

Our Treasurer, Brian notes that with the snow and ice and cancelling the January Meeting a number of Members have not had the opportunity to pay their Subscription this year. Please remember to bring your Cheque Book – yes, cheques are still legal tender!

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 March is Ron, M3CAM **Thanks to John G8DET & Colin, G0TRM for February.**

Last Months Meeting:- "The Loop Fed Array" Yagi" By Justin Johnson, G0KSC

It was a dank, cold night but thankfully no snow or ice and the hall was full to the extent more chairs had to be produced. Chairman John welcomed CARS Members and a number of visitors including Chris Street, 2E0FPE, Secretary of the North Wakefield Radio Club, Dave Gould, G3UEG and G4YBN from Harlow. CARS Meetings Secretary, John Yates, G1UZD looked after a visitor from New Zealand but at the time of writing, do not have a name or callsign. Assistance was also given by Bob, G4MDB - thanks.

Continuing our Aerial theme from February last year when Tony, G4YTG presented "Amateur Aerials", Justin presented an Amateur Construction talk based on his professional designs of Yagi Aerials.

Justin reminded the large audience of the typical characteristics of a Yagi Aerial. He then went on to explain the advantages of the Optimised Wide-band Array with 50 Ohm at feed point so no matching unit is required. Wide-band performance with low VSWR and very high antenna efficiency as the result. High stability with no weather issues. Ideally easy to build at home.

Justin was quite critical of many published advertisements for professionally produced aerials which when tested did not meet the maker's claims – but they did produce a sale!

To ensure a stable aerial Justin advised isolating all elements from the support boom by using a welding bracket - a follow on from his initial Perspex isolator. He maintained that with time corrosion produced a different voltage at each cross connection point which altered the characteristics of the aerial in varying temperatures and snowy conditions, etc.

Justin has considered the lateral thinking of mounting the Folded Dipole in the same plane as the Reflector and Directors. This reduces the wind loading and changes its characteristics so it is essential to have a very good computer modelling program - too complex to do it empirically.

He then talked about the Soft Aluminium Bender used to bend the corners of the Dipole. This is used to produce similar nice rounded corners which are spot welded in position once the design is stabilised and proven.

A number of different connections had been investigated including a Pawsey Matching Stub and a number of Ferrite Rings.

Slides were shown which indicated the very smooth VSWR and "Gain" characteristics. A 2m example was shown with a boom length of about 21 feet.

A 5 element, 4 Metre model was also exhibited which was much shorter at only about 8 foot.

Justin said that his designs were the subject of a Patent but he was happy for Radio Amateurs to produce one for use at home. His Aerials were being produced commercially by six manufacturers throughout the World – a tribute for all the hard work which he had put in.

He answered a number of questions and after a rousing clap the meeting broke for refreshments.

GB75CH Special Event

After the break and the Raffle at which a number of visitors won prizes, Murray told of the GB75CH commemorative event on Friday, 26th February at BAE Systems, Great Baddow.

The 365ft mast at Great Baddow is the last wholly intact example from the Chain Home radar system that was developed by Sir Robert Watson-Watt and his team at Bawdsey Manor following the Daventry Experiment on 26-Feb-1935, and played such a vital role supporting the RAF in 1940. 26/27/28th February sees the 75th anniversary of the original experiment at Daventry. Amateur Special Event Stations at Baddow, Daventry and Bawdsey will be marking this historic development.

See www.chainhome.org.uk

As the Mast area is a 'Secure Site', please contact CARS before trying to gain any access.

Operators, Loggers & Hosts are required for the 3 day event – please contact The Editor stating Name, Call-sign and Registration number of your car and when you would like to attend.

Connectors - Additional comment.

1) C Connector

Like a large BNC and so named after Carl Concelman of the Amphenol Corporation (1930s).

2) PL-259

1930s Amphenol "UHF Connector" originally invented by E Clark Quackenbush. It was called the UHF because in those days 300MHz was UHF. Now called Plug PL259 & Socket SO239 but should really be called the "CQ Connector"!

3) BNC's

So named after "Bayonet Neill Concelman.

4) TNC

So named after "Threaded Neill Concelman.

5) N Type

Named after Paul Neill of Bell Laboratories.

John G8DET

OH2ZY Calling from Finland

Following on from our report from our German Member last month, this month we have had a nice interchange by E-Mail from Pekka Viitanen from Finland.

He reports his "ADSL is 24 MBS and going to 100 later this year. His HDTV is through cable". Vice President, Charles, G0GJS commented "Can I move to Finland" when he read this! He goes on:- "Two thirds of my career I spent with communications, including Marconi and Motorola. During the Marconi years I remember I had contact with Ian Duncan-Smith and Trevor Bond. Actually I met Trevor still quite recently in one of the Tetra conferences".

"I am living in down-town Helsinki with a lot of local man made noise. Actually I have two antennas - a 18AWT and Windom on the rooftop, but the noise level is during daytime mostly above S9.

My Radio Station is split into three: Here in the town I have a Museum with about 50 or so boat anchors. A second station (mostly 80 m AM) some 50 miles North from here in a penthouse - Too cold to be operated during a cold winter. The best site is at my summer cottage in the woods and lakes. However, at this time of the year it is unreachable. A metre of snow around and about half a mile to the nearest road. The only way to get there is with skies but that is not so comfortable in the soft snow. On top of that it takes about a day to get the ham shack warm. But during the summer months it is a different story".

Pekka, OH2ZY

March Radio Sport (Contests) All in UTC.

- 01 March** - RSGB Club - Data - 20:00 to 21:30
- 6/7 March** - 144/432MHz - 14:00 to 14:00 – 24Hrs
- 6/7 March** - ARRL DX SSB - 48Hrs
- 10 March** - RSGB Club - CW - 20:00 to 21:00
- 13/14 March** - RSGB Commonwealth CW - 24Hrs
- 18 March** - RSGB Club - SSB - 20:00 to 21:00
- 27/28 March** - CQWW WPX SSB - 48Hrs

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

Steve, G4ZUL, CARS Contest Manager

Radio Path Predictions – March.

Gwyn, G4FKH was requested at the November Meeting to provide an "Only to CARS" Propagation Prediction. Thank you Gwyn.

Asia: Dhahran - around 16:00 on 18.1MHz for 88 percent of days, with fair signals.

Oceania: Sydney - around 18:00 on 7.0MHz for 63 percent of days, with poor signals.

Africa: Johannesburg - around 20:00 on 10.1MHz for 89 percent of days, with fair signals.

S. America: Caracas - around 22:00 on 10.1MHz for 68 percent of days, with poor signals.

N. America: Halifax - around 06:00 on 7.0MHz for 70 percent of days, with poor signals.

Note the propagation is getting better.

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

Gwyn, G4FKH

CARS Radio Nets

After the CARS Meeting on the first Tuesday in the month, CARS has a Radio Net on each of the remainder Tuesdays in the month starting at 8.30pm.

2nd Tuesday is VHF on 145.375MHz.

3rd Tuesday is now on GB3ER

4th Tuesday is HF on 1.947MHz

5th Tuesday (when there is one) is 28.375MHz.

Additionally, Steve is running a CW Net on the 2nd Tuesday of each month on 3.545MHz (+/- QRM) but starting earlier at 8pm Local.

Steve says that last month 18wpm was the norm.

John G8DET.

Training Courses

CARS run courses for all three levels

The current Foundation Course (CARS landmark 21st Course!) finished with the examination on the 18th February and ALL PASSED. Congratulations.

An Intermediate Course starts 18th March, 2010.

The course costs £75 which covers the room hire, project materials, Intermediate Licence manual and RSGB exam fee.

The PowerPoint slides for the Intermediate (and other) Courses are available for download from the CARS Web-site.

If you would like to attend, please contact Clive G1EUC below.

More details are on our Training page: - <http://www.g0mwt.org.uk/training>

Tel: 01245-224577 Mob: 07860-418835

E-mail: training2009@g0mwt.org.uk

Beginners Antenna Video

In a video aimed at beginners Diana Eng, KC2UHB demonstrates how, by using a low power amateur radio transmitter and a simple light bulb receiver circuit, we can see how radio waves and electromagnetic induction transmit energy and signals wirelessly through the air.

It also shows how dipole and Yagi antennas radiate their energy in different patterns. Watch the video at

<http://www.youtube.com/watch?v=lsIHtCUSfN4>

Trevor, M5AKA

Museum Lecture.

The Friend's of The Museum Annual Lecture.
Wednesday, 3rd. March at 8pm in the Cramphorn Theatre, Off Duke Street, Chelmsford.

Tickets: Box Office 01245 606505

Cost: £5, £4 (Friends of Museum, as CARS Members are)

"2MT Writtle - The Birth of British Broadcasting "
By Tim Wander, G6GUX.

Tim G6GUX wrote a book some years ago with this title and originally gave the talk to CARS on 5th April 1988. See the write-up of his talk in the May 1988 Newsletter on your CARS 2009 DVD.

Geoff, G7KLV

1924 - Amateur Transmitting Stations

Following on from the proposed Lecture above, I am indebted to President, Harry, G5HF for a complete list of all Amateur Transmitting Stations, 1924.

I cannot reproduce all but have picked out a few which caught my eye.

- 2AA** Radio Communication Company, Ltd, Slough
- 2BO** **Marconi Company, Writtle**
- 2CD** Burton-on-Trent Wireless Society, 66 Edwards Street, Burton-on-Trent
- 2CK** City & Guilds (Engineering) College, Exhibition Road, Kensington
- 2GD** Birmingham Wireless Experimental Club, Digbeth Institute, Birmingham
- 2GU** Halifax Wireless Club, Clare Hall, Halifax
- 2GV** Rev. W. P Rigby, St Lawrence Vicarage, Bristol
- 2HK** A.A. Campbell Swinton, FRS, 66 Victoria Street, SW1
- 2II** Southport Wireless Society, Queen's Hotel, Southport
- 2KA** Brighton & Hove Radio Society, 68 Southdown Avenue, Brighton

- 2KZ** B Clapp, AMIERE. Meedmore, Brighton Road, Purley
- 2LR** J Scott-Taggard, 6 Bentyville Gardens, Ilford
- 2MF** Marconi Scientific Instrument Co, Ltd, 21-25 St Anne's Court, Dean Street, W1
- 2MT** **Marconi Scientific Instrument Co, Ltd, nr Chelmsford Station, for specially authorised transmissions to amateurs**
- 2NM** G Marcuse, Coombe Dingle, Queen's Park, Dingle
- 2NQ** R J T Morton, 11 Woodside Road, Kingston-on-Thames
- 2OK** H D Butler & Co Ltd, 222 Great Dover Street, SE1
- 2OP** Capt C G Price, 8 Lansdown Terrace, Cheltenham
- 2OT** Ilford & District Radio Society, 12 Seymor Gardens, Ilford
- 2OZ** Worcester Cadet Signal Company, Sansome Walk Worcester
- 2PQ** G E Mortley Sprague & Co's Test Station, Nelson Road, Tonbridge
- 2QQ** Burndept Ltd, Blackheath
- 2SD** Sir Hanbury Brown, Newslands, Crawley Down, Sussex
- 2SS** Bradford Technical College
- 2SZ** Wireless Society, Mill Hill School, NW7
- 2UN** 14th Cardiff Lord Mayor's Troop of BP Scouts, Cardiff
- 2VP** P G A Voigt, Bowdon Mount, SE23
- 5AA** The Leicester Daily Mercury,
- 5BK** W G H Brown, 52 Winstonian Road, All Saints, Cheltenham
- 5DH** Dollis Hill
- 5DY** **Chelmsford Radio Engineering Co, Ramsford End, Chelmsford**
- 5HW** National Physical Laboratory, Teddington
- 5HX** C H Gardner, Electrical Disposal Syndicate, 6 Market Place, Oxford Circus, W1
- 5JX** M G Scroggie, BSc, 37 Cluny Gardens, Edinburgh
- 5QV** F L Stollery, Fairmead, Vista Road, Clacton-on-Sea
- 6JB** Wimbledon Radio Society, Red Cross Hall, Church Street, SW19
- 6LB** **Laurie J Fuller, Glenburn, Seagry Road, Wanstead**
Founder Member of CARS
- 6PJ** F Ison's Stores, 47 Orchard Road, Walthamstow, E17
- 6QC** Grammar School, Loughbour
- 8AN** Dr P Corey, Paris
- 8AO** M Lardry, Radio Club de l'Ouest, Boulevard Negrier, Le Mans, Sarthe

Harry, G5HF

CARS 2009 DVD

There are a number of historical items on the 2009 CARS DVD. For those who haven't already got a copy they will be at the sign-in desk at the next meeting. It contains a complete set of CARS newsletters dating back to January 1966. They can be found in the folder 'Chelmsford Amateur Radio Society\Newsletters'. If anybody has any earlier club documents please let me know.

Roy Emeny G4JAC has kindly provided us with a collection of Radio Direction Finding pictures dating back to the 1920's. They are in the folder '8 Direction Finding History'

Those of you who remember the days when you had to give written answers to questions in the Radio Amateurs Exam will be interested in the folder '9 City and Guilds RAE Papers'. This contains a collection of exam papers from 1946 to 1978 so you can remind yourself of the exam that you sat all those years ago.

In 'Chelmsford Amateur Radio Society' folder look at 'Chelmsford Buildings - Marconi New Street'. There you will find a collection of pictures and maps of the site taken over the past century and also a copy of the famous 7777 patent.

In the 'Historical' folder you will find an illustrated article by Roy Philpot G3VCH/DJ0OW titled '20 years before the (Antenna) Mast' that tells of his experiences as a Maritime Radio Operator.

Eric Lawley has provided a copy of his 1958 licence G3MMX which didn't require a Morse test and permitted operation above 420 MHz. There is also a 1923 constructors licence, in those days it seems you needed a licence just to build a radio.

I would be interested in copies of any early Amateur licences for inclusion on the DVD. If you have one please email it to m5aka@amsat.org

Trevor M5AKA

New Amateur Radio Satellite HO-68

On 15 December at 0230 UTC China launched its first Amateur Radio satellite Xi Wang 1 (Hope 1) from the Taiyuan Satellite Launch Center in Shanxi province. It received an official OSCAR (Orbital Satellite Carrying Amateur Radio) designation of HO-68 six days later.

AMSAT China (CAMSAT) ran a special event station BT3WX from Taiyuan to commemorate the launch. They hope that the satellite will inspire radio amateurs and young people to learn about amateur satellite communication technology and space.

The 68 by 48 cm satellite weighs 60 kilograms and is in a 1200 km high Sun-synchronous orbit that enables contacts between stations over 5000 km

apart. The communication payload includes a CW beacon and three cross-band (145 to 435 MHz) transponders for SSB/CW, FM and digital AX.25 packet operation.

The transponders were activated a few days after launch and hundreds of contacts were made over the Christmas holiday period. The linear transponder, used for SSB and CW working, has proved very popular. It has a bandwidth of 50 kHz which allows about 10-15 simultaneous contacts to take place and sounds like the 20 metre band.

On 30 December Mike DK3WN and Henk PA3GUO showed you could also send pictures through the SSB transponder when they carried out the first Slow Scan TV (SSTV) contact.

Due to Doppler shift the CW beacon can appear to be up to +/- 9 kHz from its nominal frequency of 435.790 MHz and you need to tune your receiver to follow it during the pass. The beacon has been received on simple antennas such as a ¼ wave ground plane but for best results try a small yagi with about 8 elements.

HO-68 video by PA3GUO :

<http://www.youtube.com/watch?v=o6oDgUTHCwg>

HO-68 Real Time Tracking (tick *draw footprint*):

<http://www.n2yo.com/?s=36122>

Operating Schedule: <http://www.camsat.cn/>

AMSAT-UK: <http://www.uk.amsat.org/>

Trevor, M5AKA

For Sale

Kenwood TS530P HF Transceiver with handbook and original microphone.
Will accept £250 cash or in part payment a Mobile HF Transceiver and part cash,
Reason for sale is the space is needed.

**Ken Pallant, G0OSI on
either 01376-334110 or 07800-501851**

For Sale – Free – Poles from 2 Members

Free to a good home - 20ft. (2inch diameter) galvanised steel pole(s).

Just needs unbolting and taking away.

All necessary tools available.

Ivan Rush, G4VAD. 01277 226437

And the same from: -

Harry, G5HF

harry@meadowside.demon.co.uk

Flex 5000 – The Continuing Story

I have just completed a new set-up here with my Flex-5000A and would like to invite anyone interested over to my shack to take a peek.

I have the Flex-5000A, the DXLab Commander and Logging program all running together. The logging program picks up relevant data straight off the Flex, saves me typing, ha!

For keying I use the K42 kit, which is a keyboard keyer (can also be used with a paddle). So I have two keyboards on the desk, was a little confusing at first, but I'm used to it now. The K42 will also display received Morse but I don't use that part. For those unfamiliar with the K42 kit, it is from the same stable as Winkey, we used a Winkey at last year's NFD. It has a little LCD display that has two rows of about 15 characters each. When it is used for receive as well as transmit, the top row shows the received CW and the bottom row the CW that is to be sent.

Good Dxing – Gwyn / G4FKH

This is a very generous offer – contact Gwyn direct on g4fkh@btinternet.com

Morse Course

A Morse Code course will take place on Thursday evenings in Danbury Village Hall. All aspects of CW are covered from the beginner to the CW operator who wants to increase their skills. To book a place, contact Clive G1EUC.

Andy Kersey G0IBN will be leading the course and he also does the GB2CW slow Morse transmissions on Wednesdays at 1930 on 3.550 MHz.

The Essex CW Club hold a net on 3.540+/- at 1930 on the first and third Wednesdays of each month further details at

<http://www.essexcw.org.uk/>

Trevor, M5AKA and Andy, G0IBN

Contacts – Feb 2010.

Vice President, Geoff, G3EDM has mentioned that he has just worked VK2CA, Allan in New South Wales with 5/6 both ways on the Short Path. Allan is his 2,626th different VK Station he has worked.

He also said he had been monitoring the VK9 station using CW on Christmas Island on 24MHz.

Geoff, G3EDM.

90 Years of British Broadcasting 1920 – 2010

MZX Chelmsford

On the 15th of June 1920 the famous Australian Prima Donna, Dame Nellie Melba gave her historic 30 minute concert from the Marconi New Street works in Chelmsford. The experimental Station MZX transmitted on a wavelength of 2,750 metres using a 15KW transmitter and a 'T' aerial.

Although the Dame Nellie concert, the first by a recognised professional artiste, is generally recognised to have been a turning point in British Broadcasting history it was not the first broadcast. Two Marconi engineers, W T Ditcham and Captain H J Round started what was probably the first ever true telephony 'broadcasts' months earlier.

On the 15th of January 1920 they transmitted a program of speech and gramophone music from the Chelmsford works using a 6KW transmitter. Hundreds of appreciative reports were received from amateurs and ships at distances of up to 1,500 miles.

This was followed up for a brief period from the 23rd of February to the 6th of March 1920 when Ditcham and Round transmitted a regular series of 30 minute programmes from MZX using a 15KW transmitter on a wavelength of 2,750 metres; the same station as was later to be used for the Dame Nellie concert.

(Editors comment: -Geoff, G7KLV knew Winifred Collins who sang on-air prior to the Dame to enable the transmitter to be tested and tuned up).

British Broadcasting had begun!

NOTE The famous station 2MT at Writtle did not start transmitting until two years later on the 14th of February 1922.

Geoff, G0EVW

Reproduced with thanks to "Cats Wisker – the South Dorset Newsletter" and Geoff, G0EVW.

And Finally:-

John G8DET edited this edition. Material by; Trevor, M5AKA; Steve, G4ZUL; Gwyn, G4FKH; Ken, G0OSI; Ivan, G4VAD; Pekka, OH2ZY; Dick G4DJC; Harry, G5HF, Geoff, G3EDM, Andy, G0IBN Geoff, G7KLV & Clive, G1EUC.

Items for the next Newsletter, including your experiences with your latest rig or antenna, tips on working DX, or your latest project, to be sent to the editor@g0mwt.org.uk by Saturday, 20th March.

