



# Chelmsford Amateur Radio Society

Established 1936

Affiliated to the RSGB Club Call Sign: G0MWT  
President: Carl Thomson, G3PEM Chairman: John Bowen G8DET  
Treasurer: Brian Thwaites G3CVI Vice Chairman Martyn Medcalf G1EFL



Newsletter No 537

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

December 2010

## Season's Greetings to all our Readers

This Month's Meeting – Tuesday, 7<sup>th</sup> December, 7.30pm at the Marconi Club

### "The Joy of Contesting"

By Mark Haynes, M0DXR

Mark's talk will explain his routes into Contesting and how as a youngster it is/was an attraction. We'll look at what Contests are all about, how to take part with a large or small station, and how to strive for a winning spot in the results table. There also promises to be some audio clips that demonstrate some of the finest Contest operating ever, with a tour of a station we all dream of! Overall, the message is that there is so much more to contesting than simply picking up the mic!

First licensed in 1996 as 2E1ERN, later 2E0APH and then M0DXR in 2000, Mark was Winning Young Amateur of the Year 1999 and is now the Chairman of Harlow & District ARS. He was Founder of the Contest University UK, and has operated from many DXCCs including Comoros D68C, Maldives 8Q7XR & 8Q7ZZ, Kerguelen FT5XO.

Even if Contesting is "not for you" come and listen to an absorbing evening of how it is done and what results are possible.

During the refreshment break Members will be invited to have a warm (or cold) Mince pie or Shortbread biscuit as is tradition at the December Meeting.

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

#### Dates for your Diary

Saturday 4 <sup>th</sup> December	CARS Christmas Lunch at Glades Restaurant, Princes Road, Chelmsford
Tues, Dec 14, 21 & 28 <sup>th</sup>	CARS CW Net starts at 8pm on Tues 14 <sup>th</sup> ; SSB Nets starts at 8.30pm (Local)
Wed, 15 <sup>th</sup> December	CARS Committee Meeting – Danbury Village Hall – 7.30pm. All welcome.
Saturday 18 <sup>th</sup> December	CARS & ERG at W&S pre-Xmas Sale
Tues, 4 <sup>th</sup> January 2011	CARS Meeting – "Islands On The Air" by Martin Atherton, G3ZAY

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 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) 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 December is Colin, G0TRM. Thanks to David, M0BQC for doing it in November.**

**Last Month's Meeting:-**  
**" WSPR Mode and 500kHz, 136kHz and 9kHz VLF – done simply"**  
**By Roger Laphorn, G3XBM**

John G8DET opened the meeting by projecting onto the screen the sad notice of Silent Key, Pat O'Riordan, G0SBQ. His funeral was on the 9<sup>th</sup> November. He was 79.

Roger travelled from Cambridge to share his experience of building and operating very simple QRP equipment for 500kHz, 136kHz and the astonishingly long wavelengths of 9kHz VLF.

On Thursday, October 21, Roger achieved a distance of 1,733 km on 500 kHz using WSPR. Roger is one of just three UK operators that have been issued with a special NoV for 8.97-9.1kHz experimental operation.



Roger started off his talk by saying that the conventional wisdom is that one needs high power, big antennas and big ATUs, which produce big QRM, sparks and fires associated with this end of the spectrum. As an avowed QRP man he sought to assure us that such a list need not be the case. WSPR – 'Weak Signal Propagation Reporting' and QRSS – very slow Morse was available. As an example, the latter could use 9 seconds for a dah and 3 for a dit. The lower powers needed meant lower o/p voltages, 14 to 30 dB below noise level signals being useable. The message sends recognition data over 2 minutes. Software for these modes can be downloaded from the internet. Bandwidth on WSPR though narrow, 200Hz, accommodates 60 x 6Hz-wide signals. Use of the internet will indicate where your signal is picked up – useful indeed!

**500KHz:** He started by keying the antennas! Then he progressed to a transverter and a FT817 in dual mode. It transmits on 10m and mixes down, but receives on 500kHz.

**Antennas:** 5m tall pole and a spiral of wire on top, with a 'central heating system' earth...! The ATU is a broadcast ferrite rod, the tap or feed-point being at the low ie earthy end, with an RF meter to indicate highest current, such metering being a fairly constant feature of his home-brew.

Subsequently he's used a vertical wire loop, 70m<sup>2</sup>. Highest point is but 7 metres, with the lowest side along in the grass. It's tuned with an old lab-type decade capacitance box, again tuned for maximum current. Another antenna is earth electrode antennas. The return is in the soil. Low-conductivity soil produces a large loop. The 'Q' is low, so matching isn't a problem, an important practical point. This works with 2milliwatts ERP to the West Country and even Holland, for I/P of 5 watts ....inefficient certainly, but it works. Furthest regular QSO Finland, 1733km. (Applause)

**136KHz:** Here, a beacon. He uses a 3.56MHz QRP xtal divided by 26 using a chip given by a French friend to attain 136.9kHz. The PA uses 2 watts, with a ferrite rod LPF, ERP being 10 $\mu$ watts. This was copied 62Km away using the earth electrode antennas as above. He then wanted to try WSPR on 136kHz. He used 10MHz, mixed down to 136kHz. As the frequency falls, QSO's become harder. Thicker wire with the 70m<sup>2</sup> loop allowed more ERP, less loss but the laws of physics are clearly less favourable. ERP was 100 $\mu$ watts; best 'dx' 148Km useful but not as good as with 500kHz. Notably, losses between 500kHz and 136kHz rise by 20dB.

**Earth Mode:** Through the Earth! We recalled 1964 PW article by P.C. May. The limiting factor is the inverse cube law, so it's a local communications system. For a beacon Roger uses an audio chip (May used an audio amplifier in those days\*) with o/p impedance of 4 $\Omega$  plus a transformer to match same up to (say) 200 $\Omega$  for the earth electrodes, not forgetting a tuning meter for the transmitting current. For a receiver an 80cm square 30-turn hand-held loop is used as a pickup with a mains hum filter. An 'up-converter' is used to connect to a receiver +headphones or indeed a PC. These days the 'Spectran' or other waterfall display and a mains hum filter can be used to find the signal. We were shown 838Hz CW using QRSS 3 on the display at -10dB but significantly -60dB QRM reduction; a useful feature indeed. With 4 watts o/p a range of 4 to 6 km was attained.

**Stefan, DK7FC** in Heidelberg, worked below 9kHz. Here, 8.97002 KHz. It's crucial to have very stable frequency control indeed, as the decoding depends fundamentally on it, also an audio PA and means of keying same, and a means of matching the PA to

whatever antennas is being used....a loop, electrodes, whatever. For Rx a loop feeding a soundcard, with good dynamic range, a filter and good gain control too is used. Stefan is allowed by special arrangement to erect kite antennas between 100 and 300m high – lucky fellow! His PA produces 600 watts, with a massive dustbin – sized matching coil, lambda being 33km. His metering indicates 1amp - er, – well, ok – and 31Kilovolts...CARE! He got a report from 16km away but, we were assured, no lethal shocks. He used dual frequency to transmit CW 859Km to Todmorden in N. England. He used 27mW ERP to reach Eire, 1310Km away, on 8.97kHz. He's also working on 6 and 5kHz. Stefan showed that at these frequencies high power and big antennas are needed – it's plain that the laws of physics can be tweaked just so far. Stefan has also used earth electrodes 600m apart, and been received over 50Km away. The loop antenna is directional, and receives on 502.4kHz USB; 1.5KHz modulation means 503.8 to 504kHz. The PC clock must be accurate as the transmissions are timed to within 1 second for decoding purposes.

**Software** 'Spectrumlab' see DL4YHF below - locks your frequency to that of a known ultra-stable VLF source. See: -

[www.wsprnet.org](http://www.wsprnet.org) , and  
[www.gsl.net/dl4yhf/spectra1.html](http://www.gsl.net/dl4yhf/spectra1.html)  
(NOTE - Spectra1, not spectral.)

This was an unusually well-received lecture, prompting a number of questions. We were encouraged particularly to make a start on 500kHz. Any takers?

Roger's website: [www.g3wbm.co.uk](http://www.g3wbm.co.uk)  
This talk will in due course will be on the site.

\*I recall a run on Mullard 5-10 amplifiers, plans etc immediately after this appeared. Patrick.

## **Patrick, M0XAP**

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### **President's Jottings - Number Two**

Last month's meeting revived my spirit of Amateur Radio. To hear what Roger, G3XBM, had achieved with simple home built equipment was quite uplifting. It proved that you do not require the latest super rig costing thousands of pounds to have some fun and experiment.

Roger sent me an email a couple of days later and in it he said that his trial on 8.760 kHz had been received at 5.1 km. He also included a screen shot of the received signal, quite a remarkable achievement.

Just a couple of anecdotes on my experience of low frequencies. Back in the 1960s Marconi Marine made and sold a transmitter that operated on or near 50kHz. It was called, I believe "Protector" and

consisted of four 813 valves in parallel feeding a load which was in the form of a transducer which was bolted onto the inside of a ship's hull below the waterline. The purpose of this device was to vibrate the hull so that barnacles could not attach themselves to the hull, hence its nickname of "Barnacle Buster". Several of these were sold - whether they proved a success I do not know.

The other anecdote takes me back to 1960 when I had a collage visit to Rugby Radio. The station had the transmitter operating on 16 kHz and the sight of the tuning coil on its wooden frame pulsing in and out to the Morse signals still remains in my memory.

Please find attached a copy of the CARS President's First Contest.

## **Carl, G3PEM, President**

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### **16kHz Wireless at Rugby**

Thanks to Trevor, M5AKA for providing a very interesting Internet Link to a YouTube site which shows some pictures taken at Rugby Radio and Portishead Radio just before they shut down.

[http://www.southgatearc.org/news/november2010/16khz\\_vlf.htm](http://www.southgatearc.org/news/november2010/16khz_vlf.htm)

## **Trevor, M5AKA**

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### **Harry Heap, G5HF**

The Essex Chronicle newspaper tells the story of the role of Harry Heap G5HF as a World War II Voluntary Radio Interceptor.

Read the story at  
<http://www.thisistalessex.co.uk/news/Harry-93-kept-track-spy-messages-Morse/article-2723378-detail/article.html>

## **Trevor M5AKA**

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### **Pat O'Riordan, G0SBQ – Silent Key**

It is with regret that we record the sad passing of Patrick John, known to many others as "Paddy", after a short stay in Broomfield. He had been troubled with ill health for many years in later life but, nevertheless, was always very cheerful.

Pat was born in 1931, the Son of a colliery Doctor, in a South Wales mining village, who later moved up to the Midlands. On leaving school Pat joined the RAF to become a wireless operator, serving in Sunderland flying boats and eventually Shackletons. He was later involved in the Christmas Island nuclear tests.

On leaving the RAF he made a career in the sales department of Shell-Mex-BP, initially centred on Manchester where he met Anne and they had a Son and Daughter. As his career developed they moved south, eventually settling in Boreham and working in the London head office.

On retirement the family gave him an ultimatum - find a hobby - or else! What more natural than Amateur Radio! He gained his Licence and eventually joined CARS, serving on the Committee and was our QSL Manager for a while. Always a first-class operator, he was interested in DX, taking a special interest in IOTA.

He worked GB90DNM when CARS were transmitting from the rear of New Street in June 2010. He also fulfilled a lifelong ambition - to visit the high Chain Home tower at Great Baddow which dominates Chelmsford, this he achieved during one of the BAE Systems Radar Special Event days.

Amongst his family and many friends, members of CARS celebrated his life at the Crematorium on Tuesday 9th November.

I have one abiding memory of Pat, which I am sure is shared by all who knew him. He was always cheerful and ever a delight to know.

We offer our condolences to Anne and the Family. We will miss him.

**Geoff G7KLV.**

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**December Radio Sport (Contests)** All in UTC

**03/05 December** – ARRL 160m / CW - 42 hours

**05 December** – 144Mhz AFS – SSB - 09:00 to 17:00 hours

**11/12 December** – ARRL – 10m - SSB / CW – 48hrs

For further information please email Steve G4ZUL [contests2010@g0mwt.org.uk](mailto:contests2010@g0mwt.org.uk)

**Steve, G4ZUL**

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**Radio Path Predictions – December**

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

**Asia: Dhahran** - around 12:00 on 24.9MHz for 94 per cent of days, with fair signals.

**Oceania: W Samoa** - around 14:00 on 10.1MHz for 78 per cent of days, with poor signals.

**Africa: Johannesburg** - around 20:00 on 10.1MHz for 82 per cent of days, with poor signals.

**South America: Buenos Aires** - around 08:00 on 10.1MHz for 84 per cent of days, with poor signals.

**N. America: Saskatoon** - around 16:00 on 14.0MHz for 82 per cent of days, with poor signals.

Unfortunately, Gwyn tells us that the expected Sun Spot activity has not appeared. Comments are welcome. Please E-Mail Gwyn at: [g4fkh "AT" btinternet.com](mailto:g4fkh@btinternet.com)

**Gwyn, G4FKH**

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**Digital Radio - UK**

Murray has just given the Editor high blood-pressure by drawing his attention to the fact that the BBC are just about to start a campaign to encourage fools with money to buy a DAB Radio Set for Christmas.

The worst thing about the Press Release is the footnote reproduced below. Note the dates.

What the BBC thinks will happen to the 25 million useless car FM Radios in 2015 is not mentioned.

**About Digital Radio UK**

*Digital Radio UK works with Government, broadcasters, manufacturers, retailers, and a wide range of stakeholders to accelerate digital listening, to enable the expansion of the digital radio platform, and to ensure that industry meets the consumer-led criteria to be achieved by 2013, for a proposed radio switchover in 2015. Digital Radio UK's Board comprises representatives from the BBC, RadioCentre, Arqiva, Global Radio, Bauer Media, GMG Radio, Intellect and the Society of Motor Manufacturers and Traders.*

*The Digital Radio Action Plan announced by the Government in July supports the industry target of a 2015 digital radio switchover and requires a growth of digital listening by 25% p.a. over the next three years to meet the Government criterion of 50% digital listening.*

**Murray, G6JYB.**

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**G-QRP Convention - 2010**

The 2010 G-QRP Convention was held on Saturday 23rd October, at Rishworth School, Rippenden (ex-Rochdale, of course). As the organisers always emphasize, this is not just a rally, but a proper convention, with organised talks and events in addition to the "Junk & Jewels" of normal sales stalls. This year, paid-up visitors totalled 325, up a little on previous years.

The talks this year were as varied and interesting as ever, with Ian Keyser, G3ROO, discussing clandestine radio and showing restored examples of equipment. Roy Lewallen, W7EL, followed with his

experiences of QRP Field Days, giving advice on equipment, power, tools and antennas.

Dave Starkie, G4AKC, described his experiences in "working DX on the move", both pedestrian mobile and bicycle mobile, showing a selection of suitable equipment. Finally, David Stockton, GM4ZNX, held an open forum, with answers and discussion arising from technical questions from the audience. This is always of great interest, covering many aspects of amateur radio.

In addition, this year there was a "Buildathon", with visitors able to construct a Manhattan-style transmitter from scratch, with components, techniques and help provided by the organisers. This cost £15, and ran for the afternoon, after allowing time for the famous "pie & peas" to be consumed beforehand.

The organisation involved the G-QRP Club Committee and members of course, and was enormously helped by the Halifax ARC and The Rochdale ARC, and the officials of Rishworth School (a lovely place, but virtually empty because it was half-term).

We set up the show on Friday afternoon, and stayed at a local hotel for the Friday and Saturday nights - so it's not a cheap weekend, but always most sociable and enjoyable.

Personally, Pat, G6TAF, (Dave's YL) and I enjoyed ourselves very much, running a 3-table stall with the usual junk available, but with emphasis on the sort of things wanted by QRPers eg 80m crystals, and small components. Technical AR books sold well also, but it was still a car-load to carry home.

Will we see you up there next year, I wonder?

## **Dave G3PEN**

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### **CARS Christmas Lunch – 4<sup>th</sup> December**

Martyn, G1EFL and his YL software expert tell me they have had a good response to the CARS Christmas Lunch invitations. Unfortunately a number of keen supporters of CARS cannot come for all sorts of good reasons but send their best wishes.

A Booking Form can be downloaded from the Home Page of the CARS Web Site so the late application maybe considered by the Glades Restaurant – there are spaces still available – please join us.

There is plenty of car parking to the left of the Miami Hotel. Access is from the Army & Navy roundabout towards London, after the Esso Petrol Station and entrance to Tesco – just after a light controlled crossing. See you there. 12 for 12.30pm.

## **John G8DET**

## **RSGB Board Election**

Region-12 Manager Phil Brookes G4NZQ has stepped down and has now been Seconded with Charlie Morrison, G14FUE to the RSGB Board. Congratulations to both – CARS feels they will both contribute expertise in their own right.

The new Region-12 manager is Neil Whiteside, G4HUN from Cambridge and is hoping to join CARS at the Christmas Lunch on Saturday, 4<sup>th</sup> December along with Phillip, G4NZQ, both as Guests of CARS.

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## **Free ebook - Understanding LF and HF Propagation**

Steve G0KYA and Alan G3NYK, of the Radio Society of Great Britain's (RSGB) Propagation Studies Committee, have released a free ebook called 'Understanding LF and HF Propagation'

In 2008/2009 Steve and Alan wrote a series of features on LF and HF propagation for the RSGB's "RadCom" magazine.

You can download your free copy of "Understanding LF and HF Propagation" at <http://www.g0kya.blogspot.com/>

## **Trevor M5AKA**

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### **Watch out for Computer Malware**

Brian, G3CVI reports he has had terrible trouble with "something" which infected his computer called "Smart Engine". Mark, his computer guru took 3 hours of intensive work to rid the item which demanded money to "go away".

Mark has just reported to Brian that he has now had three more infections.

*Google classifies SMART ENGINE as a Rogue Anti-Spyware infection.*

*SMART ENGINE uses highly aggressive marketing tactics such as system tray security alerts, pop-ups and bogus system scans containing false results. All of these tactics are designed to entice the user to purchase the full version of the SMART ENGINE.*

*Most users report encountering it while they were trying to watch a video at a certain website. In many cases, before they could even play the video, a box popped up asking them to download a video codec or update their video player software. Instead of this being an actual request, however, it was a Trojan, and once clicked, Smart Engine installed itself on your machine.*

*This is even true in cases where good Antivirus solutions were present. Antivirus software can't protect you from programs like Smart Engine*

*because they're not actually viruses. Instead, they're rogue security software, and Antivirus software, even the best solutions are designed to pick up on Viruses, an entire class of malware. As such, they download definition files on a regular basis that allow them to deal with those programs, but applications like Smart Engine will never be part of virus definition files. Don't blame your Virus software if you do have Smart Engine. It just wasn't designed to deal with problem programs like this one.*

*Smart Engine is actually part of a much larger family of programs. Called the Virus Doctor Family, there are a number of different names associated with this one, and it is possible to have more than one of them installed on your computer at once. Other names within the family include Smart Security, My Security Shield, Security Master AV, Fake Vimes, Ultra Antivirus 2009, Malware Catcher 2009, Virus Melt, Windows PC Defender, Live PC Care, Security Antivirus, Cleanup Antivirus, My Security Wall, Security Guard, My Security Engine, and Paladin Antivirus. All of these programs display very similar properties, so much of the information you'll find about Smart Engine also applies to these programs as well. In some cases, these are literally aliases of the exact same program.*

Ensure you have up-to-date Malware protection. Malwarebytes Anti-Malware program is good.

### **Brian G3CVI.**

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#### **For Sale (1)**

MFJ901B ATU for HF - £80  
KENWOOD 2M TR7500 - £25  
VSWR Meter for 2M/HF - £15  
EDDYSTONE DIAL with SLOW MOTION DRIVE similar to that fitted to the 840.  
Un-calibrated in original box - £50  
AVO TEST METER, MODEL 7 - £10

**Contact KEN G0OSI on 01376 334 110**

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#### **For Sale (2)**

4m professional manufactured 5 element Yagi aerial which was used by the late Anthony Martin, G1FDE.

It is constructed in a 1 inch square boom, 104 inches (264cm) long. Each element is isolated from the boom. The active element has a matching stub connected to a 50 Ohm N-Socket and using the CARS MFJ adjusts to a SWR of 1:2 at 70.025MHz.

Best offer over £20 – Money will go to Cathy Martin.

**Contact G8DET – Aerial is at Danbury.**

#### **For Sale (3)**

2 Metre, professional manufactured by Apollo Aerials, Blackpool (G6LNS), 5 element Crossed Yagi aerial which was used by the late Anthony Martin, G1FDE. Looks as though it was used in his loft.

It is constructed in a 1/2 inch square boom, 63 inches (160cm) long. There are 2 active elements so that two coaxial cables can be taken down to a switch box. Ideal for Satellite working or switching from vertical to horizontal polarization.

Best offer over £20 – Money will go to Cathy Martin.

**Contact G8DET – Aerial is at Danbury.**

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#### **Interesting Amateur Radio Link**

The following is an interesting Radio Amateur link: -

<http://www.datehookup.com/content-meeting-people-with-ham-radios.htm> .

#### **Professor Courtney Goodman – E-Mail.**

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#### **Waters and Stanton Christmas Sale Day**

The annual Waters & Stanton Christmas Open Day will be held on Saturday 18th December at our Hockley & Glenrothes shops from 9am until 5.30pm.

Come and visit either of our shops and enjoy free food & drink and some great deals. In our usual Christmas spirit we will have some special offers and great prices for visitors on the day. The event is sponsored by Yaesu UK Ltd and Andre Ravary will be joining us at our Hockley store.

Also in attendance at our Hockley branch will be Clive Ward & Murray Niman from the Chelmsford Amateur Radio Society, bringing you information about Amateur Radio training & Repeater groups.

So come along, join in the fun & grab yourself a bargain Christmas present!

See the W&S blog at [www.blog.wsplc.com](http://www.blog.wsplc.com)

#### **Murray G6JYB**

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#### **And Finally:-**

John G8DET edited this edition. Material by; Trevor, M5AKA; Steve, G4ZUL; Gwyn, G4FKH; Murray, G6JYB; Dave, G3PEN; Carl, G3PEM, Geoff, G7KLV, Brian G3CVI and Prof Courtney Goodman.

Items for the next Newsletter, including your experiences with your latest rig or antennas, tips on working DX, or your latest project, to be sent to the [editor@g0mwt.org.uk](mailto:editor@g0mwt.org.uk) by Sat, 18th December.