



## NEXT MEETING - W.A.R.C. 92

When Radio Engineers discuss a wide band circuit they sometimes use the expression "it covers from DC to daylight". This term can also be used when we consider one of the worlds precious natural resources, the Radio Frequency Spectrum. Every country has their own interpretation of how this resource should be used and it must be obvious to anyone using radio communication that there must be a master plan of frequency allocation to prevent universal QRM!

Under the auspices of the United Nations, the International Telecommunications Union (ITU) call periodic formal meetings of government representatives to World Administrative Radio Conference (WARC) where adhering to strict agenda and procedures they can make changes to the Radio Regulations annexed to the International Telecommunication Convention, which include changes to frequency allocations; hence the interest of the Amateur Radio Service.

At our August meeting we will welcome Les Barclay of the Radiocommunications Agency who will explain some aspects of the complex administration structure that enables so many countries to agree on the overall allocation of frequencies.

Although the 1992 WARC was not a general WARC like the 1979 conference; it was to deal only with "frequency allocations in certain parts of the spectrum". The amateur bands in general were not at risk and there was no mention in the Conference agenda of any amateur bands as such. However, as discussions progressed and proposals from countries were received, it became apparent to the International Amateur Radio Union (IARU) and its member societies, including RSGB, that some amateur bands could be affected.

Details of this important subject will be revealed at the club meeting which will begin at 7.30pm on Tuesday 4th August at the Marconi College, Arbour Lane Chelmsford.

## DATES FOR YOUR DIARY

- 2 Aug. R.S.G.B. NATIONAL MOBILE RALLY - Woburn.
- 4 Aug. CLUB MEETING - WARC 92 - Les Barclay.
- 16 Aug. SOUTHEND & DARS RALLY - Rochford.
- 23 Aug. GARDEN PARTY - with John & Pauline Bowen.
- 1 Sept. CLUB MEETING - Moonbounce - Pat, G3IOR.
- 6 Sept. VANGE ARS RALLY - Laindon, Basildon.
- 27 Sept. HARLOW AR RALLY - Harlow Sports Centre.

## RADIO GARDEN PARTY IN DANBURY

John G8DET and his wife Pauline have kindly offered to hold this event at their QTH on the top of Danbury Hill on Sunday 23rd August from 2.30pm onwards (Committee members please note change of date). John requests "if the weather is wet please do not come, if in doubt please ring to check".

Tea, soft drinks and Gateau will be provided by our hosts, any contributions of cakes etc., will be most welcome. If you would like to attend please put names on a list at the August CARS meeting, directions to the Bowen QTH will be available. John requests that as the lawns are soft and on a slope, flat shoes are advised to avoid twisting the ankle and it is not advisable to bring small children as the QTH is far from Kiddie-proof! (you can see they have not reached the Grandchildren stage yet!)

It is hoped to be operational on HF and VHF, lets hope it will be fine, we have been very lucky in the past.

## COMMITTEE MEETING

The August Committee meeting will be held in the Telford Lodge at 7.30pm on Wednesday 12th August, you are welcome to join us.

## MEMBERS NEWS - Ela, G6HKM

The Society extends a welcome to 2 new members this month, Simon Wilton, G7HCD and Simon Griggs a SWL. Our membership now totals 79, the best it has been for a number of years.

Congratulations to Pat O'Riordan who is the proud owner of the callsign G0SBQ, Pat passed the CW test a few weeks ago so when the RAE pass slip arrived he was able to apply for a Class A Licence, well done Pat.

Looking through the Membership list I see that we have 5 SWL's, if they or anyone knows anybody who is interested in a "Radio Amateurs Examination Course" I am pleased to say that The Chelmsford College of Further Education, will be starting a course on 5th January 1993, evenings: 6.30 - 8.30pm, for 16 weeks but please note that enrolment is on 8th & 9th September 1992, between 10.00am & 8.00pm at the Moulsham Street Site. The Course Tutor will be Ron Burg, Tel.No. (0245)265611. Ext.5436.

## ANNUAL AWARD OF MERIT

Now is the time to starting thinking about nominations for our Society Award of Merit to be presented at the October AGM to a member who has made a substantial achievement in the past year in the field of Amateur Radio. Nominations should be made in writing (not more than 100 words) and sent or given to a committee member by 1st September. Voting will take place during the AGM, each voting slip will be worth 10 points for members to allocate in their own scale of achievement to the nominees.

To remind you of previous presentations the 1990 Award was presented to Tom, G4INM for his dedication to the RSGB Morse Transmissions and in 1991 to Ela, G6HKM for her consistent VHF/UHF operation for contests and the league tables published in various journals.

## DF NEWS - Andrew, G4KQE

The Dartford Heath Qualifying Event was held on 14th June, the start was near Sevenoaks, one bearing was at 35°, the other at 120°. We decided to go to the northern station first and after two more bearings were in Horseholders Wood, at the top of the map, along with Phil Cunningham and two other competitors from Banbury.

We were all waiting at a crossroads in the wood for the signal to come up and when it did, we all darted into the bushes. After only a short while, Phil found the TX, followed a couple of seconds later by me. One of the Banbury competitors was still looking as we crept stealthily away, hearing the curses of another team who were looking in the wrong part of the wood.

At that point we had no idea where the second TX was, having only got the start bearing. We guessed he would be along way down the map so headed through Maidstone to a convenient point and waited for a signal. That bearing identified several possibilities and after two more, we knew he was in Hemsted Forest. On the 4 o'clock transmission I was running down a track into the wood, and kept going, and going, and going. At about 4.15pm met Andy Collett and when the signal came up again we knew which part of the wood he was in. In the thicket we also found Phil Cunningham. It was anybody's contest, and we were spurred on by the hidden station saying that he hadn't had anyone in yet who had already been to the other station. We were all therefore in with a chance. All three of us were frantically thrashing about, and then I heard Phil's voice modulating the TX - he was in! I found the TX a few seconds later, followed by Andy. It was only 4.25. As we were coming out of the thicket, three other teams were going in. We pointed the direction, but it was too late, it was 4.30.

Phil and I took 20 minutes to walk back to our cars, as the hidden station was 1 ¼ miles into the forest. This was to be the downfall of those competitors who had gone for the Southern station first.

We did not go back for the tea but when the results were announced, Chelmsford and Colchester teams had taken the first four places! Mike Hawkins was 1st, Phil Cunningham 2nd, me third and Andy Collett 4th, Dick Brocks came in 10th but he had a wait at the start for his navigator. Mike and Phil Qualified, and I missed Qualifying by 40 seconds! Of the 17 starters only seven managed to find both stations, in view of the long distance between stations and the long run-in (and out!) of the station in Hemsted Forest.

Chelmsford/Colchester once again collected all the prizes, 1st, 2nd and Ladies prize.

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## DF NEWS - Dick, G3WHR

We knew that our third event would not be easy because Mike Hawkins was to be the hidden station. Despite a downpour during the afternoon, the weather had improved by the time five teams set out from Tiptree. My start bearing went towards Marks Tey with strength indicating that Mike was North of the A604. Further bearings from Coggeshall and Wakes Colne were required before I joined Philip outside Wormingford Church. With footpaths on both sides of the road we had to wait for the next transmission, then it was off through the Churchyard. At this point I parted company with Philip, clearly one of us had a wrong sense. Found a wooded area - bit of bush beating to find Mike - more bush beating to confuse others, but not for long.

Results	1	Dick Brocks	8.25
	2	Andrew Mead	8.31
	3	Philip Cunningham	8.33
	4	Peter Larbalestier	8.45
	5	Peter Graves	8.50

Future Events.	7 August,	Colchester.
	16 August,	RSGB Manchester.
	21 August,	Chelmsford.
	6 September,	RSGB Mid-Thames.

## LAST MONTHS MEETING

### WEATHER SATELLITES by Richard Gedge

To set the scene, Richard gave a brief account of his work background in telecommunications. Working with BT Laboratories at Martlesham he has been involved in a number of projects concerned with digital data transmission. The experiences gained in this work inspired his leisure time interest in building a system for receiving radio data transmissions from orbiting satellites which are dedicated to observing the surface climatic conditions of the earth.

Next, Richard recounted the history and detailed the different satellites used for information gathering from space. For weather use there are two main types:-

**Geostationary.** Conceived by Arthur Clarke in 1948, these have an orbit synchronous with the earth and are 36,000km from the surface; integrated with all the other types of communication and "spy" satellites which now occupy the limited ring zone divided into 2 degree segments around the planet.

At present the most popular are Meteosat 3, 4 & 5, they use a down-link of 1.7Ghz for which a 0.9m dish or a 3m long loop yagi is required to receive noise free signals.

**Low earth orbit.** These are usually in a polar orbit which is also sun synchronous e.g. they fly overhead at about 840km and observe when the sun is present; NOAA 9 - 12 are presently in use. They firstly down-link their observed information in high speed data format to Darmstadt in Germany where it is processed, grid information etc. is added and then returned on an up-link back to the satellite which then broadcasts down to earth in the band 136 - 138Mhz. At present 137.5Mhz is the frequency used in the UK.

For reception a pair of crossed dipoles is ideal. The receiver needs to have an IF Bandwidth of 50Khz with good AGC, (e.g. converter + old Pye IF?). The output is an Auto Picture Transmission (APT) usually with a 2.4Khz carrier, Amplitude Modulated with max: being peak white. This is often stored on a good stereo tape recorder for processing at a later date. On the second channel a 2.4Khz tone is recorded for carrier insertion when receiving the Russian Weather Satellites which transmit suppressed carrier.

Richards excellent presentation went on to describe how the instrumentation in the satellites scans the earths surface with mirrors, processes with filters to separate temperature/density, etc. and relays the information for the detailed analysis of meteorologists (and casual observers) on earth.

From his home assembled IBM Compatible 286 computer, Richard then showed some spectacular images of the earths surface which had been stored for instant replay on the internal 125Mb Hard Disk; the audience enjoying the ease of viewing on a 17" SVGA monitor borrowed from BT for our benefit.

During the break period there were further "hands on" demonstrations where individuals were able to see in detail many other aspects of this hobby.

In question time, Richard said that care is required in selecting the model of home computer for weather satellite observation, for example the Amstrad 1640 with its ECD monitor was not really suitable as it only uses 4 grey scales, whereas 8 are actually needed (mono VGA is all right); this also confirmed that at present no colour information is transmitted by the satellites and the pictures seen in glossy magazines are doctored!

In conclusion, Richard provided an Information Sheet listing membership associations and equipment suppliers which specialise in weather observation. A copy will be displayed on our notice board at future meetings.

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73 from Roy & Ela Martyr, G3PMX & G6HKM

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