



THE JANUARY MEETING

A New Year, a New Venue, but the same good company who will join together to enjoy an evening of Video Films. As usual we have more "footage" than will fit into the evening, however, the feature production will be "THE AMATEUR DXPEDITION TO HEARD ISLAND".

The supporting films are "C.A.R.S. ACTIVITIES IN 1997 - by Fred G6FXM" and an audience choice between "COLONEL CROMPTON - Pioneer and Prophet" (which we should have shown last year) or "ISLE OF MAN STEAM HORSE AND ELECTRIC RAILWAYS" which are both very interesting half-hour Videos.

The meeting is held in the Board Room; past Reception and turn right. The evening will include the usual Raffle draw and the break for tea/coffee and chat.

Included with this Newsletter is a map showing the approach roads to Beehive Lane and The Marconi Social Club. The Club building and surrounding car park is the large X. The overflow car park nearby is the small x and there is a pathway linking both.

DATES FOR YOUR DIARY

- 6 Jan. CLUB MEETING - The Annual Film/Video Show.
- 1 Feb. SOUTH ESSEX ARS RADIO RALLY - Canvey Is.
- 3 Feb. CLUB MEETING - Commercial Satellites G7RGG.
- 15 Feb. CAMBRIDGE & DARC RALLY - Addenbrooks Hosp.
- 22 Feb. RSGB NATIONAL VHF CONVENTION - Esher..
- 28 Feb. RAINHAM RADIO RALLY - Rainham Kent.

MEMBERS & COMMITTEE NEWS

This month the Society welcomes another new member, Brian Miller a S.W.L. who joined at the last meeting.

The Committee have discussed in depth the phased hand over of the duties carried out by Roy and Ela. It is highly desirable that this should commence in March.

The Chairman is requested to address the forthcoming CARS meetings and call for appropriate volunteers and the subject will be highlighted in editions of the Newsletter. An investment in desktop publishing software by the Society was authorised to help the next editor of the Newsletter and Roy offered every assistance to his successor.

and a letter from Peter Neave who lives in Mistley.

Dear Roy,

I have decided not to renew my Sub. to the Chelmsford Amateur Club, but it was a hard decision to make as I have been a member for about 30 years, when I have enjoyed the benefit of meeting and sharing the successes and a very few failures associated with some of the best brains and personalities in the Amateur and Professional Radio Industry.

I am within a few months of my 80th birthday and do not now travel as much as I used to.

I have in the past few years established a firm friendship with members of the Colchester Club and have decided to join them. I don't expect to attend all their meetings but it will not entail nearly so much travelling as it does to Chelmsford.

I recall with great pleasure the camaraderie accorded to me over the years and the delight at winning several prizes in the famous construction competitions over the years.

I send my very best wishes and thanks to all members and hope that you will have a Happy Christmas and prosperous 1998. I may occasionally 'invite' myself to a meeting!!

vy 73 de Pete, G4DAN.

Ed. you are welcome at any time!

LAST MONTH'S MEETING - Andrew G4KQE

In December we welcomed back Professor Les Barclay, G3HTF, for a presentation on "Topics in Modern Propagation Research".

Les started off by asking why we still need research into propagation, as radio has been around for a hundred years, and a lot of research has already been done. The answer is that there is an overwhelming demand for information these days and although telecommunication can provide unlimited links with cable and fibre optics, the major demand is for mobility, flexibility and low cost systems for which only radio communication can provide. The limiting factor is there is only one radio spectrum, from 10KHz to 300GHz, so it is important to get the most out of this by fully understanding propagation.

The current topics being researched include the millimetric wavelengths, digital systems, mobile systems, interference at UHF and SHF and diffraction/scatter. Earth/space research continues at a high level due to the competition for more of this type of communication.

Interference is an important topic, although to Radio Amateurs interference could be interesting, as in this context, interference means unusual propagation, hence DX. Long term propagation mechanisms are tropospheric scatter and diffraction, and short term propagation to be taken into consideration when planning systems are ducting and rain scatter. When planning earth stations, much co-ordination and negotiation has to take place to ensure that there is no interference caused, short or long term to other countries nearby.

In order to assess the effect of rainfall on propagation, particularly at the millimetric wavelengths (where the raindrop size could equate to a wavelength), it is necessary to measure both how fast it is raining, and how big the drops are, as the amount of attenuation depends on the size and shape of the raindrops. A distrometer is used to measure the energy released when the raindrops fall to earth. A 25 metre dish in Chilbolton (Nr. Andover) provides radar plots for this country, but of course, the effect of rain in other parts of the world with unlike climates can be entirely different.

Air alone can provide attenuation, and studies have shown that at 23GHz water vapour causes an increase in attenuation, and at 60GHz oxygen gives a high resonance peak. The frequency bands around these two frequencies are therefore very important, as a high density of short range communication systems can be planned, due the fact that the signals are not going to go very far. It is important therefore that propagation at these frequencies are fully understood, so that their exact range can be predicted.

Much study has taken place into the atmosphere and refractivity. The refractive index of free space is 1.0, and generally, as you go higher into the atmosphere,

(continued on page 2)

LAST MONTHS MEETING - (continued)

the refractive index gets closer to 1. Therefore all radio waves tend to bend downwards, but the earth usually bends down at a faster rate, so the radio waves tend to be lost to space. However under some conditions, the waves bend at the same rate as, or more, than the curvature of the earth, causing ducting, or multiple hops, so it is important to know the refractive index of the air for a given path.

Terrain maps can be a useful aid when planning a new transmitter site, as the range of the signals can be assessed. Les showed us terrain maps of local radio stations. Radio Newcastle's coverage was squashed due to the Pennines, but the coverage of Radio Lincolnshire is almost circular due to the flat terrain.

With the advent of mobile telephones, a lot of research has been done on local terrain maps in towns, as people want their phones to work in the most inaccessible of places!. Even the effects of different types of trees have been studied.

The UK is at quite a high latitude when it comes to looking at geostationary satellites, as from here the satellites are at an angle of about 30 degrees. That is all right if all you want to do is mount a dish on the side of a building, but to contact a satellite from a vehicle is tricky, as it is difficult to always see a clear path at 30 degrees because of buildings, trees etc.

So research has taken place taking measurements of height and gain. The Ionosphere and solar energy have a great effect on propagation, so a lot of work has been done in this area. A solar flare is an emission of particles which can cause fade outs on HF. What happens is that a plasma bubble causes ionospheric storms and the magnetic field interrupt the earth's magnetic field. It can take a couple of days for it to recover. A lot of data has been collected, and is now freely available on the Internet, together with ionosphere maps to predict the effects of solar energy.

A powerful new technique recently developed is tomography, which is like ultrasound and can measure phase differences in signals from satellites, and shows electron density. The study of propagation is therefore an important part of modern technology to ensure that the limited resource of the radio spectrum is used most efficiently, and Les Barclay gave us a very informative and detailed look into this important work.

Deputy Chairman Andrew thanked Les for a most interesting evening and called for the customary appreciation from members.

Then followed a vote of thanks and presentation of a Christmas gift by our President to Jean. Roy thanked Jean for her dedication in providing the refreshments for our tea breaks over many years, with a tinge of regret that her services could not continue at the new venue.

Postscript

At the end of our final meeting at the Marconi College, the locking-up routine was a poignant moment for the President.

I am sure you have all heard the saying "Last one out please switch off the light" in the context of the end of an era; this being the case, our Vice-President Dick recorded the event for history.



SUBSCRIPTIONS - FINAL REMINDER

For those who have not yet renewed their Subscriptions, these are now very overdue. If you are not able to get to the next meeting please send to the address at the end of this Newsletter, cheques to be made payable to "Chelmsford Amateur Radio Society", where applicable your new Membership card will be sent with the next Newsletter.

COMMITTEE MEETING

The next Committee meeting will be held at 7.30pm on Wednesday 14th January at the QTH of Roy and Ela, you are welcome to join us.

THE CHRISTMAS DINNER - Geoff, G7KLV

The year 1997 has been quite a milestone in the Club's history. With the closing of Marconi College, our meeting place for the last forty three years, it became necessary to hunt round for a new venue. That problem has, we hope, been solved. Great sigh of relief! But, oh dear, what about the Christmas Party?

Without batting a collective eyelid your Committee took the problem on board with their usual sang froid! After some very extensive field trials, all conducted at enormous cost but at their own expense of course, a momentous decision was taken. We decided on Roy and Ela's suggestion to try their local at Gt. Waltham, The Beehive.

So it was that a number of members and their ladies together with our Guest of Honour, Geoff Bowles of the Museum Service gathered at 7.30 on Thursday the 11th to be welcomed by our President. For those who were not familiar with Gt. Waltham he detailed it's many attractions. But for most of us the main one is the radio station at the top of the hill on the Mashbury Road!

Our Master of Ceremonies for the evening was our own Chairman John G3DET. We were actually very lucky to have him with us. He had spent the previous day with his dentist tussling with a troublesome tooth. And, would you believe, he had also just spent a few nights with our last Secretary's wife, Chris. However, it was all absolutely above reproach in Ward B9 at Broomfield Hospital! Anyway, in spite of all that or, perhaps, because of it he was in cracking form throughout the evening.

So, after a little gentle boozing in the bar we were ushered into the dining room by 'mine host'. On the KISS principle we had elected to have the traditional turkey as main course but starters and deserts were to our individual choice from a wide and interesting range.

I had chosen Herring Roes to start and Meringue Gateau to follow the excellently cooked and piping hot turkey, together with the usual trimmings and mixed vegetables. The helpings were generous and the Christmas Pud was, I am told, delicious!

Between courses Furtive Fred G6FXM was busy with his Camcorder; Don't miss our Video Evening!

Ela had excelled herself this year with a wide range of topical prizes for the ever popular traditional draw. The Committee didn't carry off too many prizes!

Our Christmas Dinners have always been excellent functions but I think this year's has been the best, due in no small part, to the friendly and welcoming atmosphere created by the landlord and lady of 'The Beehive' and their staff.

Finally, our thanks to the staff of 'The Beehive', to Chairman John and above all to Ela and Roy for organising the happy occasion!

MEMBERS ADVERTISEMENTS

For Sale "New Genius Scanner B105" Comprising; 256 Level Grayscale and Black/White Handscanner, Scanner Interface Card, GO-CR Multilingual/Omnifont OCR Program, iPhoto Deluxe Image Processing Program c/w manuals, in original packaging, £35 o.n.o. Contact Eric Lawley, G8ADX, ☎ (01277)353127

*A Happy and Healthy New Year
to all our readers*

73 from Roy & Ela Martyr,
G3PMX & G6HKM

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Deadline for the next NewsLetter is Saturday 24th January