

Chelmsford Amateur Radio Society.

NEWSLETTER No. 287

December 1989

NEXT MEETING - SALE OF SURPLUS EQUIPMENT.

Tuesday 5th December is the date for the annual migration of the "ever useful, too good to throw away" items of equipment that adorn our radio shacks.

The Society looks forward to this occasion to top up the club funds with a percentage from the sale and some whole profit from donated items.

For the benefit of the auctioneer, please indicate by means of a card the owner of the item for sale and if there is any reserve price.

Preview will start at 7.30pm with the sale starting a few minutes later and we look forward to an evening of lively bidding at The Marconi College, Arbour Lane, Chelmsford.

DATES FOR YOUR DIARY.

- 5 Dec. CLUB MEETING - Sale of Surplus Equipment.
- 16 Dec. CLUB SOCIAL - Telford Lodge, Arbour Lane.
- 2 Jan. CLUB MEETING - The Annual Film/Video Show.

LAST MONTHS MEETING "SPORADIC E PROPAGATION" - Richard G4ICP.

The meeting opened with the presentation, by Louis Varney G5RV, of the Chelmsford DF Trophy to Ian Butson G4HKC, for his achievements in this years events, then a great hush settled over the capacity crowd of members and distinguished guests as Jim Bacon, G3YLA began to enlighten us all to this mysterious subject.

There are two main forms of propagation which can affect the VHF bands, Tropospheric (or 'Tropo') and Sporadic E (or E's). As the lecture progressed with slides and OHP projections, it became apparent that the reasons 'why' and 'how', became quite an interesting set of problems.

E's propagation is influenced by what is happening in the 'E' layer of the ionosphere, about 100-120km above the earth's surface. At certain times, clouds of ionisation build up, moving about at high speed most of the time. Their behaviour is very sporadic and unpredictable, hence the name for this phenomenon. These clouds of ionisation prevent signals of certain frequencies passing out into space, and instead, reflect, or more accurately refract, the signals back to earth. These frequencies range from about 20 to 200MHz, sometimes even higher. E's will effect the lower range of frequencies first, and as ionisation intensifies, the effect will spread upwards through that frequency range. The distance the signals 'bounce' between the transmitter and receiver varies with frequency and ionisation intensity. Generally, skip distances are smaller at lower frequencies and longer distances are obtained on any one frequency with low intensity ionisation. Thus the maximum range will occur at the beginning of the E's opening, and so as the E's opening intensifies, the skip distance becomes less and less. Although rare, it is possible to have multi hops, where the signal hits an ionisation cloud, and is bounced back to earth, bounced back to another ionisation cloud and then bounced back to earth, into another skip zone.

Signals received by E's can be very strong, but one thing for sure, the signal will almost definitely be subject to sharp fading, and be short lived. During an intensive opening E's can be an excellent way of working the DX as big power levels and huge aerials are not needed. Location is not of prime importance, as 'line of sight' is not required. Signals received may come from one specific area, but when things get intense, they may come from many areas at once. Also, as the clouds are always on the move, openings will normally sweep from one country to another, eg, starting from the USSR moving to Yugoslavia and end up in Spain.

In theory E's are possible all year round but in practice there are two distinct peaks; the big one through May to September with a secondary showing in December to January.

The mysteries cloaking the predictability of E's has many theories including a relationship with the solar cycle(s), and meteor ionisation. One of the more likely causes are Atmospheric Gravity Waves, which are principally triggered by thunderstorms, strong wind movements called Jetstreams, and airflows over mountains, and the corresponding windshear mechanisms. Jim has said to check for a K index value of less than 3, that is, a relatively undisturbed Geomagnetic field. Both factors that have been noted during an opening, however there are exceptions, particularly with E's of the auroral type.

Jim stressed the great value of logs sent to him from radio amateurs that give times, locators and signal strengths and effects noted during E's openings, which all add to the overall picture.

By way of comparison, Tropo takes place in the troposphere, a layer of the atmosphere which extends from the earth's surface up to some 5km. Under normal conditions signals above 50MHz will mainly pass through this layer and get lost into space. Hence signals at VHF are normally 'line of sight' - the curvature of the earth restricts the signals exceeding this distance. However, when there are changes in the refractive index in the troposphere, this may lead to signals travelling further than 'line of sight'. Signals, instead of being lost in space, are refracted or bent back to earth again. The refractive index, the factor which influences how much the signals are refracted is influenced by two main factors - humidity and temperature.

LAST MONTHS MEETING - continued.

Changes in atmospheric pressure are caused by changes in humidity and temperature, so it follows this is an accompanying factor. Tropo lifts can happen at any time of the year, but perhaps autumn is the best time.

Unlike E's, there will commonly be little or no fading, and signals may last for considerable lengths of time.

Finally, a really useful method of prediction for E's or Tropo, is that it usually begins when you are leaving for work, or going to visit the mother-in-law!

The concluding vote of thanks was proposed by Geoff G3EDM and was enthusiastically supported by the 70 strong audience.

CLUB CHRISTMAS SOCIAL.

We are pleased with the positive response for this event which will be held on December 16th at the Telford Lodge (Marconi Residence), at 7.30pm for 8.15pm. The Buffet Menu will consist of Assorted Canapes, Prawn Brouchees, Smoked Salmon Boats, Cocktail Pork Pies, Quiche Lorraine, Turkey Kieves, Sausage Rolls, Assorted Cocktail Sandwiches, Profiteroles Filled with Pate, Gateau, Mince Pies and Coffee. The cost will be £7.25 plus VAT per person, drinks of your choice extra from the bar. The usual car parking arrangements at the College will be available. Names and £2.50 per person (non-refundable deposit) to Gwyn G4FKH, our Secretary, the balance to be paid in cash on the night.

The last chance to make your reservation will be at the December club meeting, this event was a great success last year, do not miss it.

MEMBERS NEWS - E1a G6HKM.

The Society extends a welcome to a new member, John Chandler G7EJT.

May I remind you that subscriptions are now OVERDUE, inflation has not taken its toll and rates stay the same, i.e., £3.00, and £1.50 for Senior Citizens and Students. If you cannot get to the next meeting Subs may be sent to me at the address given at the end of the newsletter, cheques to be made payable to 'Chelmsford Amateur Radio Society' please.

COMMITTEE MEETING.

The December Committee Meeting will be held in the Telford Lodge (Marconi College Residence) at 7:30pm on Wednesday, 13th December. You are most welcome to join us.

THE CLUB EQUIPMENT FUND.

The fund is off to an encouraging start with the donations placed in the model transceiver collection box, this unit will be in a prominent position at all our meetings.

If any member has any good fund-raising ideas please contact any committee member with your suggestions.

Thank you for your support and here's looking forward to the purchase of the equipment.

SIX METRES - E1a G6HKM.

At long last its all happening, those people who got impatient with 6M and sold their rigs are probably smarting now.

I managed to catch another brief opening to VK on the 31st October, this time in the Perth area when I had QSO's with VK6HK, VK6JJ and VK6KXW.

1st Nov. things started to get going with an opening to Ecuador, Canada and the States. On the 2nd, VP5D (Turks & Caicos) and another half a dozen stations in the States worked. 5th, ZC4MK (Cyprus) and TR8CA (Gabon). 6th, just one QSO but this time with ZD8MB (Ascension Isle). On the 10th, 18 stations in the States were worked plus Ecuador and Canada. 3 pages worked in the log on the 11th, my CQ call was answered by KP4KN (Puerto Rico), followed by a GU, VE1 and a PA3, then hunting and joining horrendous pile-ups, VO1QF (Newfoundland) and ZF1RC (Cayman Isles), calling CQ again I had a pile-up and worked loads of new grid squares, the Americans call them "grids", we call them locator squares.

The 6M band sounded like 20M, it was incredible. Every day since, with the exception of the 17th, when we had a very good aurora, the band has been open and I have worked many stations in the Caribbean including KG4SM (Guantanamo Bay), P43AS (Aruba), TI2KD (Costa Rica), 8P6JW (Barbados), H1BW (Dominican Rep.) and KP2A (Virgin Isles), the got-aways included EL2FO, HH7PV, FY5DB, HK3AVR and PJ9EE. Who needs a class A Licence!

YOUR NEWSLETTER.

We have not received much input recently, such as letters to the editor, etc. The winter months are usually quiet as regards topical events so any contributions from members will be appreciated.

73 from Roy & E1a Martyr, G3PMX & G6HKM

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MEMBERS ADVERTISEMENTS

WANTED

A 62 SET, any condition!

Richard, G4ICP, Tel No. (0376)84478.