Chelmsford Amateur Radio Society.

NEWSLETTER No.292

Callsign G0MWT May 1990

NEXT MEETING - Three Mini-Lectures.

On Tuesday 1st May we call on three of our members to provide us with lectures on subjects of their choice.

1) Chris, G0IPU with "Box Bashing for Beginners".
2) Roy, G3PMX with "Terminal Diseases".
3) Brian G0BDS with "Make Light Work of it".

The meeting starts at 7.30pm at The Marconi College, Arbour Lane, Chelmsford.

DATES FOR YOUR DIARY.

28 April	OPEN DAY TO CELEBRATE G0MWT - 10am to 6pm at the QTH of G3PMX/G6HKM.
1 May	CLUB MEETING - Mini-Lectures by G0IPU, G3PMX and G0BDS.
27 May	EAST SUFFOLK WIRELESS REVIVAL - Ipswich (details on notice board).
5 June	CLUB MEETING - Constructors' Competition.

PLANNING FOR H.F. FIELD DAY 1990.

The next meeting of the Field Day committee will be held at 7.30pm on Tuesday May 15th at the QTH of Charles, G0GJS. Any member interested in assisting is invited to attend but please inform Charles that you are coming and get QTH directions, Tel.No.(0245)256654.

SPONSORSHIP OF NFD. - Andrew G4KQE.

We would like to involve more members in NFD this year (G0MWT/P) and a good way to do this and to increase the Equipment Fund is to arrange for sponsorship.

The form this will take, can be for example, 1p per QSO or fix overall, but the amount and method of sponsorship would be entirely up to the individual sponsor.

We got off to a good start at the last meeting and sponsorship forms will be available again at the next meeting. Thank you for your support.

OPEN DAY - G0MWT.

Roy and Ela will be pleased to see you any time between 10am and 6pm on Saturday 28th April, a constant supply of refreshments will be provided by willing helpers.

The full address is 'Little Fellows', 1 High Houses, Mashbury Road, Great Waltham.

The grid reference is TL687135 and High Houses is marked on most ordnance maps.

Talk-in is available on 2 metres FM by calling on S20 for a QSY to a clear channel.

If hot and sunny (say a prayer) please bring a deck chair or two to relax in!

TWINNING OF CHELMSFORD WITH BACKNANG.

In parallel with the Borough celebrations the Sunday evening sked with Peter, DK7SP and his friends continue on 80 metres; so far the contacts have been very good. The sked starts at 20.30 UTC. and the frequency is around 3.76MHz

Our G0MWT open-day conveniently coincides with the festival dates and we have already arranged with DK7SP to have QSO's during the day on 40 metres.

LAST MONTHS MEETING - Aerials for Restricted Sites - Richard G4ICP.

Phil Ashton, G3XAP began by saying that there is no substitute for a full sized, self resonant antenna and intended this comment to be constructive rather than destructive. It was not however intended to imply "full sized or nothing". It must be understood that compromise antennas will always give compromise results. Do not erect a compromise antenna for any reason other than lack of available space. If a compromise antenna must be used, be aware of the short-comings of the intended design - and try to do as much as you can to overcome them.

There are many approaches to getting an antenna on to a site that is too small to accommodate a full size device. One is inductive loading of an antenna in order to reduce its physical length, the 'bending' of an antenna to fit the site, the use of vertical antennas and the use of end fed wires.

Inductive loading. It is worth noting that when a tri-band yagi (e.g.Mosley TA33 etc) is used on 14MHz, it is acting as an inductively loaded 3 element beam, and that these antennas give good results is evidence of the fact inductive loading is an acceptable technique when a parallel resonant trap is subjected to RF energy at a frequency lower than its resonant frequency, it behaves as an inductance. The actual length of the driven element is approx: 23ft, compared with about 33ft for a full sized element - length reduction is thus approx: 30%.

The laws of nature determine that you don't get something for nothing. Bandwidth is adversely affected by inductive loading also antenna impedance is affected.

Phil suggested that when inductive loading is used on dipoles or end-fed wires, the coil(s) should be positioned about midway between the feed point and the ends, as this is a good compromise between antenna current and coil losses. Bear in mind as an antenna is shortened, the amount of power dissipated by the coil increases. Hence the coil 'quality' used to resonate a short antenna becomes more important as the antenna becomes shorter.

LAST MONTHS MEETING - continued.
It is interesting to note that mobile stations using 80m and 160m use very short antennas and still obtain acceptable results. However the secret of success with such antennas lie within the loading coil, and lack of attention in this department would yield very mediocre results.
Antenna Bending. Where only slight reduction in span is required, the simple approach is the 'inverted V', a typical example is the W3DZZ with a horizontal span of 110ft, but if erected as an 'inverted V' with its centre at a height of 40ft, the span is only 85ft.
The most important point to consider when bending is that the high current portion should be in the clear and preferably at the highest point of the antenna. With the dipole this is fairly easy to arrange, but when end-fed wires are used as multiband antennas, the current antinodes will change position on the wire as we change frequency.
Vertical Antennas. If you have little space, then go straight up, however, as the height of a vertical antenna is increased, guying becomes necessary and we need to think in terms of horizontal space. When considering the lower bands i.e. 80 and 40m we can meet severe problems with verticals which are quarter-wave devices, since we need to provide a radial or ground system against which the antenna can operate. Hence what would appear to save space becomes less simple as the factors required for effective operation are considered.
Unless we are prepared to provide an effective ground system for a vertical the end result will be very poor. Phil said that the majority of cases of inneffective operation is a direct result of shortcomings in the ground system itself. By considering the use of vertical dipoles rather than a base fed quarter wave, there thus becomes no need for any ground system. Obviously this applies more in the case of 14, 21 and 28MHz rather than on 3.5 or 7MHz where vertical dipoles would be respectively 132 and 66ft in height! However, by applying the principles of inductive loading and bending, such antennas may not be completely out of the question.
Regarding a vertical for 3.5 and 7MHz, it is likely that a full sized quarter-wave will not be possible at a restricted site and that some bending or loading will be required. Centre loading can be quite effective, also arranging for switching inductances in and out of circuit it is possible to use the same antenna for more than one band.
End Fed Wires. Are obviously those which have a feedpoint in the shack and which can be erected in any one of an infinite number of configurations. We must consider the current antinodes on the wire antenna will be different positions depending on frequency, and since these are the areas from which maximum radiation takes place (and max. signal pick-up during receive) it is important that they are in a portion of the wire that is not badly screened by surrounding structures. For a given length of wire on a given frequency, these antinodes cannot be moved and will always be a quarter wave from the 'non-fed' end, and at odd multiples of quarter waves for wires that are sufficiently long to have more than one current antinode. To reposition the antinodes for a favourite band where only one physical placement of the wire is possible; can be thus considered:
(i) By using inductive loading at the non-fed end of the wire.
(ii) The use of bending techniques.
(iii) The use of a relay to switch extra lengths of wire or coils in and out of circuit at the non-fed end.
(iv) The use of traps.
By way of conclusion, it can be accepted that HF communication is possible from just about any site and although compromise antennas can never perform as well as their full sized counterparts, surprisingly good results are possible!

DF NEWS - Dick G3WHR.
Just a reminder of events this month:-
4 May COLCHESTER, 13 May RSGB SALISBURY, 18 May CHELMSFORD.
All Chelmsford Events start Tiptree Heath NGR 884184.
All Colchester Events start Fordham Heath NGR 945264.
Local events start at 7.30pm and end at 9.00pm (or later!). See you at the start.

NEW MEMBERS.
The Society extends a welcome to 2 new members this month, Colin Page a SWL and Ron Hilson, GW4OWX, Ron lived in Essex before his move to Wales about 18 months ago and was a very active member of the Southend ARS, he is also interested in steam engines and drives on a narrow guage railway.

COMMITTEE MEETING.
The May Committee Meeting will be held in the Telford Lodge (Marconi College Residence) at 7:30pm on Wednesday, 9th May. You are most welcome to join us.

73 from Roy & Ela Martyr, G3PMX & G6HKM

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or Office (0245) 353221 Ex.3815

MEMBERS ADVERTISEMENTS

WANTED
Bed & breakfast accommodation for 2 for occasional visits to Essex, possibly Friday to Monday, willing to pay or offer return accommodation at my QTH in Gwynedd.
Ron Hilson GW4OWX. Tel.No.(0766)514548.