

# CHELMSFORD AMATEUR RADIO SOCIETY

NEWSLETTER No.249

October 1986

## NEXT MEETING - Annual General Meeting and Members Question Time.

I hope as many members as possible will be able to attend the AGM, not only to join in the vote of thanks to the retiring Committee for all their excellent work in the past year but also to participate in the election of the new committee.

The continued success of CARS can be attributed to the voluntary efforts of committee members and it is very rewarding to your President to know that there is no shortage of willing hands ready to carry us into the future, come along and see what I mean!

The Agenda for the AGM will follow the traditional format, starting at 7.30pm in the Marconi College, Arbour Lane, Chelmsford, on Tuesday 7th October 1986.

There has been a change in the October programme to that previously announced, the testing of members transmitters has been postponed to a later meeting on the recommendation of the committee that such an event deserves a whole evening dedicated to the subject - watch "Dates for your diary"

In its place we are responding to the request for a members question and answer session where we can draw on the wide range of knowledge known to exist in the club. This can be equally helpful to new members and established transmitters alike. If you have any questions which have been haunting you, bring them along for discussion.

## DATES FOR YOUR DIARY

7 October	- A.G.M. and Members Question Time.
19 October	- Mid-Essex Trophy.
4 November	- Junk sale.
2 December	- R.D.F. to Radar.
6 January	- Film Show.

## LAST MEETING - Dick G3WHR.

This featured an illustrated talk by Mr Barry Peters about the British Antarctic Survey.

After some initial facts and figures; eg. Antarctica has a land area approximately fifty times larger than the UK, most of it covered by an ice sheet which can be 4500m thick at the centre; Barry used the projector to take us on a trip round the five manned bases, as if we had joined the survey team and were going south for the first time.

The slides were good, but they were really brought to life for us by Barry's detailed knowledge of life and conditions at each of the bases. First we visited Halley, where the buildings sink 1m into the ice each year and have to be renewed every 10 years. Then on to Faraday, Rothera, Signy and Bird Island.

Barry had brought with him some of the specialised items needed for survival in temperatures of -50 degrees and one of the radios used by field expeditions to contact their base.

Communications with the UK are handled by satcom, with hf as a backup. But once the supply ship has left each station has to be self supporting. This requires planning, and is where Barry and the other four logistics officers are involved in placing 5000 orders for 1300 tons of items to be packed in over 13000 boxes

## COMMITTEE MEETING

The October Committee Meeting will be held in the Marconi College Residence at 7:30pm on Wednesday, 15th October. You are most welcome to join us.

## DF NEWS - Dick G3WHR.

The standard of DF hunting has improved so much this year that we decided to make the last Chelmsford event a two station contest. At this time of year it gets dark before 8pm so it became a double night event.

Both signals were heard at the start but everyone decided to go for the strongest signal first. Alan G4PQY/P was hidden in Layer wood, Tiptree; most of us were in the vicinity of the Tx by 8pm but only Paul managed to home in on the transmission. The rest of us found the aerial and followed it to find a knot at one end and Alan at the other. Unfortunately Colin had mislaid his navigator and by the time he had been found the rest of us had gone. Finding a Tx in the middle of a wood on your own is not easy, especially at night.

For the second station, Pat G4TFP/P had chosen a footpath in Peldon. This was a very successful site because there were no obvious signs on the map to indicate his location, the DF bearings had to be accurate. The first team on-site were chased up to the transmitter by two horses - rather unnerving to hear hooves thundering up behind you in the dark.

## RESULTS

	G4PQY/P	G4TFP/P
1 Paul Clark	8.04	8.55
2 Ian Butson	8.17	9.14
3 Andrew Mead	8.21	9.18
4 Peter Larbalestier	8.18	9.19
5 Roy Emery	8.16	9.24
6 Dick Brocks	8.24	9.28
7 Frank Pearson	8.17	9.29
8 Colin Baisden	8.56	----

## THIS MONTHS EVENT

Sunday 19 October MID-ESSEX TROPHY, a two station event run according to National qualifying rules. The start will be from Layer Breton Heath at 1.20pm.

**THE 64FKH 'ALL HF SPECIAL' Antenna - Gwyn.**

'At last' some may say, I have put pen to paper and published my solution to the small garden H.F. Antenna saga. During my professional and amateur use of the H.F. spectrum I have tried out many different aerial types. Not least of these was my various attempts at the GSRV and its derivatives. LW's perform very well, but from my experience the only antenna that beats a dipole is a beam. Even a beam has its limitations, especially as regards spectrum coverage and contest working.

The pre-requisites I wished to satisfy were :-

- 1) All H.F. coverage; 80m - 10m.
- 2) Broadband, i.e. total CW portion coverage. Also QSY capability without touching the A.T.U.
- 3) Zero interference factor.
- 4) Low cost.

For some time I have been attempting to construct an efficient aerial for 80m. One that would fit into my garden without the neighbours complaining of wire everywhere. My passion has always been for CW so coverage of the C.W. portion of the bands is important to me. Of course with an all band aerial an A.T.U. will be necessary. In today's world of high density housing, T.V.I./B.C.I. is to be avoided at all costs. (See Rad.Com. September 1986) This aerial has proved remarkable for its ability in this last regard. Finally the reason for Homebrew is to produce something cheaper and comparable in performance to that which is commercially available.

This aerial is a coming together of a number of constituent parts, none of which do I claim any originality. Rather its the whole that is different (I believe). Rad.Com., Roy Martyr - C.A.R.S.'s President, Ham Radio Today, A.R.R.L. Handbook, G6XN's 'Antenna's for all Locations' are all sources of information for this design, not to mention that dreaded 'Smith Chart'.

sellotaped together, and (B) 2 lengths of P.T.F.E. cable, 2.5m long about 20/22 S.W.G. The use of the stated material has been found to be critical. The cable is twisted by clamping the two wires together in a hand-drill and anchoring the drill to a work-bench. A harmonic (son or daughter) is needed to slowly turn the handle of the drill whilst the wires are held loosely between the ring finger and thumb. With the turning, slowly pass along the length of wire leaving behind a twisted pair. The individual wires are allowed to turn, which stops the effect of crimping and the possibility of shorting. I have found that using this method 2.5 turns per centimetre is easily attained. Between 2.5 and 4 turns/cm is optimum. Wind 20 turns onto the pair of cores as close as possible, leaving as much of the core exposed as possible. One side of the turns connects to the Coax, the other to the 300 ohm feeder (simple).

Figure 2 depicts my variation on this, by the insertion of inductive lengthening. Full dimensions are again given, the lengths are important but the shape is not, as long as the angles are not less than 45 degrees. The balun is exactly the same as for the basic model. The loading coils are made by taping 3 ferrite rods together and winding 45 turns of the wire on them. Therefore, only two lengths of wire are used. I buy multi-strand P.V.C. covered wire from 'Westlake', cheap but good. The coax should be as short as possible which of course avoids resonant lengths. Symmetry is the key to such an aerial, so ensure that both halves match exactly.

Construction follows normal practice. I use Araldite as well as self amalgamating tape for the joints. To date the larger version has been used for GB4NSC very successfully, loading easily on all bands with my FT902 A.T.U. The smaller version I use at home, which again, with the same A.T.U. loads easily on all bands. I receive consistently good reports on 80m, having had no T.V.I. etc., complaints (even from the XYL), a first. VK2 was worked the other morning on 7MHz., with similar results on the higher bands.

The shape of my aerial is as drawn, with the exception of a 45 degree turn in my feeder in the horizontal plane. I would think an 'Inverted Vee' configuration would be best, but other forms of construction should prove almost as effective. Plenty of scope for the experimenter.

**ANNUAL SOCIAL**

We propose to hold the Social on a Saturday in mid January. A suitable venue has been selected but the number is limited to 30, therefore, we must know by the AGM if you are interested. Please inform the secretary so that we can make a firm decision for the booking.

**INTERFERENCE...from the other side of the fence - Brian G3CVI.** Every amateur knows the effect of QRM but it is not everyone who is able to identify the very odd noises which can assail the ears, noises possibly not arising from other amateurs in the band. Some of the noises frequently heard can be identified easily while others are transient, experienced on several bands and at any time of day or night.

I suggest that you cassette record any of these types of QRM you suffer and, if you can, name them on the recording or if not, bring the tape to a meeting and probably somebody will know the sounds and will explain them. This could become a useful exercise and possibly a small library of QRMs could be built up to assist members in identifying their particular 'nasties'. The first step in suppressing an interfering signal is to find out what it is and then to find whence it comes then approaching the originator may follow more easily. Shall we try this folks? Let me have your ideas next meeting.

**OOPS - WHO CAN'T COUNT?**

For the second time in the history of the Newsletter there has been a hiccup in the number sequence. The sharp-eyed ones will have noticed that the last two Newsletters were 246. Previously May and June 1980 suffered the same fate so I am taking this opportunity to set the records straight (strictly for anniversary purposes) by jumping to the logical sequence number of 249.

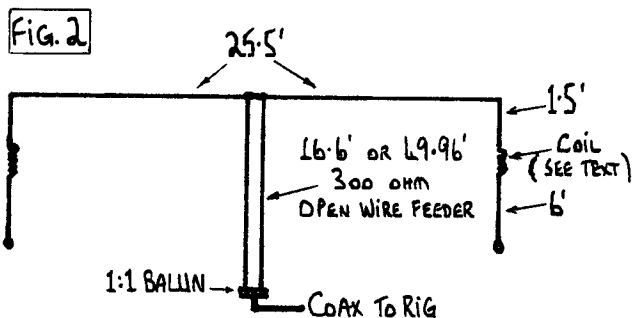
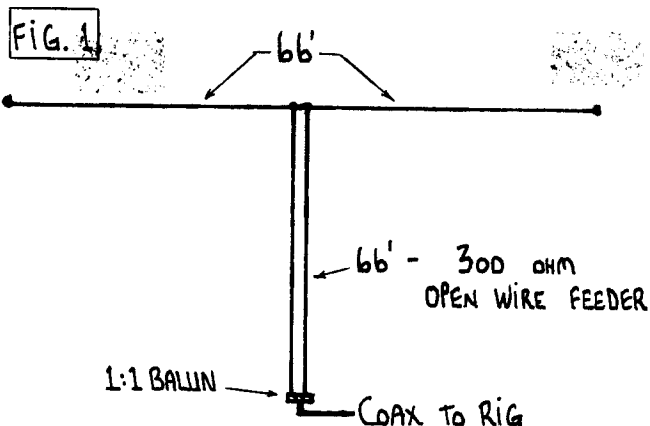


Figure 1 is the basic design, dimensions are given in the drawing. I use 300 ohm window feeder, available almost anywhere. Of course it is possible to construct this type of feeder, but it takes an awful lot of time. For the centre spacer I use an end insulator, (not egg). The 1:1 balun is the only special part of this design. I first saw it in 'Ham Radio Today', October 1983 issue. It's a general purpose balun, perfect for this type of use. To wind such a device all that is needed are :- (A) 2 x FX1588 ferrite cores,