

# Chelmsford Amateur Radio Society.

NEWSLETTER No.294

Callsign G0MWT

July 1990

## NEXT MEETING - What's Amateur Radio got to do with Beekeeping?

It is fashionable these days to talk "green" in consideration of the many financial and political demands on our ecology. In all the discussions, very small praise is given to the guys and gals who worldwide look after the likes and dislikes of our little winged friends the bees who in their turn contribute so much to the balance of nature.

Our long-standing member Geoff Mills, G3EDM is one of the dedicated band of beekeepers as well as co-ordinating county efforts with the national and international organisations. We look forward to hearing from Geoff how Amateur Radio can assist this worthy cause.

The meeting will start promptly at 7.30pm on Tuesday 3rd July at The Marconi College, Arbour Lane, Chelmsford.

## DATES FOR YOUR DIARY.

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| 3 July  | CLUB MEETING - What's Amateur Radio got to do with Beekeeping? G3EDM. |
| 6 July  | DF EVENT - Chelmsford, start Tiptree NGR 884148.                      |
| 22 July | COLCHESTER MOBILE RALLY.  |
| 29 July | DF EVENT - Our RSGB qualifying round, using Ipswich map OS169.        |
| 3 Aug.  | DF EVENT - Colchester, start Fordham Heath NGR 945264.                |
| 7 Aug.  | CLUB MEETING - Mark Francis from Waters and Stanton.                  |

## LAST MONTHS MEETING - Harry G2HPF.

A very good display of items constructed by members was entered for this years constructors competition, who says the days of homebrew is over!

The items were briefly described by their owners and the judges were faced with the job of deciding who the winners were to be.

First prize was awarded to Chris, G0IPU for his 45ft tiltover tower. Last year Chris entered an aerial array which was too big to get into the building, so this year he had a model of the tower on display. The real item had a ton of concrete attached to its base and was left at his QTH, but photographs of the finished item were produced. It consisted of a square section outer and an inner tubular section, and even the winching gears were home constructed. The cost of the project was about half the price of its commercial equivalent. Planning permission was obtained provided it was down when not in use. I would suggest that a packet TNC running all the time would get over this problem!

Second prize went to George, G0LKY for his Bencher type keyer made from an old brass cable gland, and mounted on a slab of marble. Tension and movement were easily adjusted.

Third prize went to Andrew, G4KQE for his LF Signal generator. This was neatly made and built around 8038CC waveform generator chip.

The Novice prize went to John, G7EJT for his DF receiver, so that puts him in the open section next year.

Another DF set, TX and RX was entered by Peter, G0KSJ. John, G0LSY produced a bi-directional inline 22dB coupler covering 2 to 80MHz which was immaculate. Denis, G4VGS emptied his holdall to produce a Victorian Radio Station consisting of wooden cases with dovetailed joints containing SWR bridge, ATU, Keyer, TCVR and PSU. The Tx was a VXO at 6W for 80 and 20 metres; externally Victorian but innards definitely 20th century.

Believing in belt and braces Andrew, G4KQE also produced a 6 metre Low Pass Chebyshev filter, made from 100% recycled parts. The performance figures obtained on a commercial test bench were impressive, insertion loss under 0.2dB and 35dB attenuation at 100MHz.

I also have a card for an entry labelled "The Shack", but it was not described, maybe he is not a bricklayer.

So thank you all for your entries and it is nice to know that some people do not just buy Black Boxes, but get down to using their hands and a few tools. Many thanks to the two Judges, Dick, G3WHR and Brian, G3CVI who had a hard time in making their decisions.

## N.F.D. 1990 - Gwyn G4FKH.

When I arrived on site this year Arthur, G3KPJ, had chopped down the grass for the operating area and had erected the operating tent. Two helpers did the NAFFI area grass while Arthur and I erected the NAFFI tent.

The rest of the helpers arrived at this point and we made an immediate assault on the Telomast, it went up quite easily because we did not use the beam this year. There were quite a lot of sky hooks needed, because of our decision to use dipoles on all bands, except for Top Band. This took almost the remainder of the day to accomplish. In the meantime back at the operating tent, Dick was constructing ATU's. The aerials were up by 15:15 but the operating position was not. The ATU's required tuning. We actually got on the air about 30 seconds prior to the contest beginning.

We started the contest on 40M and were doing great things; about 38 QSO's in the first 30 minutes, from this point it dropped off, little did we know that everyone was on 10M.

The operators and loggers worked hard throughout the night and all the following day, I would say that for the effort put in we didn't get enough QSO's. The reasons for this are numerous, i.e. right place at right time, not the number of stations taking part, etc.

N.F.D. 1990 (continued).

We made what actually looks like a respectable score and in the end was satisfactory, 631 QSO's.

There is to be a post-mortem and I'm sure some strategic points will come out. I think for a start we need to get on the air quicker next year, to see what band conditions are like. To do this we will require more volunteers to help with the erection process.

Now lets turn to the lighter side of the event; Dick G3WHR, passed on these gems:-

- 1) One of the ATU's was missing an earth connection on the tuning capacitor spindle. Dick attempted to tune it (minus knob) and only managed to resonate himself, ha!
- 2) When it came time to go onto 160M, a sniff of RF was requested. Because we had previously been on the HF bands and no changes had been made to the rig, he got 100W. Some resistors were noted to be smoking a few moments later.
- 3) The generator ran out of petrol at 04:01 on Sunday.
- 4) There were problems with individual Morse keys when they were plugged in, they did not work, although mine was O.K. every time.
- 5) The prize for the best turned out man went to Albert, Golf Nought Alpha Echo Hotel. Apparently he came dressed for a wedding, carnation and all, (didn't someone tell him it was a radio contest). Just joking Albert.

Well, thank-you everyone no matter how you participated, helping, providing sustenance, operating or logging, for an enjoyable weekend and see you on site again next year.

#### EQUIPMENT FUND - Andrew G4KQE.

With 631 QSO's completed at NFD the sponsorship raised nearly £120. Thank you to all those who supported this event. This means the equipment fund now stands in excess of £300, a fine effort in a short space of time.

#### A CHEAP AND EASY WAY TO GET ON 4M F.M. - Andrew G4KQE.

With the recent change in frequency allocations and the advent of newer, smaller equipment, there is a lot of "P" band (79-101MHz) equipment finding its way onto the surplus market and appearing at Rallies. Much of this equipment is the old faithful Pye "Westminster", which is a modular-built crystal controlled P.M.R. transceiver. It was discrete components and the P.C.B's are easy to work on. The circuitry is straightforward and easy to understand, so the "Westminster" lends itself ideally for the average amateur to work on.

At first sight, it may be thought that a transceiver for 79-101MHz was totally useless for any amateur band, but a study of the service manual reveals that the entire range of Westminsters from 66-174MHz use the same basic circuit with many common components and P.C.B's. This is particularly true of "P" band and "E" band (68-88MHz) equipment. For example, the transmitter multiplier board uses the same coils in both bands, but for "P" band some coils are tuned by 22pF capacitors, whereas "E" band uses 27pF.

With this in mind, I sat down with a service manual and worked out which components needed changing to change a "P" band transceiver to an "E" band one and these series of articles will explain how to do it. Once the job is done tuning up is a straightforward process, needing the minimum of test equipment (as I have) and the result is a quite sensitive 14W transceiver on 4 Metres FM for a very modest outlay. (I have seen "P" band Westminster at Rallies for £15).

To whet your appetite, let's do the transmitter first.

Remove the modulator/multiplier board, noting where the connecting wires go and note that the P.C.B, is silk-screened with the component legend.

Change the following capacitors, using similar types (silver mica) or plate ceramics:-

C2 & C9 = 100pF to 120pF. C23 & C25 = 39pF to 47pF. C35 = 18pF to 27pF.

C17 & C20 = 27pF to 39pF. C27, C30 & C32 = 22pF to 27pF.

You will see that some of the displaced capacitors can be re-used, so that cuts down the number of new components required. Some capacitors can be changed without removing its associated coil, but you will have to carefully remove some coils. Take care when removing the coils, as one of the pins goes into a "plated through" hole in the P.C.B. and so the solder is not only just on the back of the P.C.B, but also through the hole in the P.C.B. to the earth plane on the other side.

Having changed the 10 capacitors, the board can be replaced and tuned up.

The next article will deal with the P.A. and modifications to the transmitter.

#### COMMITTEE MEETING.

The July Committee Meeting will be held in the Telford Lodge (Marconi College Residence) at 7:30pm on Wednesday, 11th July. You are most welcome to join us.

#### HEARD ON THE AIR - Brian G3CVI.

An inter-G QSO, second over ran thus :-

"I am receiving you on a 747 at the moment old man" ..... reply from the other station "Did you need permission from the pilot?"

73 from Roy & Ela Martyr, G3PMX & G6HKM

Telephone, Home (0245) 360545  
or Office (0245) 353221 Ex.3815

1, High Houses,  
Mashbury Road,  
Great Waltham,  
CM3 1EL.