

Chelmsford Amateur Radio Society

Affiliated to the RSGB.

President: Dick Brocks G3WHR
Secretary: Charles Shelton G0GJS

Club Call Sign: G0MWT

Chairman: John Bowen G8DET
Treasurer: Brian Thwaites G3CVI

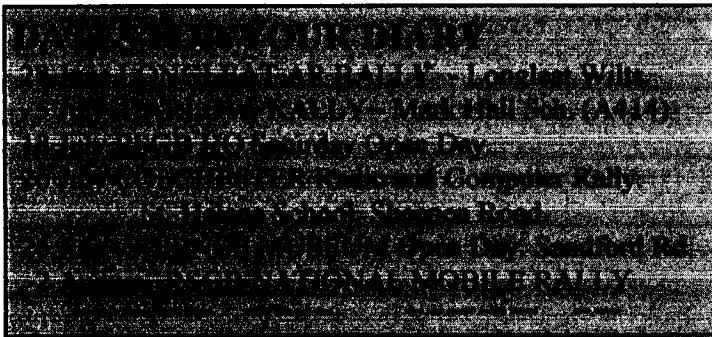
Newsletter No. 390

July 1998

The July Meeting. Your Committee is always on the lookout for guest speakers and Fred (which Fred you may ask) had left an indelible impression after having given a most entertaining discourse on a very mundane entry to the 1997 Constructors Competition! Dare we invite him to speak to us? We plucked up courage and he reluctantly accepted. We tried asking him to be specific on the subject matter but he remained rather vague so we pencilled it in as "**Oh no! Not An Evening With Fred**". You may have spent an evening with Gary Linneker and older members may recall an evening with Joyce Grenfell! Well this month's meeting will be nothing like that! Anyway, Fred comes a lot cheaper!

On pressing him further he has hinted that he intends to explore some lesser known aspects of communication which do not use radio waves! He has requested video facilities. We wonder why? It will all be in the best possible taste, we hope, and XYL's (and ladies) are particularly welcome. Our more unruly male Members have promised to behave decorously and our Chairman will be on his usual form, thinking laterally, no doubt!

Don't miss what promises to be an entertaining evening. The date is Tuesday 7th July, the time 7-30pm and don't forget to bring your better half to meet Fred G6FXM!



GEOFF COCKERILL G2AMQ wishes to thank all members of Chelmsford Amateur Radio Society who signed the "Get Well" card at last month's meeting or who sent greetings by other means. Geoff's wife Margaret took the card to Southend Hospital a few hours after the operation and it was greatly appreciated. Geoff is now convalescing at home but hopes to attend next month's meeting.

Friends are one of life's great blessings!

G0MWT is the callsign used for the Tuesday evening CLUB NET using 28.325MHz. Roy G3PMX ran the net superbly for very many years and we need a successor to carry Roy's work. In the past Charles G0GJS and more recently Harry G5HF have very ably filled the post on a temporary basis but understandably would prefer not to adopt the job permanently. It has been decided therefore that regular members would run the net in turn for one month at a time. Chris G0IPU will take control for the rest of June. Colin G0TRM for July, Geoff G3EDM for August, Ken G3PMW for September and Harry G5HF for October. Given notice Brian G3CVI will act as standby if any of the above are unable to operate.

Last Months Meeting - John G8DET

The aim of the annual Constructors Competition is to promote the home construction of equipment for radio amateur applications.

With only three entries on the display table the Chairman made an earnest request for any "modesty" entries to be brought to the forum - this resulted in more than doubling the number of entries!

The Judges used an "Aide Memoire" in their difficult task of deciding who should be awarded the prizes. Is it Amateur Radio? Is it useful? Does it do what it is supposed to do? Does it have special features? Is it safe? Does the presenter have manufacturing equipment at work or is it totally home produced? Is it from a kit or is it home constructed? Does it work?

Fred G2HNF was first to present his 13.8 volt, 21 amp power supply. This was constructed at home from a surplus PM10 power supply hence, the

beautiful mains transformer and high dissipation heat sinks. Fred required his PSU to have full over voltage and current protection built in and to shut down completely rather than to continue to supply an excessive power under fault conditions.

He had chosen the 3 terminal regulator L200 instead of the more traditional 723 as it had temperature protection built in, as well as current limiting. It was also much less prone to RF interference, a necessity for powering amateur transmitters! It also used less components and was only 50p more at £2.35 than the 723. A separate winding on the transformer provided the control voltage which operated a relay to isolate the output. After tripping manual reset is required. The case was superbly constructed from B&Q aluminium angle and sheet. Awarded 3rd Prize.

Tom G4INM produced a beautifully assembled 80m SSB transmitter/receiver, a design by VE7QK, published in the QRP Club magazine, SPRAT. The main board used a kit PCB with the output filter/power indicator constructed on a small Vero board.

It was amazing to see what modern components could do! Twenty years ago this small box would have occupied a small rack of equipment. Tom told the audience that it was designed for SSB but could be modified for CW. It was VCO controlled, produced 5 watts and with his G5RV aerial was very good for local contacts. Awarded 2nd Prize.

Geoff G7KLV produced a Digital Capacitance Meter.

Introducing his home constructed handywork Geoff said he always had difficulty in de-ciphering the various color codes and markings on capacitors. The circuit was cribbed from Everyday Electronics Dec 1985. The unknown capacitor is charged through a resistor and when the voltage reaches 'half supply' it triggers a monostable to produce a pulse, the length of which depends on the size of the capacitor. This pulse is used to open a gate which passes crystal clock pulses to the counter/display. With correct proportioning of the resistor and clock speeds the device will read uF, nF and pF without ambiguity. The original design, intended for battery operation, used an economiser circuit and this has been retained. Awarded 1st Prize.

Geoff also entered an aid to filter design. Many filter design recipes are available and this one uses the tables in the RADCOM Handbook. These tables give attenuation for generalised designs of filters of one ohm impedance and cut-off frequency of one radian/second! That is the clever part. Using a spreadsheet program (MS Works) the data has been stored and it is only necessary to enter the desired impedance and cut-off frequency to get the component values. Doing the normalising process with a calculator is tedious and time consuming. Using the spreadsheet produces the answers in milliseconds or about ten seconds without

a maths coprocessor! This program is available to Members.

Carl G3PEM brought along a Grid Dip Meter/Wavemeter constructed in 1970, based on a RADCOM design of 1968, but not shown before. The case was professionally made as was the dial. The plug-in coils were made using old 90 volt battery plugs and sockets and covered the range 1.8MHz to 146MHz. It used an OC170 (germanium VHF transistor) and was recently checked and had held its frequency calibration. Awarded the Novice Prize. This should encourage other entries in next year's competition!

Ralph G3NAA produced a collection of beautifully turned wooden tops and Yo-Yos which could be used to fill in the time waiting for a CQ call to be answered on 70cms! They were turned at home on a wood turning lathe out of oak and mahogany. Awarded a Special Prize of £2.00 for skill, temerity and nerve in submitting his entry.

Peter Mead, our youngest Member (12 years old), produced a small box housing a transformer and components to make a Nicad charger. The parts were scrounged from Dad, Andrew G4KQE, who was Peter's assistant in finding a screwdriver to open the case to show to the audience. The circuit was traditional and neatly constructed without the need for a PCB. A question from the floor prompted the fact that a separate timer is used to control the charge. A very useful device in modern households filled with battery operated units!

Peter Graves G0KSI entered a half watt AM/CW crystal controlled top-band transmitter with a very famous track record. It was the hidden station on a number of DF Hunts including the National Finals. It was constructed in a small die cast box with an internal microphone. It could be driven by a PP3 battery but was usually used with an external battery.

Colin G0TRM showed a complex timer which used PCB's and must have cost a lot of money - this came in the category of what he did NOT want. He then showed us what he DID want! This was a similar unit modified to give, by switch selection, 'time to delayed start' or 'time to stop' functions. It retained the original clockwork mechanism with the addition of a pilot lamp and 13 amp socket. Another very useful item in the battery charging world!

Our new President, Dick Brocks G3WHR, presented the prizes as his first official engagement. Each prize winner was presented with a personalised certificate produced by Ela G6HKM assisted by David (her Son). The borders were in colour requiring 98 separate operations on her lap-top computer to obtain the desired effect. Thank you Ela and David.

In closing the meeting Dick thanked the two co-opted judges, Murray G6JYB and Bob M1CMY, and John G8DET for their deliberations.

DF News - Andrew G4KQE

Cars Members Qualify for the National Final.

This year's DF season is now well underway, with three of the eight Qualifying events having been run and already several club members will be in the National Final to be held in Dartford in September.

On 11th May we went to Chard in Somerset for the start of the Torbay event. One signal came from the East, which we estimated to be located on the edge of the map, and the other stronger signal seemed to come from a densely wooded area on the Black Down Hills near Taunton.

We decided to go for the Easterly station first, and managed to take two bearings on the 2 o'clock transmission, which nicely pinpointed the station to the appropriately named 'Ham Hill Country Park'. This seemed to be an old quarry and wooded area turned into a recreational area. The signal came on just as we had arrived and took us into the Country Park. Unfortunately, the transmission went off before we were able to locate exactly in which part of the park the station was located, so we ran into the wood, searching and waiting for the next signal. When the signal did come up, we found that we had overshot, so had to run back to of the wood to the quarry, only to find several other teams had also arrived on the scene! A few minutes frantic searching in hawthorn and brambles soon located the transmitter, and after clocking in we set off for the Westerly station.

We took a couple of bearings along the way and decided to investigate a wood on Adcombe Hill. When we arrived, the presence of another competitors car confirmed the site. Running into the wood we soon caught up with the other competitor, but once again, slightly overshoot. When the signal came up and took us closer to the transmitter, we found Mike Hawkins also searching the wood. The signal was all over the

place, so we guessed he had lots of wire up. After a few minutes we noticed Mike looking rather pleased with himself, and not rushing about any more - he had found the transmitter, but it was only a few more minutes when we found a beaten down track where the first wave of competitors had been, followed that, and clocked in to the transmitter.

Back at the tea when the results were announced, we were delighted to learn that Mike had won, and we had come second, guaranteeing a place for us both in the National Final.

The Mid-Thames event was held recently on 7th June on the Reading and Windsor map. The first station was located on Hawley Common and I was the second person in the afternoon to find the station, but several people were running in as we left, including Dick Brocks and Paul Clark.

The second station was nearly an hour's drive away across the other side of the map, near Woodcote. We arrived in the vicinity of the wood with Dick and Paul, and after deciding exactly where in the wood the transmitter was, and finding the footpath, we ran in together with the other team. Paul's luck was with him and he found the station fairly quickly, followed 6 minutes later by Phil. Unfortunately in those six minutes, two more competitors found their second station, so when the results were announced, we were pleased to hear that Paul and Dick had come second, and so qualified for the Final, but Phil and I had come 5th.

So after only three events, Chelmsford members Mike Hawkins, Dick Brocks and myself have our places in the National Final, with Dick assisting Paul, and me assisting Phil. Another ex-Chelmsford member, Andy Collett, will also be in the Final, having qualified on the first event.

New Members. Now that we have a somewhat larger meeting room we have a vacancies for new members. Do you know anyone that may be interested in joining us on Tuesday evenings?. Contact Brian G3CVI. or any committee member.

Committee Mtg: Wed. 15th. July

The next Committee Meeting will be held at the QTH of John G8DET at 7-30PM. You are welcome to join our deliberations.

Club Test Equipment.

Testing a new antenna, checking your new rig? Learning Morse? Then contact John G8DET for availability of equipment to borrow from the Club's top grade collection.

Puzzle Corner.

1. WHEN THE END OF A FEEDER IS SHORT-CIRCUTED-

- a) all the incident power is dissipated by the short circuit.
- b) all the incident power is reflected by the short circuit
- c) all the generator power is dissipated by the short circuit.
- d) no power will leave the generator.

2. YOU WISH TO TRANSMIT ON 21.225MHz. YOU CAN MEASURE TO AN ACCURACY OF +/-1%. BETWEEN WHICH TWO LIMITS MIGHT YOUR TRANSMISSION FALL?.

- a) 21.01275 and 21.43725MHz.
- b) 21.20378 and 21.24623MHz.
- c) 21.00012 and 21.00437MHz.
- d) 21.00001 and 21.00043MHz. (ANSWERS ELSEWHERE)

The Editorial Staff would be glad to receive your written veivs on this N/L or any other topic of your choice. Even more glad to receive an article! Sharpen up your quills!!

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Consulting Editor

Ela G6HKM

Deadline for the next News Letter is 20th. July