CHELMSFORD AMATEUR RADIO SOCIETY

NEWSLETTER No.231

May 1985

NEXT MEETING - AN INTRODUCTION TO 23cm

At our next meeting, on Tuesday, 7 May 1985, John Lemay, G4ZTR, will be introducing us to the 23cm band (1296MHz). This will be of a general nature starting with a brief history of amateur operation on UHF / long microwaves, leading on to the type of equipment needed and the propagation characteristics of the band. As usual, the meeting will be held in the Marconi College, Arbour Lane, Chelmsford, commencing at 7:30pm.

DATES FOR YOUR DIARY

7 May. - 23cm operation - how to get on this band.
19 May. - Chelmsford/Colchester DF National Qualifier.
1/2 June. - RSGB HF National Field Day weekend.
4 June. - CARS Constructors' Competition.

COMMITTEE MEETING

The next Committee Meeting will be in the bar of the Marconi College at 7:30pm on Wednesday, 15 May, 1985.

RSGB HF NATIONAL FIELD DAY

As you read in the last issue of the Newsletter, this annual event will take place on the weekend of 1/2 June. A club station will be entering as usual, operating from the same site as last year: Howletts Hall Farm, near Blackmore, Grid Reference TL616018.

There will be an informal meeting for everyone interested on Wednesday evening, 8 May, at Dick Brocks' QTH (G3WHR - 30 Rowan Drive, Heybridge, Maldon - Tel.(0621)55707). This will be to organise details of who wants to do what. If you can't make it on Wednesday, then have a word with Dick at the Club meeting on Tuesday.

LAST MONTH'S MEETING - Andrew, G4KQE

Our guest speaker at the April meeting was Pat Bolton who works in the Vehicle Systems and Transients Department of the Ford Motor Company at Basildon checking and researching electro-magnetic compatibility (E.M.C.) of vehicle components.

Pat started the lecture by explaining that there are two main aspects to compatibility - E.M.I. (interference) and E.M.S. (susceptibility). Each of these two can be either conducted or radiated.

The basic car ignition system was explained, pointing out the main sources of interference: the spark itself, about 11kv with its sharp rise time of about 5ns; the spark plug and leads, which can be resonant at VHF frequencies; the distributor; the points, which should not arc, but which invariably do, causing pitting; and finally, the ignition coil.

To reduce this interference, resistive plug caps can be used and possibly a resistance of about 1k in the rotor, to lengthen the spark rise time. The position of components under the bonnet can have an effect: for example, don't put H.T. leads near the wiring harness or cables. Most H.T. leads also have a minimum bending radius, which should not be exceeded, or they will arc. An off-tune engine also tends to make more electrical noise.

There is a legal requirement to have a noise-free vehicle and the test is quite stringent before a manufacturer is allowed to sell a vehicle. The vehicle is stood on a concrete pad, clear of any surrounding objects, and a fixed distance from a receiving aerial. It is then "listened" to on several spot frequencies from 47.5MHz to 300MHz using a quasi peak measuring receiver. The noise produced must not exceed certain maximum permissible levels.

Turning to the susceptibility, Pat explained the tests that he and his colleagues carry out to ensure that a car's systems are not upset by transmitters, etc. Basically, the vehicle is placed in a chamber and R.F. is fired at it at varying levels and frequencies. A video camera records what happens. These tests are necessary to ensure, for example, that the central door locking system does not operate whilst using a portable hand transmitter, or that the engine control computer on some modern cars does not malfunction.

To check for conductive susceptibility, a signal is injected into the wiring loom and then they watch what happens. A wiring loom is needed in a vehicle but some looms are better than others. Pat observed that many Japanese cars have good wiring systems, with short runs mostly behind body panels, etc.

In conclusion, Pat briefly talked about mobile transmitter installations. He said that it is best to have a separate supply to the transmitter directly from the battery, to avoid transients on the supply. A short aerial lead is also an advantage. Some major users of Radio Telephones strap the engine to the chassis with earthing braids, and it can help to put an earth strap over the bonnet hinges or even between body panels, taking care to get a good low resistance connection.

During the tea break, many members chatted to Pat about the subject. A vote of thanks was called for by the Chairman for a most interesting and informative evening.

CONSTRUCTORS' COMPETITION
Keep those soldering irons hot! There is only a month to go. Final details will be in the next Newsletter.

DF NEWS - Dick, G3WHR
The RSGB National Qualifying Event, Chelmsford/Colchester, will take place on Sunday, 19 May, (O/S Map 168) starting from Tiptree Heath, NGR TL884148 at 1:20pm.

RSGB NATIONAL CONFERENCE and EXHIBITION - Ian, G4BYR
The trip to NEC was quite well attended, with 23 people in the end (after a couple of cancellations and a few people turning up on the morning "on spec"). We left almost on the dot of 8am, arriving at NEC at 10:15 after a fast and comfortable trip in a new coach from Boon's. As last year, we found to our surprise that we had a large 53 seater! - plenty of room for the various extra objects making the return journey, like microwave dishes (new high-speed woks?), and so on.

The exhibition seemed much better organised this year, especially in the catering areas. Was it my imagination, or did it seem less crowded than usual, in spite of there being more people there than ever before? I must admit that some of us sneaked out later in the afternoon to have a look at the Antiques Fair in an adjacent hall, too.

The return journey was similarly fast and comfortable, getting us back to Writtle by about 8pm, even allowing for a "refreshment" stop near Ampthill.

May I take this opportunity to thank all of you, including the group from Southend, for your company. The more people who take part, the cheaper it is for them. See you again at NEC next year!

"I REMEMBERED!!!" - Andrew, G4KQE
Yes, folks! After several weeks of meaning to, I have at long last remembered to tune in to 145.275MHz on Tuesday evenings (except club nights) at 7:15pm. I am delighted to report that every time I tune in, I have found the Club Net just starting. Several people regularly call in to chat about Club activities, and other items of interest. Why don't you join us? It's really easy to remember, 'coz Club's on a Tuesday and if it's not Club night, but it is a Tuesday, then it must be The Net. So if I remembered, please don't forget.

MISCELLANEOUS RAMBLINGS - G4KQE
Members may recall that a few months ago I placed a "Wanted" ad. in the Newsletter for a PYE PF1 Transmitter. For those who don't know, a PF1 is a hand-held, UHF FM transmitter measuring 6" x 2" x 1" approximately. A collapsible aerial springs out of the top when the PTT switch is pressed. They used to make regular appearances on TV in "Z Cars" and "Dixon of Dock Green". The transmitter is easily tuned to the amateur 70cm band. By today's standards, the circuit is somewhat basic: single channel, crystal controlled, and not an I.C. in sight! But owing to their simple layout and construction, they are ideal for working on and converting (unlike today's modern synthesised, multi-mode, micro-miniature transceivers).

I am very pleased to say that following my ad. a transmitter was located. A crystal was fitted and it tuned up on 70cm a treat. The only slight bother was with the aerial release mechanism, which required dismantling and bending slightly before it would work.

There is a 70cm repeater at Danbury on RB10 (434.85MHz receive and 433.25MHz transmit) and it seems to me that for just a FEW pounds, a PF1 transmitter and its brother, the PF1 receiver, are an ideal way to get started on 70cm.

QUIZ
Will the Quiz become another annual event? The Chelmsford/Colchester Radio Challenge is coming up again soon. The format will probably have a team of three representing each side, with a quiz-master, adjudicator and scorer taking care of the administration...

If you have any suitable (short) questions, jot them down on a piece of paper and give them to Brian, G6FLI, at a Club Meeting. Broad sections will be based on Technical Matters, Operating, History, and General Knowledge, all with a radio flavour.

Alternatively, if you feel that you would like to join the team to represent Chelmsford, let us know.

73 from your Secretary,
Ian, G4BYR.

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