

Chelmsford Amateur Radio Society.

NEWSLETTER No.302

Callsign G0MWT

March 1991

NEXT MEETING - Emergency Planning.

This will be one of the rare occasions that we do not meet at the Marconi College, instead we are invited to be the guests of The Essex County Council Emergency Planning Department for an explanation and overview of the facilities at County Hall.

The Planning team will be on hand to explain how the civil protection forces such as Police, Fire, Rescue, Ambulance, and not least the Amateur Raynet groups are coordinated in any County or National Emergency situation.

Directions to the venue are to proceed down Duke Street and take the right hand turn into car park at the beginning of the County Offices building. Brian G0BDS will be on duty in the car park to direct you to empty spaces and will monitor channel S22 on 2 metres with a hand-held for any queries.

The meeting will begin at 7.30pm and members are requested to be on time.

DATES FOR YOUR DIARY.

- 5 March CLUB MEETING - At the Emergency Planning Section, County Hall, Chelmsford.
- 9/10 March LONDON AMATEUR RADIO SHOW - Picketts Lock Centre, Edmonton.
- 24 March VHF CONVENTION - Sandown Exhibition Centre, Esher, Surrey.
- 2 April CLUB MEETING - The Radiocommunications Agency - by Mr J.C. Taylor.
- 27/28 April RSGB NATIONAL CONVENTION - NEC Birmingham.
- 7 May CLUB MEETING - Archaeology by Mr. Patrick Allen

REPORT OF LAST MONTHS MEETING - Richard G4ICP.

Due to unforeseen difficulties the planned talk on installation of mobile radio equipment by NAVICO did not take place. *(Regrettably we must comment that it is unlikely that this subject will be re-scheduled for a later date. Ed.)*

Instead we used the opportunity to have a general chat chaired by John, G8DET. An interesting range of topics were discussed.

Alan, G0LSH, explained to us about the 'International language' Esperanto. It is possible for anyone to undertake a free series of lessons to learn Esperanto and further details can be supplied direct from Alan, who is a fluent speaker of this language.

Esperanto was devised in 1887 and by following 16 simple rules of grammar, one can converse with another regardless of each others nationality. It is interesting to note that a number of international SW broadcasters include Esperanto in their schedules. In addition to this Alan told us of a Esperanto NET for radio amateurs and also of an recently held Esperanto Convention held here in the U.K.

Eric, G8ADX then talked about his recent ladder accident, with the object of conveying the very serious need to consider safety first in everything we do. He concluded by proposing that a future talk might be arranged concerning safety and first aid for radio amateurs and D.I.Y. enthusiasts. This idea was well received.

Then followed a discussion about frequency measurement regarding our licencing conditions. A proposal followed that a future meeting may include some practical advice for members and even a possibility of purchasing certain pieces of test equipment.

Finally, Roy, G3PMX put on his Auctioneers hat and then followed an exciting session of sale of components and very high class (no rubbish) electronic junk. The equipment fund benefited well from this sale and it won't be long now before the HF rig and PSU for the club will be purchased, hopefully in time for this year's HF Field Day.

Despite disappointment at the beginning of the evening, members went home relaxed having thoroughly enjoyed the informal yet informative evening.

COACH OUTING TO NEC 1991.

We now have 20 names for the coach party to the RSGB Exhibition at the NEC Birmingham on Saturday 27th April. We need 5 more to make it a going concern and even more to make it economical. Anyone is welcome, our starting point is the Writtle duck pond at 8.00am.

The cost of a 45 seater luxury coach is £250, so if we can fill 30+ seats the cost compares favourably with travelling by car also there are advantages in the social atmosphere of the day out and not having to face the long drive home after legging it round the exhibition hall. Enquiries and seat reservations to Ela G6HKM.

"SNOWMAN" DF - Andrew G4KQE.

A joint Chelmsford/Colchester two station DF competition was recently held on Sunday afternoon. In planning the event, Richard, G4ICP said that he always wanted to do a hidden station on the coast near Bradwell, flying his kite-aerial; I chose Mersea Island.

So the scene was set, G4KQE/P on a bearing of 153° on the north coast of Mersea Island and G4ICP/P on a bearing of 155° on the north coast of Bradwell. Hidden stations usually have plenty of cover to hide in, but this time of year with no leaves on the trees cover is very limited, and down on Mersea Island, even less on the open mud-flats. Luckily, there was one heap of scrub and a discarded oil drum - just right for hiding in.

At 1.20pm we gave the first transmissions, to be confirmed a few minutes later via the local repeater that two good signals were received at the start.

"SNOWMAN" DF (continued.)

Confusion reigned at the start, with the five competitors puzzling over the similar bearings and Richard appearing a stronger signal (with his kite) although further away! - but they didn't know that yet.

About 2.20 Phil appeared on Mersea closely followed by Mike, although Phil chose to examine the wrong end of my aerial, thus allowing Mike to find me first.

Meanwhile Richard was having fun at Bradwell. He was standing on the beach, but the tide was coming in, so he had to keep moving the equipment further up the beach.

At about 3.40 Richard spotted two competitors running along the footpath towards him - nothing like a good long run in on a DF to sort out the men from the boys - and at 3.45 Mike checked in as the winner.

Afterwards tea was served at QTH de G4KQE and G8WQZ, when many a tale of the afternoons event were related, not least by the two competitors who so nearly found me on Mersea, but were beaten by the clock.

The results are as follows:-

	Station A.	Station B.
Mike Hawkins	3.45	2.25
Phil Cunningham	3.48	2.29
Alan Williams	----	2.42
John Chandler)	----	----
Peter Graves)		

WHAT'S A COHERER? - Harry G5HF.

My suggestion last month that CARS members might like to make a working coherer to celebrate the Centenary of its invention has brought forth a comment that some people do not know what a coherer is. As I was brought up on coherers and thence to amateur radio, I overlooked the point that many members came into the theatre after the show had started.

A French physicist, Edouard Branly, was experimenting with metal powders and he found that they were poor conductors of electricity, unless a spark discharge occurred nearby, when their resistance dropped to a very low value. In 1891 he demonstrated to the French Academy that a small glass tube filled with iron filings and with a contact at each end of the tube would not conduct DC until an electric discharge took place a few yards away. Then the powder became a good conductor and acted like a switch actuated from a distance.

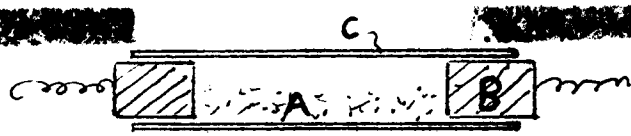
Once triggered by a spark the coherer continued to conduct until the powder was shaken up mechanically, so the next step was to add a small tapper (made from an electric bell) which was connected via a relay so that when a signal was received the tapper knocked the coherer and opened the circuit again.

The coherer is not a rectifier but it detects electromagnetic waves and effectively amplifies the signal by switching in the local battery supply. The physics of the coherer has never been worked out in full but it clearly operates by some surface film property of the metal powder. Iron powder works well when it is clean and new, but it rusts with time and its performance falls off. Nickel is much better, but silver was used by Marconi and others with great success. I find that silver is too good a conductor, even as a powder, but stainless steel filings (not available in 1891!) works fine and saves filing the family treasures.

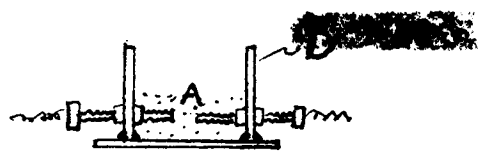
It is interesting that the idea of a coherer came to Branly while he was studying how human nerve cells carry messages to the brain and back. Nerve cells are not continuous fibres but strings of neurons massed together but not in contact.

The coherer was the only important detector of Herzian waves available until the development of the magnetic detector which Marconi patented in 1902 and based on an idea of Lord Rutherford. Marconi, Popov, Slaby and other early wireless experimenters all used the coherer in various forms and it was called the prima donna of high technology during the last decade of the nineteenth century when wireless telegraphy was being invented.

Sir Oliver Lodge is believed to be the originator of the word coherer, which was originally called the Branly Tube, because the spark made the powder particles cohere and conduct electricity.



Branley Coherer



G5HF Version

A=Metal filings. B=Metal plugs. C=Glass tube. D=Plastic tube.

COMMITTEE MEETING.

Due to the inclement weather the February meeting was cancelled, we hope that all committee members will be able to attend the next meeting in the Telford Lodge (Marconi College Residence) at 7:30pm on Wednesday, 13th March. You are most welcome to join us.

73 from Roy & Ela Martyr, G3PMX & G6HKM
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