



Chelmsford Amateur Radio Society

Affiliated to the RSGB
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Secretary: David Bradley M0BQC

Club Call Sign: G0MWT
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The June Meeting.

The Constructor's Competition. Tuesday 11th. June, 7-30pm, MASC.

It has to be said that amateur radio is now much less of a constructional hobby than it was in the past. We are now spoilt with a mass of ready made equipment with superb performance. It also has to be said that a comfortable bank balance is a distinct advantage! Even so, second hand equipment with a good technical specification, unheard of twenty or thirty years ago, is available at quite modest prices. It is, perhaps, worth reminding the newer Members to our hobby that home construction as a means to getting on the air was the rule rather than the exception in the past!

The Constructor's Competition is always a bit of an unknown quantity. Will there be enough entries to fill the evening? A few years back we thought it might die a natural death through lack of support. However, the Membership was given a real good talking to and since then it has gone on again from strength to strength! We hope this year will be no exception!

Following last year's procedure, Members will be the judges. Voting forms will be given out on arrival. Completed forms will be collected before the interval and the results assessed during the break. If you are entering the competition label your entry, provide a few notes and be prepared to say a few words about it.

At the last AGM Harry G5HF gave a short Presidential address and he spoke of the problems in retaining our allocated frequencies in the face of commercial interests. He suggested that we do something to justify our special status. Remember? He threw down a challenge to come up with an alternative power supply to take over when all else fails. It was decided to have a separate section in this Constructor's Competition. So who took it up? The raffle is run this month by David BQC and Harry 5HF.

Dates For Your Diary.

Tuesday June 11	CARS Meeting. Constructors Comp. MASC 7-30pm.
Sunday June 16	E S Wireless Revival Rally, Sidegate Avenue, Ipswich.
Wed'day June 20	CARS Committee Mtg. Danbury Village Hall 7-30pm.
Tuesday July 2	CARS Meeting. 'From Rig to Radiator' by Brian G3CVI. Avoiding the Pitfalls in Setting Up an HF Station.

Members News.

Welcome to two new Members, Mark Williamson from Ramsden Heath and Robert Hammond from Rawreth. Also, welcome aboard to Bob Tokley G4MDB, yet another father and daughter team! Bob, of course, is well known to the regulars on Tom's morning 21 Net.

Committee Members will always be pleased to introduce new Members to others with similar interests. They can be recognised by their badges worn at Club meetings and they are always ready to offer help or information to newcomers and to others, of course!

Amateur of the Year Award.

Members are reminded that this annual award to the Member who, in the opinion of the Membership, has made a significant contribution to the Clubs activities, is presented at the Annual General Meeting in October. Yes, it seems a long way off but tempus has a nasty habit of fugiting somewhat faster than we expect!

If you have someone in mind who you think would qualify please make your suggestion known to any Committee Member as soon as possible. The final selection is by ballot.

Last Month's Meeting. Radio at Sea and How It Developed by Donald Imber G0VIS

For about 100 years radio operators have been employed to provide communication to and from ships, using Morse Code. Operators are no longer needed and Donald let us hear a tape of the last CW transmission between Lands End Radio and Cullercoats. Marconi Marine was the main employer of radio operators in Britain and their house magazine was called "The Marconigraph" and in 1913 it became "Wireless World."

Marconi set up the Telegraph and Signal Company in 1897 and this became Marconi's Wireless and Telegraph Co or MWT which manufactured most of the equipment used on ships and Marconi Marine was set up to market the equipment. Marconi was selling equipment to ship owners around 1900, but they needed to get messages ashore, where the Post Office had a monopoly and this meant that no-one else could legally use Telegraphy in British Territorial Waters. So in 1901 Marconi Marine started hiring equipment and operators to the ship owners with no charge for the service. Marconi also started training operators in the necessary technical and international operating procedures.

Donald showed pictures of some of the early ships using W/T, including "Champagne" which in 1907 carried out receiving tests across the Atlantic to confirm Marconi's previous trans-Atlantic experiments. In 1902 the early equipment used "Plain Spark" which meant that the coil was connected directly to aerial and earth, all untuned. Gradually Marconi's 1900 Syntonic Patent was introduced using transformers and tuning and this resulted in the increase in range from a few tens to hundreds of miles.

Around 1905 spark transmitters were upgraded by using motor-alternators, driven from the ships' DC supply, and rotary spark gaps which consisted of spikes fitted to the alternator shaft. They were not popular with the ship's crew because they made a noise like a circular saw! The frequencies were 405 to 525 kHz and power was 11/2kW. The Titanic was fitted with this kind of set. Pictures show typical installations which included an emergency transmitter run from batteries. These had to be tested every day. Over the years transmitter design improved so that the spark was synchronised with the 300 cycle alternator.

Radio cabins were fitted wherever space could be found on board. They were usually high up and sometimes even put inside a funnel, which could be very hot in summer!

Aerials were usually inverted L or T and Post Office inspectors would test the equipment by noting aerial current. On large vessels the aerial was often around one quarter wavelength, so that the current at the station end was quite high.

Spark transmitters were still in use in the 1920s, although valve receivers were in use by this time. Marconi fitted up many of the Coastal Stations, but by 1909 the Post Office took them over and they built some of their own. Some of the familiar names are Niton, North Foreland, Cullercoats, Portpatrick, Wick, Humber and Stonehaven. HF was introduced in the 1920s and Portishead became the largest Marine Coastal station in the world. A typical Coastal Station, like Niton, used W5 sets giving 5kW on medium wave frequencies.

Every few years there were international conferences involving 50 to 80 nations to agree procedures for Distress calls, which were often relayed by Coastal Stations with a prefix DDD. In 1904 Marconi trained operators to use CQD to initiate distress calls, but in 1908 the SOS call was agreed internationally and it had to be transmitted without gaps between letters as a continuous code. Silent periods had to be observed on 500kHz at 15-18 minutes and 45-48 minutes past each hour GMT and all operators had to listen for Morse Distress signals at these times. Similar silent periods had to be observed on 2182kHz for telephony signals.

Marconi Marine introduced automatic keying equipment during the 1970s to send distress signals including the callsign of the station and 10 second dashes for DF use. There was also an autoalarm system which sent 12 4sec dashes with 1sec spaces and this activated automatic alarms on boats with off-duty operators.

Operators were always called "Sparks" and usually received 2 years training at private schools, Siemens, Kelvin Hughes or Marconi Marine. Donald got his certificate of competence in 1962 and he showed some typical ship installations using the Marconi Ocean Span equipment for MF and HF coverage.

Finally Donald explained an interesting procedure he developed for reducing the problem of signal fade. When receiving long messages or taking down information for the ship's newsletter, it was often interrupted by signal fade. To improve reception, Donald used two vertical aerials connected to different receivers and connected each receiver to a separate earpiece in the headphones. In this way he was able to improve reception on 8MHz so that he could receive almost 100%. A useful tip for DXers, if you can afford two receivers and aerials!

There was something for everyone in Donald's excellent, illustrated presentation; historical, technical, travel and personal reminiscences all intermingled. In spite of being called upon at short notice Donald said that he had only used about a third of his material. We shall be looking forward to a further talk in the future! Thank you Donald for an interesting and absorbing account of life in MIMCO.

Report by Harry G5HF.

Foundation News by Trevor M5AKA.

Since the last newsletter two Club Members, Clive M0SIX and Charlie 2E0PZT have offered to be lead instructors for new Foundation courses. Hopefully we will soon be in the situation where we have courses running in both Danbury and Chelmsford in addition to any courses that may be run for the Guides and Scouts.

The May Foundation course in Danbury is now well underway. It's run by Chris G0IPU and a team of dedicated helpers. There are about 9 club members involved with the course in various roles ranging from doing the tuition to providing on-air contacts and much needed cups of tea and coffee. Murray G6JYB has developed a set of Power Point presentation slides for the Club and a copy of them is available on the latest issue of the CARS CD-ROM.

On the first evening of the course Martyn G1EFL/M3VAM brought along an FT-817 and a Miracle Whip indoor antenna. He initially tried it on 21 MHz SSB and straight away got a contact with the island of Madeira, not bad going considering he was only running 5 watts output.

This station successfully demonstrated that you can still get plenty of good contacts even if you are using low power and a compact indoor antenna. Now realistically you are not going to work Australia or New Zealand with such a set up but you will be able to get plenty of contacts in Europe, Africa and North/South America. I've heard some people say that there's no point in them getting an H.F. rig as they have no space for antennas but the fact is that many amateurs do operate with indoor antennas and get excellent results from them. Although some people buy ready made antennas such as the Miracle Whip you can also make simple wire antennas yourself for just a couple of pounds. These can be fitted in the loft or around window frames. I even know of one amateur who made up a small indoor H.F. loop antenna which he suspended from a light fitting – it worked!! Antennas offer great scope for experimentation and needn't cost much. A number of antenna books with suitable designs are available from the RSGB, "Stealth Amateur Radio" being one of my favourites.

Good luck to all those candidates on the current course. The next course at Danbury will be starting on June 27th so there should be plenty of new M3 callsigns appearing on the air over the summer months.

International Marconi Day.

This year the IMD event on April 27th. was especially interesting because both the aerial systems had been modified. Up on the flat roof above the second station Tony G4YTG and his "gang" had erected the recently purchased three element Tribander beam mounted on a Black & Decker Workmate, complete with remotely controlled rotator. This yielded many DX contacts on 14 & 18 MHz due mainly to a magnificent effort by John M0CQK who did a marathon 10 hour, non stop,

operating stint. He came back later and did even more! In between times Charles G0GJS kept the bands alive and between them they netted 391 QSOs. Well done indeed!!!.



John M0CQK, Doing a Magnificent Job!

Tony YTG flew his kite but bad weather prevented it from being flown for very long.

Down at ground level I had moved the entire 80m half-wave nearer to the Engine House so as to bring the open wire feeder down at right angles to the top. The ensuing docile tune-up was very rewarding. At the same time I shortened the feeder to use a second "window" in the design which avoided some undesirable voltage maxima at the tuner terminals.

Conditions on the bands varied from superb to utterly useless. The higher frequencies such as 14 and 18 MHz were quite good but 80m became S9 + 20 of sheer noise soon after sunrise and remained so all day. Of course, 40m was its usual bedlam but many stations hung on in the pile-ups and were eventually rewarded for their patience. In all we worked 307 QSOs.

The log shows how long some of us were at the mike due to a shortage of operators. We really must try to persuade some more folk to join in the fun and act as loggers, for a while, and then take the mike. I have never liked "twisting" arms but maybe it's the only way unless we can find some other incentive for the next session in July when we put on a station for the Museum Open Day. Members also acted as hosts to explain what was going on to the visitors.

Just under 300 visitors attended during the day and although not present, because I was sleeping off my graveyard watch with Bob M0CSV, (if you gather my meaning) I learned there was much reminiscing and interest in the latest exhibits. It was a mini Marconi reunion! We also gained several new members for the Foundation Course.

One event at the Museum which proved popular with the younger visitors was the "mast building". This allowed visitors to see how high a mast they could build and discover why masts are built up from triangles rather than rectangles.

In a Porta-Kabin outside the Engine House Chris G0IPU ran the Morse assessment sessions. During the day 15 Full and Intermediate B holders took the assessment and can now operate on the HF bands. Chris G0IPU, a Cub-Scout leader, has been successfully teaching the Intermediate course to the Chelmsford Scouts for several years. In total 18 Scouts have sat the NRAE and are now licensed and 6 of them took the Morse assessment at Sandford Mill.

The Friends of Chelmsford Museums Members were on hand as well, hosting, selling their publications and promoting the Museum generally. Marie and Ralph G3NAA were, as always, doing a grand job providing light refreshments. Janet Lee was promoting and signing copies of the CBC publication 'Chelmsford - Birthplace of Radio'.

It only remains for me (CVI) to express on behalf of CARS our grateful thanks to all those who dislocated their normal domestic routines to make the event succeed. Now comes the QSL marathon....over to you Carl G3PEM and thank you in advance...Want any help???

Report mainly by Brian G3CVI with odd bits from Trevor M5AKA and Geoff G7KLV

The Dunstable Downs Rally.

It is frequently remarked that rallies are not what they used to be. They have become fewer and smaller. True! One rally which hardly seems to change at all is the Dunstable Downs Radio Club rally. This one is different. It is held entirely in the open in the spring. I've been going to it now for about ten years. The organisers seem to be in complete control of the weather, except for one year when it was just a trifle cool and breezy!

This year's event was a perfect spring day! It is really a huge, glorified boot sale. It's the sort of affair that the likes of W & S tend to give a miss. If you like rooting around for junk, you'll love DD! I've no idea how many stalls there were but what I do know is that it took Tom G4INM and me about four and a half hours to get round every stall with a short break for a stand up snack of chips and tasty burgers!

We met a few Club Members there and Dave G3PEN was amongst the stall holders. It was a cheap day out. Entry was £1 for four of us and I spent all of 40 pence on some ¼ inch jack leads. Included in the deal was an Allen key! All together an enjoyable and interesting day out!

Report by Geoff G7KLV.

CQ 2.4 GHz. by Trevor M5AKA

At a recent Club meeting Anthony M1FDE gave a demonstration of one of the latest military transceivers, the Marconi H4855 Personal Role Radio. He was involved with the design. This rig provides troops with short-range personal communications and uses spread spectrum in the 2.4 GHz Band.

It can also support wireless remote PTT operation using a 433 MHz link.

2.4 GHz and 433 MHz were of course once regarded as part of 'our' amateur allocations but at least it is better to be sharing frequencies with the military than with products designed for the home consumer market.



Anthony with the Marconi H4855.

Radio Amateurs are fortunate to have access to many hundreds of megahertz of valuable radio spectrum in the UHF and microwave bands but unfortunately we just don't make use of them. As the old saying goes, "use it or lose it". There's plenty of room up there for all modes from SSB/FM to high speed data and amateur television. With the use of amateur satellites such as AO-40 you can even have world-wide QSO's at UHF, so why not get active on 430 MHz and above this year?

Readers Small Ads.

Can any one help **'Big' Jim 2E1GUA**? He is wanting some mint plants, of the cooking variety! Donations gratefully received at the next Club meeting or ring him on 01245-356394.

Brian Andrews G4CTS is selling a Kenwood TS530S Transceiver, 1.8 to 30 MHz, 220W SSB, 180W CW. In good condition, hardly used. Price £150 complete with handbook. Interested? Then contact **Harry G5HF** on 01245-354118 who is selling it on Brian's behalf.

Trevor M5AKA is selling a Yaesu FT-100 HF/VHF/UHF Transceiver for £649 and a Kenwood THD7E VHF/UHF Handheld with built in packet for £199. Contact him on 0794 103 9832 or m5aka@amsat.org.

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Deadline for the July N/L is Wednesday 19th. June