

Chelmsford Amateur Radio Society.

NEWSLETTER No. 307

Callsign G0MWT

August 1991

NEXT MEETING - An evening of general discussion.

From the results of the survey carried out by John, our Chairman, it transpires that many members have subjects that they would like to discuss in open session.

Copies of the survey results will be available at the meeting but in the meantime to whet your appetite here are just a few of the subjects listed:-

- Recommendations for future use of the Equipment Fund.
- Requirements (Test Equipment) of Amateur Radio Licence.
- Conduct of Contest Operating.
- Magnetic Loop Aerials, Etc. Etc.

John will open the discussion at 7.30pm and we can be sure of a lively and informative evening at at The Marconi College, Arbour Lane, Chelmsford.

DATES FOR YOUR DIARY.

- 6 Aug. CLUB MEETING - General Discussion Evening.
- 18 Aug. RADIO GARDEN PARTY - with Pauline and John.
- 3 Sep. CLUB MEETING - Low Bit-Rate Television.
- 29 Sep. HARLOW AR & E RALLY - Harlow Sports Centre.

RADIO GARDEN PARTY IN DANBURY.

Weather providing, would you like to operate from the top of Danbury Hill on Sunday the 18th August 1991? If the weather is bad please do not come! If in doubt, please ring.

You are invited to bring your VHF/UHF rig and plug it into portable beams in the garden of Pauline and John Bowen from 2.30pm onwards. A talk-in station will operate on VHF FM. Ch.22 or nearby, QRM allowing. The QTH has a good VHF/UHF take-off towards the East, South and West but not so good to the North.

The Club HF rig will be connected to a temporary aerial slung between a couple of trees; this will be erected Sunday morning by the CARS Committee at about 11.30am.

Tea, Coffee, soft drinks and cakes will be provided during the afternoon. Since the lawns are soft and on a slope, flat shoes are advised to avoid twisting the ankle.

To enable the correct number to be catered for it is requested that those who would like to come put their names on the list at the August CARS meeting.

Wives, girl friends are welcome providing notified in advance. Alternatively they may like to walk on the nearby common or by the Lakes and return for another cup of tea etc.

COMMITTEE MEETING.

The August Committee will be held in the Telford Lodge (Marconi College Residence) at 7:30pm on Wednesday, 14th August, you are most welcome to join us.

DF NEWS - Dick G3WHR.

No Chelmsford local event in June, but plenty of action in the national Qualifying Events.

Torbay Event - 23rd June. This was a very wet afternoon, we were all soaked just taking the start bearings. Despite the rain, both stations were good signals - well done the operators. I arrived at the A station just after Bob Gray had found it, we all piled in the hole he came out of and soon located the tx. Back to the car, where we found Brian Bristow yelling for the rest of his team - they were lost in a nearby wood. Some good bearings on the B station took us to an old railway track alongside the River Avon - which was a raging torrent. Here we found a Paul Clark special aerial; unfortunately the weather had exposed the hidden Tee-in which we then followed. Only three teams located both transmitters.

RESULTS 1st Dick Brocks - Chelmsford
6th Andy Collett - Chelmsford - Qualified.

Banbury Event - 14th July. A split radiator hose nearly finished us before the start, we made it with two minutes to spare. One station was weak so we waited for the approximate bearing. Meanwhile, Andrew Mead and Philip Cunningham were investigating a possible site and found the operators car - complete with RAYNET stickers.

They soon found the owner hidden in a nearby hedge and were signed in at 1352, eight minutes before the scheduled second transmission! I wonder what the operator thought of that. We arrived at the station about 30 minutes later, then spent another 25 minutes looking in all the wrong places.

By the time we arrived at the B station the car park was full of DF cars and the route to the Tx was well trodden. We followed Derek Newman across a canal via an old railway bridge which included a 10ft vertical drop. He scrambled down and was immediately running along the tow path, we didn't catch up with him for several hundred metres and he was 10 seconds behind us at the transmitter.

There was a surprise for Derek at the Tea - a Birthday Cake from us all. It was his SEVENTY FIFTH Birthday.

RESULTS 1st Andrew Mead - Chelmsford - Qualified.
3rd Andy Collett.
13th Paul/Dick/Mike.

VISIT TO HARWICH HAVEN - Brian G3CVI.

From the moment the first party entered the building in Angel Gate it was plain we were to enjoy ourselves. Captain "Mike" Sherman instantly made us welcome suggesting the less athletic ones among us could use the lift instead of the several sets of stairs. We all arrived at the "Ops" room at the same time however, (a hidden message there somewhere!!)

A few minutes review of the chart table showed the seaward limit of the Harwich Haven Authority. The sailors present appreciating the outer edge at the "Shipwreck" shallows could see the well defined deep channel for the "big ones" which is dragged to a clearance of 11 metres minimum at M.L.W.S (Mean low water springs) and the recommended yachtsmans channel to the south commencing at the Cork light. Many searching questions were posed and Mike explained things in a professional yet easily comprehended way so that what was a flat sheet of paper began to live.

But a few steps away we saw the Marconi radar displays covering the entire area under the Harbourmaster's jurisdiction. These radars are all of the most modern raster display type with magnificently clear and clutter-free pictures, even the professionals were very impressed and gasps of appreciation were heard when the facility was demonstrated by the operator to bring up labels, course lines, ship headings, distance off etc., just at the touch of a pad; very reminiscent of the air traffic controllers' displays now in use at our major A.T.C. centres.

There were six ships under way within the area, four in the "offing" and two up stream, yet there was no hustle and bustle but an air of quiet efficiency pervaded such that, to the un-initiated, it might have seemed that nothing was happening, but they were all being plotted and capable of being called instantly on the radio systems.

The Pilot Launches are under direct control and besides the usual marine ship to shore R/T, there is also a special system of transponder tagging the launches from the control room. The returning signals, received by several antennae were processed and sent by land line to the . . . (continued)

plotting consol where the ident of the launch concerned was clearly labelled and displayed. The reason that Radar is supplemented for Pilot Launches is because the small craft is often in the shadow of the large vessel it is attending.

Another interesting item was the Racal multi-track tape recorder which, in constant operation preserves the entire gamut of incoming information, radar, radio communications, D.F., etc. The tapes are preserved for one month in case of navigation violation, otherwise they are recycled.

The throughput of vessels to the designated docking areas is now out of all proportion to that which existed years ago.

Mistley, Ipswich, Parkeston, Navy Yard and Felixstowe together are handling about 25,000 commercial movements per annum and they range from 50ft coasters to container ships in excess of 50,000 tonnes

One could go on describing the establishment but space does not permit so mention must now include the second part of our outing. Robin Looser of the Harwich Society met us along the sea wall and took us to view the treadmill crane. We were permitted inside the "cage" to see the remains of the wheel and mechanism which was not operated by convicts as was once supposed but by "Dockies" who must have been weighty chaps to have turned the monster contraption to raise large ships masts and spars in the Navy Yard during the 1600s.

Thence we were conducted to the Maritime Museum in the intriguing little low lighthouse at the seaward end of the promenade. On several levels there is a wealth of nautical memorabilia dating from the 1700s to the present day. Photographs, models, charts, instruments, equipment and displays in plenty, kept yours truly for one, totally absorbed since he is old enough to have been associated with some of the vessels depicted. The other folk expressed themselves completely satisfied by our visit and a sum of money was handed to Robin for the Harwich Society coffers in appreciation of its obvious dedication to recording and exhibiting the history of the town. Also some cash was dropped into the R.N.L.I. box at Angel Gate.

We had a most delightful day and we only met rain on our way home. A letter of thanks has been sent to the Harbourmaster and personal thanks have gone to the Society via your scribe whose brother-in-law was instrumental in making the arrangements.

Finally, some booklets are available describing the Harwich Haven and they are available for your perusal.

LAST MONTHS MEETING - Amateur Satellites - John 68DET.

Pat Gowen, 631OR had some trouble finding the Club QTH but was eventually talked-in by 68BDS, many thanks Brian.

The history of satellites started with the surprise launch by the Russians of Sputnik 1 in 1958, when everyone expected the Americans to be first in space but it was another 2 years before they put one up. In these early years it was often amateurs who logged the primitive radio bleeps from outer space; Kettering Boys Grammar School being one of the better known. A tongue-in-cheek letter to QST wondered whether if it would be possible if Amateurs could put a satellite in orbit for the benefit of all those around the world. NASA replied that providing certain conditions were forefilled the Amateur Satellite could occupy rocket space previously used as ballast; the Orbiting Satellite Carrying Amateur Radio (OSCAR) was born.

Very rapidly Amateur Satellite (AMSAT) Groups were formed in the more wealthy countries to construct satellites and co-ordinate the operation of ground control stations.

OSCAR 1, launched in 1961, was in a very low orbit and emitted "HI" in Morse Code. It taught us a lot about Doppler Shift and extended propagation through the ionosphere. Polarization changes were also observed.

OSCAR 2 - 5 were very experimental with poor results!

OSCAR 6 was the first really useful Satellite. It was a

transponder using 144MHz up and 28MHz down with a linear bandwidth of some 150KHz. This really got satellite operation off the ground particularly after the Class B operators were allowed to use it.

OSCAR 7 was an improved version of OSCAR 6 at about 900 miles and used Modes A & B. This was switched in Germany, Surrey University and in the USA. Mode B was again a linear transponder using the top end of 70cms for the up link and the top end of 2M band for the down link. Many millions of contacts must have been made with this Satellite. Circular polarization being used to lessen the effect of fading. Much of the equipment being developed by Dr.Karl Meinzer, DJ4ZC.

OSCAR 8 (RS1 & 2) the first of many Russian satellites with HF to VHF transponders.

OSCAR 9 (UoSAT-1) was Britain's first satellite focussing on cost-effective spacecraft engineering and space education, it was constructed by a team of research engineers at the University of Surrey. It was launched by NASA in October 1981 after 30 months of intensive design, construction and testing at a cost of £250,000. The project has enabled thousands of Amateurs; school, college and university groups in many countries to participate in receiving, decoding and analysing the house-keeping and experiment data transmitted by the spacecraft.

OSCAR 10 (Phase III) was mooted in 1975. The first model fell into the Atlantic due to a failed Ariane rocket. This Satellite eventually began operation in 1983 on an highly elliptical orbit which provides extended hours of access to specific areas of the world.

OSCAR 11 (UoSAT-2), launched March 1984, continues the very successful work of the University of Surrey.

OSCAR 12 (FO-12) the first all Japanese venture to provide mainly digital (packet) message forwarding on a circular orbit. It has some power management problems and goes off-air periodically to recharge the batteries!

OSCAR 13 the second phase III transponder on an elliptical orbit with the addition of an improved 1296MHz system.

AND SO ON through the series to OSCAR 22 who's imminent launch is for VITA to send vital medical information to famine relief agencies in 3rd world countries.

After listing the history, Pat played an excellent video tape prepared by German Radio Amateurs of the building and launch of OSCAR 10. This showed the satellite being tested and loaded into the Ariane along with ECS1 (made by British Aerospace and Marconi). This 198 tonne rocket used 1 tonne of fuel per sec at take-off!

Continuing after tea, Pat played and explained a number of audio recordings of Satellite QSOs.

The Russian RS10 transmits simultaneously on 2M and 29MHz, this gives a "stereo" effect.

Pat advised that there are many computer programs which give real-time predictions of orbit data so that maximum advantage can be obtained in communicating through "Birds".

Looking to the future, Pat felt that there was considerable pressure from industry for the spectrum at present allocated to Amateur Bands and that if not used they could well be lost. To use these frequencies 3 geostationary satellites would give world coverage - money is just not available to fund such scheme, however one at 39,000 miles which was near geostationary would be sufficient. The other idea could be to use the top end of one of the TV or communication satellites.

Watch out for Pat's articles in Practical Wireless.

Your Committee has tentatively booked Pat to come again next year to continue with Satellites and the Moon.

73 from Roy & Ela Martyr, 63PMX & 66HKM

Telephone, Home (0245) 360545

or Office (0245) 353221 Ex.3815

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

MEMBERS ADVERTISEMENTS

FOR SALE.

MICRONTA Power/Modulation/SWR Tester. £15 o.n.o. Eric, 68ADX, Tel:(0277)353127.
Three Meters:- 1. Power, 5-50-500 Watts. 2. Percent Modulation. 3. S.W.R.
Frequency Range:- a. Up to 30MHz (as designed). b. 2m & 70cm (sence head - home brew).