FIVE AND NINE PLUS

THE OFFICIAL NEWSLETTER OF THE APPLEDORE AND DISTRICT AMATEUR RADIO CLUB

Club Callsigns: G2FKO and GX2FKO
Web Site : www.adarc.co.uk

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May 2024

EDITORIAL

This month's meeting on **May 20th** is another **Natter Night**. A chance to catch up with everyone's news and perhaps swap ideas. Your Committee is working on a number of possibilities for future Meetings - details of which will appear in the 5&9 Newsletter.
Your Committee would be interested to hear views from members as to what format they would like to see for Club Meetings and any ideas for the future.

Terry (G4CHD)

CLUB MEETINGS

Meetings are held at the **Appledore Football Social Club** starting at 7.30pm for 8.00pm. Visitors always welcome. For further information, please contact the Secretary John (G3JKL) - see panel above for contact details.

Date	Topic
May 20th	Natter Night

LOCAL REPEATERS/GATEWAYS

GB3DN VHF FM/C4FM Repeater - Stibb Cross
Tone 77Hz (for analogue FM)
Repeater TX 145.6375 RX 145.0375
Keeper Tony G1BHM
Default Connection : Wires-X Southern Fusion
http://www.g0rql.co.uk/gb3dn.htm

GB3ND UHF DMR Repeater - Holsworthy Beacon
TX 439.7375 RX 430.7375 colour code 1
Slot 1 local RF Slot 2 SW Cluster
Keeper Tony G1BHM

GB7FB UHF DMR Repeater - Bideford
TX 439.475 RX 430.4750 Colour code 5
Slot 1 local RF Slot 2 SW Cluster
Keeper Drew M0MFS

GB3LZ VHF FM/C4FM Repeater - Winkleigh
Tone 77Hz (for analogue FM)
Repeater TX 145.6625 RX 145.0625
Connection : Wires-X Southern Fusion - fixed
Keeper Simon G4MQQ

GB7LZ UHF DMR Repeater - Winkleigh
TX 430.9125 RX 438.5125 Colour code 1
Slot 1 DMR Southern Fusion Slot 2 Local/FreeDMR
Keeper G4MQQ

MB6DT VHF Fusion Gateway
Frequency 144.8125 MHz.
Gateway Keeper Darren (2E0LVC)
Operational

GB3NX VHF FM AllStar Repeater- Holsworthy Beacon
Tone 77Hz
Repeater TX 145.5875 RX 144.9875
Connection SW AllStar Network (SWAN)
Keepr G1BHM
It is hoped to include more details of this Repeater in a future Newsletter.

GB3NX VHF FM AllStar Repeater- Holsworthy Beacon
Tone 77Hz
Repeater TX 145.5875 RX 144.9875
Connection SW AllStar Network (SWAN)
Keepr G1BHM
It is hoped to include more details of this Repeater in a future Newsletter.

LOCAL NETS

Weekday Zepp FM Net:	Mon/Tues/Thurs/Fri : 145.450MHz - 4pm - 5pm Wed via GB3DN - 4pm - 5pm Net Control : Len (M0SXY)
2m Elevenses FM Net:	Mon/Wed/Fri : 11 - 12.00 noon via GB3DN Net Control ; Mike (G3PGA)
Friday Night 2m Net:	Friday : 145.450 FM, 8 - 9pm
Sunday Top Band Net:	Sunday 1.860 MHz 9.30 - 10.15am (LSB - 32W pep max)
2m SSB Nets:	Wed: 8 - 9pm 144.260MHz USB SSB (Vertical polarised) Sun: approx 10.30am (follows Top Band Net) 144.260MHz USB SSB (Vertical polarised)
Sunday FM Net:	Sunday: 11 to noon via GB3DN Net Control : Chris (G0FJY)

Note :- FM Nets which use GB3DN as shown above will continue despite the recent changes. GB3DN is disconnected from the Wires-X/ Southern Fusion Room just before the listed start and end of each FM Net.

REPORT ON OUR APRIL MEETING

This was a Natter Night and a chance to catch up over a cuppa. It's was also an opportunity to get advice/help problems you might have as other members are always eager to help.

AN OVERVIEW OF DIGITAL RADIO

On the following couple of pages I have included a most interesting article written by Rob (G0HFN) which examines the background to the different digital radio standards that we have today in amateur radio. It's fascinating reading whatever your views are on this aspect of our hobby.

Enjoy the read Terry (G4CHD)

A personal view

The Great Digital Radio SwINDLE

DMR (Digital Mobile Radio) is a standard created by ETSI the *European Telecommunications Standards Institute.* The DMR standard is a benchmark for making low cost, easy to operate digital radios.

Radio Manufacturers formed the DMR Association. Interestingly, from an Amateur Radio point of view **members include Kenwood, Icom and Vertex Standard (aka Yaesu).**

The purpose of the association was to ensure that radios complied to the basic ETSI standard of interoperability while allowing manufacturers to make improvements to functionality between their own radios in a tiered manner above the basic DMR protocol.

Improving functionality has at times led to some interoperability issues but DMR radios are generally evolving in the same direction.

MARC

Another member of the DMR Association, Motorola, produced their own version of DMR they called Mototrbo.

Radio amateurs associated with the company naturally started to use Mototrbo radios on the amateur bands. Because DMR was not intended for amateur use and does not embed callsigns into transmissions concerns about its legality were raised in the US.

Eventually a workaround was found that was acceptable to the FCC who then included it in the list of permitted modes.

Over here in the free world where common sense prevails and everything is permitted unless deemed otherwise a more relaxed attitude existed. Ofcom and the RSGB had worked out that if manual identification had been good enough for CW, why not DMR?

Good old sensible British thinking. Meanwhile, Ofcom were about to make a mint issuing 'Simple Light' commercial DMR licences so the mode hadn't come a complete surprise to them.

More conFUSION

Yaesu had decided to invent a whole new proprietary **d**igital **m**obile **r**adio spec aimed purely at the amateur market. It would include embedded callsigns, something deemed very important across the pond and still used by the company as a selling in the US to this day.

They were to call it Yaesu System Fusion. Unusually it would include a networked walled garden that only their radios would have access to. This private radio network would be called Wires-X. Yaesu would then give away repeaters to organised groups in order to generate and for their radios.

Just like 'standard' DMR, Fusion radios would be easy to operate but more importantly, unlike DMR, they would be initially expensive. Yaesu hoped that by selling radios at a premium they would recover the cost of the repeaters that they had *so generously* given away.

A similar business model has served inkjet printer manufacturers well for decades.

D-Star

The Japanese government along with the Japanese Relay League had come up with D-Star as early as the late 90's. D-Star is mostly open source but uses an early version of the proprietary AMBE decoding chip that all digital modes use. Importantly for our American cousins, it would include embedded callsigns.

Three manufacturers adopted D-Star, Icom, Kenwood and Flex. While it does embed calls, the method of doing so is as *mad as a box of frogs* and use of an early AMBE chip meant audio is often not the best.

Even if you squint, neither D-Star nor Fusion would be acceptable in the commercial world or as some call it, the real world. But as luck would have it, the commercial world of Amateur Radio decided they were more than good enough for us. Who would have thought.. :-) ?

Muddle Town

If this sounds like an uncoordinated mess it's because it is and the big three, (YIK) are mostly to blame. Even though all the major manufacturers have a finger in the DMR standard for their commercial interests they have seen fit to foist upon us their own muddled thinking.

It's a definite, "We have designed this for you, you can't change it, but you will like it" attitude. They seem to think we are too stupid to grasp the intricacies of a radio system built for adults. Maybe that is true now?

Who knows what the future holds but the big three are definitely hedging their bets while our national organisations, keen not to lose their advertising revenues, remain silent.

Unfortunately, it is true that DMR radios do not embed callsigns into transmissions and programming complexity remains an issue.

For the purpose of self training?

DMR radio programming for commercial use is usually done by a radio specialist.

Wait… Are we not supposed to be radio specialists ourselves? Should we not be able to tick a few onscreen boxes in order to save money or have we become the captive appliance operators the Japanese manufacturers like to think we are?

Trying to put things right…

In spite of all this, digital radio at user level remains one of the greatest worldwide collaborative achievements in Amateur Radio.

Radio Amateurs, particularly in the UK, are constantly working out new and ingenious ways to overcome the limitations manufacturers have deliberately imposed upon us.

The development of MMDVM software by Jonathan Naylor G4KLX was a major step forward allowing digital radios of all modes to communicate with each other. The software is now in use all over the world.

The Future

There isn't much to separate the various digital modes. None sound as nice as FM. Yaesu System Fusion has the best audio by a smidgin and works pretty much out of the box. It will appeal to those that want a ready made solution regardless of cost and are happy to buy into Yaesu's walled garden.

As long as Icom continues to include D-Star in excellent radios like the IC705 it will have some kind of future. It certainly has its enthusiasts.

This leaves the old fashioned Radio Amateur, those with short arms and deep pockets, the ones that like to customise and tinker. They will probably choose DMR. They will scoot past the cheap Chinese offerings and for the price of a Baofeng buy a used commercial grade Motorola or Hytera radio and repurpose it. Greta would be proud.

73 de Rob GØHFN
North Devon Repeater Group