

JULY 2020

FROM THE EDITOR

Firstly many apologies to **Mike G4IZZ** for omitting to publish an article last month which he submitted in May about his contesting activities - read it in this month's issue.

Tom G3XMM's item in last month's "Ragchew" regarding QSL cards and shoe boxes prompted **Tony G4CMY** to retrieve some QSL cards from his collection which I'm sure will be of interest to members.

Tony G4HBV continues his analysis of the various parts of the amateur's transmitting station and this month explains the roles of the Standing Wave Ratio (SWR) bridge and Antenna Tuner Unit (ATU) and once again dispels some myths which surround these two pieces of kit.

In last month's editorial I made passing reference to my Raspberry Pi and the article by **Mike G6OTP** about the new **GARES Activity Sheet** has spurred me on to update members on the progress I've made. In my article in this issue "**Raspberry Pi-The Story So Far**" I've recorded the initial work undertaken to get it up and running. To those members who are familiar in their day-to-day work with computers, computer programming and installing software this may to be too basic, but as someone who last dabbled with this kind of thing with a Commodore 64, I had a lot of catching up to do!

Malcolm G6UGW continues his series reviewing the Radio Spectrum from 300Hz - 300GHz and this month he describes the High Frequency band 3MHz - 30MHz

Members will have read in the July Bulletin that it is highly unlikely we will be meeting at Churchdown School until 2021. Please keep the club spirit alive by joining in the various club nets, having a go in one of the many VHF and HF club based contests and finally please feel free to submit an article for publication in "Ragchew"

73 Brian G4CIB (g4cib@outlook.com)

August 2020 "Ragchew"

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Many thanks!

Tony G4HBV is taking a break from writing **RF Notes** and I am sure all "Ragchew" readers will join with me in thanking him for his articles which have enlightened and informed us over many issues.

Antenna experimentation and construction is a popular activity for many club members. My garage contains a variety of antennas acquired over many years. Some work well, others I have my doubts about. In the first of what I hope will become a regular feature, next month in "Antenna Teardown" I will take a close look at a range of VHF antennas from Jaybeam, a company well known to amateurs in the 1960s through to the 1980s.

Brian G4CIB

Contest Roundup by Brian G4CIB

We are maintaining **20**th **position** in the **UKAC Local Clubs** table, and it's interesting to note that in the points breakdown for the club, 432MHz is in the lead followed by 50MHz, with 144MHz hot on its heels and 70MHz not far behind.

In the **432MHz FMAC**, the club is in **4**th **position**, out of 19 entrants, but the gap between us and the current 3rd place occupier, Tall Trees Contest Group looks pretty insurmountable so hopefully with enough support from members, we can maintain our position in the table.

In the **144MHz FMAC** we are also now in **4**th **position** out of 26 entrants, with good scores being posted in April, May and June. Once again, with good support the club should be able to maintain or perhaps climb up another rung.

The **80m Club Championship** enters its final month in July with 3 contests left - **CW on 6**th **July**, **SSB on 15**th **July** and **Data on 23**rd **July**. Currently in **7**th **place** in the **Local Clubs table**, this is a good improvement over last years 11th place in the final results table.

Contests may not be everyone's interest but on the VHF bands in particular they provide a good opportunity to check antenna performance as there is usually plenty of activity. Give it a try and if you send an entry in, you will be contributing to the club's score. If you need any help on how to submit your score, any of the regular club contesters will be happy to help you.

RF Notes by Tony G4HBV

All comments refer to a typical system arranged in the following sequence: transceiver, SWR Bridge, ATU, feeder and doublet antenna,

I know I've said this before, but it's worth repeating: in this configuration the SWR Bridge **DOES NOT** read the SWR on the feeder and neither does the ATU have any effect on the SWR on the feeder. So what actually do these units do?

- 1. The SWR bridge measures the reflection coefficient of RF passing from the transceiver to the ATU.
- 2. The ATU allows a match to be made between the transceiver and the antenna system (i.e. antenna plus feeder).

The SWR on the feeder cannot be changed by any change at the transceiver end of the feeder. It is determined ONLY by conditions at the antenna end of the feeder. In any case the idea of a standing wave existing where the SWR meter is positioned is ridiculous; for an SWR to exist a standing wave must occupy either a length of feeder or antenna. It cannot exist solely at a point, such as where the SWR meter is sited in the system under review.

Having dispensed with the SWR meter, let us turn our attention to the ATU. A better name would be ASMU (antenna system matching unit). In terms of its function, the ATU can be considered to consist of three sections: an input section, a coupling section and an output section. All the sections interact to some extent, so adjustment of an ATU is an iterative procedure (middle for diddle as one deceased veteran of the club used to say). The input section is set to match the transceiver output impedance (that is an equal and opposite reactance) and then the coupling section is adjusted so as to maximise the transfer of power, all this being monitored on the "SWR meter".

The configuration of ATU's can be an L-network, a T-network of a Pi-network. In addition to matching, the ATU can provide extra harmonic suppression and the Pi-network is the best for this. I believe that auto ATU's generally use an L-network.

In receive mode, the ATU may cause some signal loss and in fact impedance-matched antennas may not be best in terms of signal to noise ratios.

A problem to look out for with ATU's is how the circuit deals with unused inductance – open windings may act as an auto transformer generating high RF voltages or shorted windings may generate high RF currents and therefore high losses.

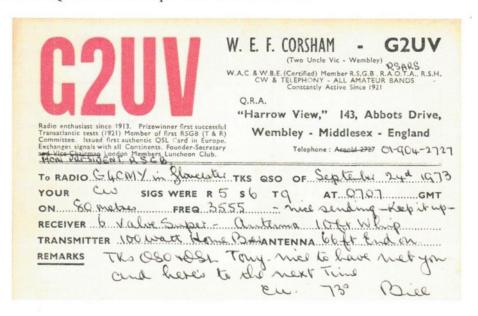
Finally, auto ATU's have one flaw: they are so efficient that when an antenna has a fault, unknown to the operator, it will still achieve a good match into a poor antenna. This would be immediately obvious to an operator manually tuning an ATU as the usual settings would not be effective. Such an example of this happened to Brian, G4CIB, but let him explain.

As Tony has just stated - auto ATU's can mislead you. Earlier this year I decided to have a go in one of the evening 80m Club Championship contests, in this case on SSB. I usually enter the 10 watt section as I have an IC703 (a 10 watt rig) which has an internal auto ATU. A short length of coax cable from the rig connects to a balun on the shack window ledge which then feeds some home-made open wire feeder to a 100 foot top doublet. When the contest started I picked a very strong signal calling CQ and called him. He didn't come back to me, but neither did anyone else call him and he started calling CQ again. That should have alerted me that there was a problem. Eventually I worked him and the same occurred with the next station. At this point I realised something was amiss. I leant out of the window and with a torch (it was a dark winter night) spotted a break in one side of the open wire feeder. The auto ATU had happily matched the antenna/feeder combination to the rig, but obviously the antenna was not a very efficient one. A quick splice to re-connect the feeder and I was away - but sadly lost a good 30 minutes or more of the 2½ hour long contest

Some Interesting QSL cards - submitted by Tony G4CMY

Following Tom's article about the QSL card from W3EDP, I've picked out a few from my collection that might be of interest

I can't manage G5RV using a G5RV antenna but I have got a QSL from the man who sent the first QSL card in Europe - Bill Corsham G2UV



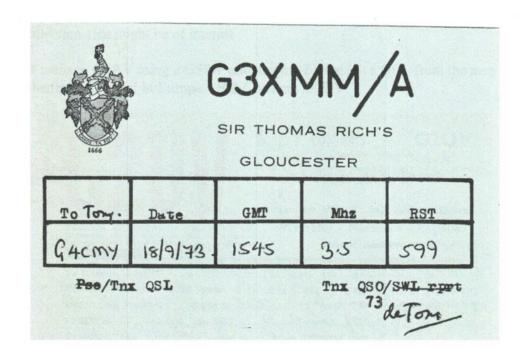
I worked him on 80m CW a week after getting my licence. As an impressionable school boy it was amazing to get a comment like "nice sending - keep it up" from a man who in my eyes was on a par with the Gods!

This next one is from F G Rayer of Practical Wireless fame and many other publications.

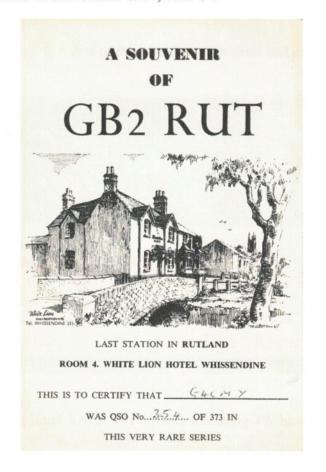


I worked him on Top Band AM in July 1974, I was using 7W he was using 8W

The next one has special significance for me because this was my first QSO on the day I received my licence. Not exactly DX - about half a mile on 80m but it was good enough for me. Significant, also, because Tom is very much responsible for giving me endless help and encouragement in pursuing this amazing hobby of ours.



This final one has more of a general historical interest - The County of Rutland was about to disappear, being absorbed into Leicestershire. This was the last station to operate from Rutland and. looking at the QSO number, I was very nearly the last station they contacted on 31st March 1974, 80m CW



Raspberry Pi – The Story So Far – Part 1 by Brian G4CIB

The article in last month's "Ragchew" by **Mike G6OTP** introducing the GARES Activity Sheet, has prompted me to put pen-to-paper (*Surely it's fingers to keyboard? Ed*). One of the activities listed was the Raspberry Pi and having purchased a model 3B+ a year or so ago and never quite having got round to doing anything with it, the recent lock-down removed my "lack-of-time" excuse. The first hurdle was to gather information and luckily the RSGB has recently published "**Raspberry Pi Explained for Radio Amateurs**" by **Mike Richards G4WNC** (referred to as "the book" from now on). The next task was to gather together the necessary items required to get it up and running. **STOP!** Some of your readers may not know what a Raspberry Pi is! The blurb in the book states that it is a series of low-cost single-board computers developed to promote teaching of basic computer science in schools. So that sounds about my level!. Where were we? Gathering together the necessary hardware. I already had a monitor, keyboard and mouse that could be used, and via eBay purchased a psu, a 16GB microSD card and a USB microSD card reader.

The book told me to install the operating system on to the microSD card. The Pi runs on Rasbian which is based on the Linux operating system. No Microsoft Windows here! Be careful, don't be too rude about Microsoft because in the next step I needed an internet connected computer – which in my case is a laptop running Widows. **Mike G4IZZ** I know runs an Apple Mac – another avenue which has remained unexplored by me! (*Have you noticed that when you get involved with computer projects, you can be easily side-tracked? Ed*)

The next step was to download (on my Widows based laptop) some software which would enable the Raspberry Pi operating system to be transferred to the microSD card and create a bootable system disk. This goes under the name of Balena-Etcher. No problems were encountered here. Now I had to download the latest Raspbian image from the Raspberry Pi web site. Again, no problems were encountered. The next task involved flashing the Raspberry Pi image to the microSD card using the Balena-Etcher software. Here I hit a problem. It just would not work. Oh the joy – all this wonderful lock-down time and I was going round in ever-decreasing circles getting nowhere. One thing I have learnt from the hobby is that any work of a practical nature, be it construction, fault-finding, repairing equipment or grappling with computer software, if carried out after midnight, it will be doomed to failure. Time to call it a day!

It's amazing what a good night's sleep can do when it comes to restoring brain-cells (*Eh? Ed*). Coming back to the previous day's brick wall, I posted a plea on the **GARES Facebook** page for help from any experts in the club. Several members came forward and **Barry M0HFY** suggested that he had sometimes encountered problems with SD cards, even new ones. That was easily tested as I had a small box with a few previously used SD cards removed from pocket digital cameras, no longer used as I mostly use my mini iPad for photos. Bingo! The substitute SD card worked.

Guided by the book chapter "Installing Popular Radio Applications", I decided to try the first one described by the author, which was installing FLDIGI. Having recently entered my first Digital Mode contest in the 80m Club Championship, here was an application that could be useful. Downloading this software and installing it was relatively pain-free and I even spotted and corrected a typo error in the book on one of the command lines which was preventing it from running. But suddenly I asked myself – is FLDIGI the route I want to take? Should I be re-thinking my strategy regarding how would I put my Raspberry Pi to work for me?

Once again a good night's sleep enabled me to think the problem through a bit more clearly. Up to now all my computer-based amateur radio activities such as logging day-to-day contacts, contest logging and internet related stuff had involved my connecting up my laptop and at the end of the session unplugging it as I use it for many other non-shack based activities. Could the Raspberry Pi be the basis of a fixed set-up in my shack? Time to investigate other applications – and these were not in the book!

(to be continued)

More Contesting!!

If you're a newer club member, or not, and have never entered a contest, do consider it. It really is good fun, whether you have a serious 'go' over a few hours, or simply dip your toes in the water for 10 minutes. If the editor will forgive that well known split infinitive, you simply have to "boldly go" into the contesting environment.

This time I'd like to tell you about four fairly recent H.F. CW contests (March and April) which I entered (nay, dabbled in), the first of which was run by the RSGB, and the other three were/are sponsored by other countries' amateur radio authorities. The first one was: 'The Commonwealth Contest'; the next was the 'Russian DX'; after that came the 'SP DX (Polish)', and the last one was the 'CQMM DX (Brazilian)'. I'd heard of the first three but not the Brazilian contest, and I had only ever entered the Commonwealth Contest a couple of times before, (but many years ago). My renewed interest was partly because of the COVID-19 lockdown, (for the more recent ones), but mainly just to enjoy a bit of contesting in a 'bigger arena'. Overall, participating in the four contests, I spent a few hours in the chair, though I did flip back and forth to the living room when my wife shouted "come and watch this" during a couple of TV programmes we like.

So, a few words just to give you a 'flavour' of them. Firstly, The Commonwealth Contest, formerly known as the 'British Empire Radio Union – BERU', took place on the 14th March, and is one of the longest-running contests in the world of H.F. I'm sure several of our longer standing members would have participated in it at some time or other. Around 271 amateurs around the Commonwealth took part, selecting to operate in either the 12-hour section, or the 24-hour one. This is a good event in which to work some of the 'rarer' DX callsigns that enjoy Commonwealth status as, being somewhat rare, they enter the contest knowing they'll be sought after by other participants. For example, I had QSOs with stations in Australia, Belize, Cayman Islands, Ghana, India, Jamaica, Zambia and New Zealand without much difficulty, and I worked a total of 60 stations. Both I and fellow club member, Martin (G4ENZ) entered, both in the 12-hour section.

Secondly, the Russian contest took place over the weekend of 21/22nd March, and consisted of several categories such as Single Band, All Band, with a choice of using CW and/or SSB. The QSO exchanges in this are the usual 'RST and Serial Nr' for non-Russians, and 'RST and Russian 'Oblast' (region)' for the Russian participants. I, of course, didn't sit there for 24 hours solid but popped into the shack now-and-again, and ended up with 80 QSOs. To put that into perspective, the current 'leader' in my category had 1,965 QSOs. (I'm keen, but not that keen!!)

Thirdly, the Polish 'SP DX', and this was held on 4/5th April with Polish entrants sending their province (voivodeship) letter after the RST. Again, a choice of bands, mode etc to choose from, and around 65 UK stations submitted logs contributing to a 'world' total of approx' 3,500 entrants. Both the editor of this newsletter, Brian (G4CIB) and I entered. This time, I managed to work 190 stations.

And Lastly, the CQMM. I wasn't at all familiar with it, but in for a penny..etc. This one is sponsored by Brazil, and was held over the weekend of 18/19th April. The CQMM web site revealed the fact that this contest was 'opened to the world' in 2011. Its full title is 'CQ Manchester Mineira DX Contest', and like the others, is an annual occurance. I saved my most productive performance 'till last, and submitted a log for 290 contacts. This contest appealed to some rarer stations (rare to me, at least) and I worked a couple of Japanese

stations, and JT1BV in Mongolia. To date, 1,243 entries have been submitted to the organisers.

In all of these contests, inaccuracies are penalized – and it's a rare log indeed when there are absolutely no errors. Typically, incorrect logging of a callsign, exchanged serial numbers or the QSO not appearing in the 'other' stations log results in points being deducted. So now it's back to the 'home' contesting family of RSGB H.F. and VHF contests. Not quite so exotic, but again, good fun and interesting. More so because any scores submitted for these go towards the Club's ladder points, and that has to be a good reason to take part.

If anyone is interested in contesting, and is new to it, there's plenty of expertise in GARES who'd be only to willing to help you get going.

Mike (Eggleton) G4IZZ

The Radio Spectrum by Malcolm G6UGW Part 5 - High Frequency 3MHz - 30MHz

These frequencies correspond to wavelengths between 100m and 10m. Used mainly for "short wave" civil radio communication over long ranges as the signals can travel by both a ground wave and sky wave, the latter bouncing between the earth and the ionosphere.

This part of the spectrum is affected by the 11 year Sunspot or Solar Cycle. At the moment we are in Solar cycle 25, that is the 25th solar cycle since 1755, when extensive recording of solar sunspot activity began. Its most likely start date is December 2019, but as this is based on a 13-month running mean of sunspot numbers, this cannot be certified until late 2020. It is expected to continue until 2030.

(Series to be continued)



I've been asked by Tim G8PZD to publicize the Monday morning coffee gatherings at "The Aviator" pub at Staverton Airport (or Gloucestershire Airport in new money).

These meetings are I understand very informal and take place from 9.45am. Take your own flasks and butties but remember no facilities there at present - although this of course may change soon.

No need to book - just turn up!

Photo left: Tim G8PZD obviously enjoying the gathering!

From the Archives - RSGB Bulletin - July 1950

The July 1950 edition of the "RSGB Bulletin" marked its Silver Jubilee and the cover is reproduced below, along with a few pages of adverts. Only 5 years after the end of WW2 and there is still plenty of war surplus goodies for sale. The magazine also contains a brief report on National Field Day held on the weekend of 3rd-4th June which was "blessed with glorious weather and activity at an all-time record, portable operating raised to the level of a fine art and high scoring on the lower frequencies". Although the results were not announced until the publication of the September issue, three clubs, the "Three C's" as they were referred to - Cambridge, Cheltenham and Coventry were tipped to be high up in the list. In fact Cheltenham took top honours, the "A" station G3LP/P and the "B" station G5BM/P. Gloucester were well down the list in 49th position out of 111 entries, the A station G3MA/P, the "B" station G2RT/P



On the back cover of the July 1950 "Bull" - an advert for the new Eddystone 750 receiver. Note the manufacturer's name - Stratton and Co Ltd. Yes - the same company that made costume jewellery, powder compacts, cuff-links and tie pins. Some years ago **Les GOULH** gave an interesting talk at club on how the company diversified into radio during the mid 1920s to offset declining sales in, of all things, hair pins from 6 tons a year to one ton due to the new "pageboy" haircut popularised by "Jazz Baby" Coleen Moore in the film "Flaming Youth.

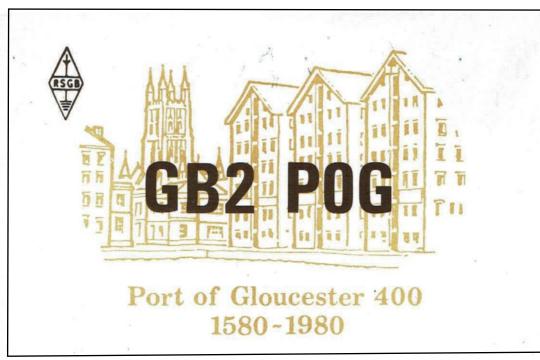
In 1950 an average house cost in the region of £2000 - the Eddystone 750 as near as darn it £50 - a ratio of 40:1. Today the average house price is in the region of £230,000. At 40:1 that makes an Eddystone come out at £5750. Phew! Another way of looking at it - the average weekly wage in 1950 was about £7 per week, so just over 7 weeks wages to buy one. Average wage now is in the region of £550 per week - 7 weeks wages gives £3850. In real terms this was a very expensive piece of kit!

A typical advert from the "Bull" - HRO receivers in plentiful supply, although only one available from this supplier complete with 9 coils (bandspread on 10, 20, 40 and 80 metres).





QSL CARDS FROM THE ARCHIVES



Anniversary granting of a Royal Charter by Queen Elizabeth in 1580 which enabled the city to trade as a port. We were give a new shed to operate from. Sadly we were not allowed to keep

On the weekend of June 20th-22nd 1980, the club set up GB2POG

Docks

of

the

to 400th

the

Gloucester

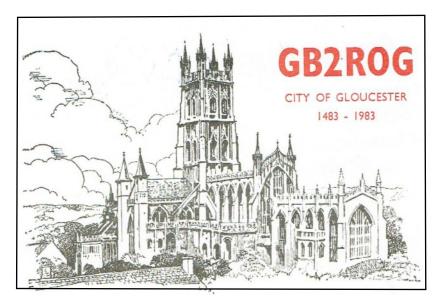
celebrate

Note the QSL card design is very similar to our current club logo.

Club members who take part in the UKAC contests always like to get GD8EXI in the log as the QSO is worth quite a few points.

Here is a QSL card when I worked Richard in 1973. I've checked back through my log books and I was G8CIB/P operating at Roel Gate near Winchcombe in a 2m contest. I was assisted by Arthur G8BRN who supplied all the kit - an RA17 receiver plus 2m nuvistor converter and a home brew transmitter running 120 watts of FM from QQV06-40 amplifier (which I still have). The antenna was a 10 wavelength rhombic and in 24 hours we clocked up 158 gsos

14KWJ DOUGLAS GD8EXI/P RICHARD BAKER BALLANARRAN SURBY NR. PORT ERIN ISLE OF MAN To Radio GSCIB/P CONFIRMING OUR 144-20 M Hz Place QSO OF 8/7/73 AT 6231 INPUT ____ WATTS YOUR SIGS R S T . 5:5 0 49 MODE A3 QRA X067E 1200 th ASL
TX Homebren RX FT101+con ANT Hell 2016 PSE / TOX QSL DIRECT / VIA BUREAU 73's Richard



In September 1983 the club set up a Special Event Station in the Guildhall in Eastgate Street with the call sign GB2ROG. This was to celebrate the 500th Anniversary of the Charter of Incorporation granted by Richard III, once Duke of Gloucester on 2nd September 1483.

I recall we all had an enjoyable time especially when the Mayor, Cllr Peter Arnold entertained members in the Mayor's Parlour with copious amounts of sherry.

More legendary stories about working at GKA (Portishead Radio) - Part 3 Submitted by Andrew G4IVD

There was also a notice advertising club 18-30 holidays (yes there were some young R/Os there!). Unfortunately one well-travelled R/O added the phrase 'much cheap jiggy jiggy' to the notice...

One new (non-sea-going) R/O had just completed his R/T training, and had just been called by the QE2/GBTT. Upon asking the vessel's position, the QE2 replied 'just off Newfoundland'. A long silence from Portishead was only ended when the R/O on the QE2 broke in 'you don't know where that is, do you?' – one red-faced young R/O took a lot of stick for weeks afterwards....

One enterprising R/O purchased a book from the visiting book salesman with the intention of presenting it as a retirement present to one particular overseer famous for his spelling mistakes - the title of the book? 'My 500 first words'...

Iriships in Dublin once sent a telegram to all of their vessels stating that crew would from now on be paid every two weeks instead of fortnightly.

Texaco in London sent a telegram to all of their vessels requesting that due to the increasing cost of telegrams, masters should refrain from ending them with the word 'Regards'. The telegram was signed 'Regards Texaco'.

One overseer (who shall remain nameless, but has been featured elsewhere) had the habit of disappearing on nights at around 0100 to fit in a few hours' sleep. For obvious reasons, the R/O staff took exception to this. On one memorable occasion, one R/O was instructed to 'keep watch' and alert the rest of the staff when the overseer woke from his slumbers. When the alert was given at around 0600, the whole staff disappeared out of the building, leaving the overseer searching for around 20 absent R/Os

One R/O on a particularly busy and stressful morning, once answered the telephone with the immortal line "Good Morning, Portishead Radio, How can you help me?"

That concludes the selection provided by **Andrew G4IVD** - many thanks!

If I may, I'd like to add a few gems. In the early 1980s I used to visit Ireland (both North and South) on business. Leta and I decided to have a touring holiday starting in Dublin, where I went to the famous GPO building in O'Connell Street where a man on an old upright typewriter typed out my visitor licence **EI2VJW** enabling me to operate on 2m during our stay - this was before the days of CEPT reciprocal licensing. I had the car nearby at an ICP (Irish Car Parks) site. As we drove in I enquired of the man in the hut "Do I pay on exit?" "No surr" was the reply "You pay on the way out..."

Overheard at a GARES Special Event Station from a member operating the club rig and not wishing to cause any interference:-

"Is my frequency in use please?"

Final Note

Many members are now joining in the various nets organised by the club. Please do support these as a way of keeping in touch. There is a lot of experience in the club covering all facets of the hobby and help is just a call away!