

THE BRISTOL 70cms REPEATER GROUP

GB3BS NEWSLETTER 2013

RU68 - 430.850MHz - TONE J: 118.8Hz

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Welcome to the 2013 Bristol 70cms Repeater Group Newsletter. It's been a year already? Man, I cannot keep up with time any more, it seemed only last week I was sat here bashing out the welcome page for 2012's newsletter.

So what's been happening? Well we as a repeater group have had quite a mixed year really, lots of presentations to our local, and not so local radio clubs that fall into the capture area of GB3BS.

All the clubs that had us along made us very welcome and it was a pleasure to give a talk on repeaters in general and GB3BS specifically. A big thank-you to all clubs involved!

In January the Bristol 70cms Repeater Group was presented with the "G8HPC" Chairman's trophy from North Bristol Amateur Radio Club for our on going support of NBARC. A big thank you must go to Paul (G8YMM) and NBARC for the award (do we get it engraved?).

Mark will bring everyone up to speed on the technical events for the year in his technical report further on in this newsletter.

But to summarise, we had to carry out a firmware uplift back in April to fix a long standing bug that we reported back to the manufacture a while ago. Adjustments unfortunately also had to be made to the repeater making "Repeater Blippers" work harder for their pleasure. This had to be balanced with "Genuine" users of the repeater and the time it takes them to establish access to the repeater, something I personally feel has been achieved.

We have also had a spate of technical failures of the repeater over August/September this year, needing urgent attention, as I have already said; Mark will give the full report on this later.

We have had a couple of incidents of accidental keying out of the repeater; the first was a mobile station we think had hit his PTT switch. While this was being traced, the user received a telephone call to inform him of the problem. Another was a PTT switch accidentally knocked on. DF and RFID processes identified the station quickly and while on route to the station address a telephone call was heard that confirmed the address. While these incidents are annoying, remember **THEY ARE MOSTLY ACCIDENTAL!** and do not warrant an on air judgment of the person who is, or perceived to be, responsible. Would time not be better spent lifting the phone and calling the fellow amateur believed to be responsible and just letting them know of your suspicions. Also try to remember, radio equipment should not be left un-attended.

Finally, it has been raised by a couple of regular users, members and non members alike, that they and others struggle to break into QSO's already taking place on the repeater and that the repeater pip gaps are too far apart. Rightly or wrongly, I used to point out that the repeater pips are as per the MK II repeater that used to be at Cossham Hospital and had been in operation since the early 80's. 1 second to the first pip after input clears; the first pip resets the timeout timer then 5 seconds to the second pip and then 5 more seconds to the repeater close down. This sequence worked well, and separated the operating characteristics of BS from other repeaters in the area.

Cont....

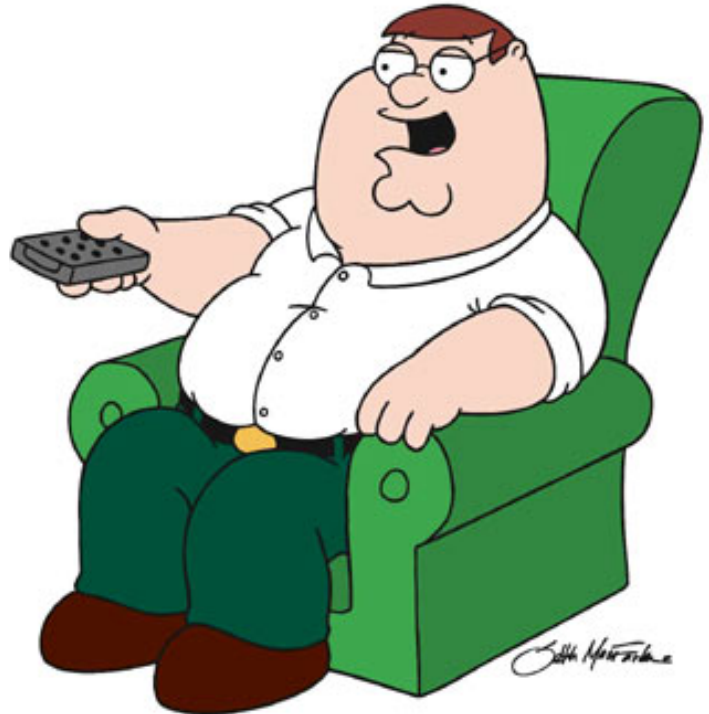
However, since the new logic has been installed (MK III – 2008). The trusted “Squelch Tail” has gone, that and the slight changes to operating styles (over the years) have left some wondering when a station finishes an over. Combined with trigger happy operators that can second guess the pip and are ready to transmit once they hear it (I class myself in this group, and stand guilty of it). It does sometimes make it hard for operators not used to the new logic to break in to a QSO. Again, Mark covers this in his section of the news letter.

CHAIRMANS REPORT

As I mentioned in the welcome page, 2013 has been a mixed year for the repeater. It is always nice to hear people using the repeater, and indeed I try to get on air as much as possible.

The average 24hr usage of the repeater, less blips and beacons, averages about 4.25 hrs which although seems low, it is fairly high compared to some other local repeaters. That is down to operators picking up the microphone and using the box.

It's nice to hear some of the newly licensed operators coming on air and “having a go”. I am not aware of any incidents on air of any abuse aimed at the newbie's. In fact the new stations I have heard are welcomed into a QSO, unlike some of the comments I have read in Radcom where M3 and M6 stations get a rough time.



On a sad note, I am sure many readers of this newsletter would have heard by now the news of Len Baker (G4RZY) passing. Both Len and Muriel have been long time members of the repeater group and although in later life Len did not come on GB3BS quite so much, it was always a pleasure to work him when he did. Our thought's and sympathy go to Muriel and their family. '73 Len QRT (SK).

Technical Report

News in Brief.

The first part of 2013 was a fairly quiet one and the repeater ticked away without any issues. Activity as a whole has increased steadily with more stations from further a field using the repeater which is nice to hear.

A new Tower Obstruction light has finally been installed along with a small amount of site work carried out by the site owner.

Throughout the past year we also had a few firmware upgrades to the repeater controller and some minor configuration changes. Receiver (1) was restored to service and a DC power problem was finally resolved.

Late this year some changes to the well known “pips” on the repeater were talked about by some of the users of the repeater. A discussion was subsequently opened up via an email to all members and through our Web site and Facebook pages asking for comment.

Membership of the repeater group has seen a steady increase on last year, albeit a slow one. The good news it that we are now at last holding our own.

Tower Light Failure, a follow up.

Members may remember that we reported on the problems we were having with the Tower Warning Light and ultimately, its total failure back in July last year. It appears that the old light housing succumbed to water ingress and with it corroded the circuitry.



Above: The old Neon Lamp. Picture taken in 2010.



I can now report that back in January this year a brand new LED type Tower Warning Light was installed on the tower and is working well. Hopefully being a LED type it should last a good few years.

Left: New LED type lamp fitted January 2013.

Site Work.

While the new tower light was being installed work was being carried out by the site owner's contractors to give the tower itself a full structural inspection, which I am pleased to say it passed without any issues. The tower also had all redundant feeders and associated steelwork removed, so the tower and site is less cluttered. Also our co-sited third party user had one of their large redundant dishes removed from the tower.

Less interestingly, we carried out some basic site tidying of our own. This comprised of clearing some overhanging tree branches, unblocking the roof drains and soak aways.

The site generator has been given a quick check over and the starter batteries with its float charger were also checked. The generator is usually given a run and a load test once a month for about an hour. We simulate a full mains supply failure so that we are sure that there are no problems with the auto start system. We must get round to trying a manual start one day!



The 3kW Standby Generator.

We have also made a start on clearing out the rubbish and preparing the Generator room ready for a repaint of the walls and ceiling. This has been a bit of a slow job and we had hoped that it would have been completed by the end of 2013 but due to other activities we both had we could not put the final bit of time in that it needs. We do not intend to do any more work on the generator room until the warmer weather of 2014 arrives, (we hope).



The newly certificated fuse boards.

Late this year we had a site electrical safety inspection. This is the first one we have had since occupying the site. We are not sure what instigated this or how often it will be repeated, perhaps it's because the site was rewired and upgraded by us that they actually felt safe to inspect it now! Anyway, the site was given the all clear and has been certificated, which is reassuring that the work and materials the group invested in meets the current regulations. (Did you have doubts? – ED)

Odds and Ends.

[Receiver] At the start of July our main receiver (RX1) was returned to service. RX1 was originally removed so that we could check that some of the manufactures recommended performance modifications had been installed. Fortunately they had, so following a quick performance and level check over it is now back where it should be.



RX1 having a check over.

[Access Timer] A small change was made to the configuration of how the repeater is first accessed. The timer looks to see if the signal on the repeaters receiver is (a) Viable and that it is of sufficient signal strength and (b) is not just a “blipper”, for want of a better word.

This timer has been slightly extended so that anyone who first accesses the repeater from cold is advised to allow just that extra bit of time to identify themselves with a callsign etc, like we always do of course! Whilst this may not totally eliminate false accesses it does give us time to better log the event. Once the repeater is in use then this timer has no further effect.

Repeater Controller.

Back in May we upgraded our firmware to a full release version. This was done following some extensive testing on the bench with a GB3BS repeater mock-up we have and talking to the CEO at Arcom over the pond. We have a very good rapport with him and we have come a long way since first using the Arcom RC210 controller back in 2008. With his help we have managed to get implemented some changes which benefits the repeater and how it operates.

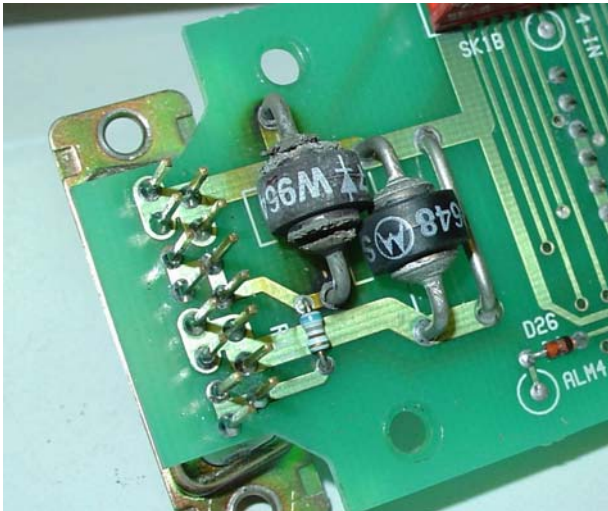
Some of these changes did not always get understood by our American friends, who do things differently over there. But we think that we have managed to contribute and this should help not only us but maybe other repeaters groups in the UK who either use or may consider the RC210 Controller.

In October we upgraded to the latest firmware, this was needed following a small bug that was reported back and has been fixed in this version. I must say at this point that a lot of these firmware changes mostly deal with how the RC210 controller operates rather than what it sounds like or does on-air.

Upgrades that we do are only Full Release versions and **not** Beta Test versions, as in the past these have proved to be unstable.

Power Problems.

Back in mid August we attended site after the repeater unexpectedly went off-air. At site we found that the main 12v DC PSU was in Standby mode and the backup battery was flat! The PSU was power cycled and it immediately came back on-line and the repeater rebooted itself. The standby battery also began recharging. No faults were found as to what caused the PSU to go into standby.



Actual alarm board with the failed diode.

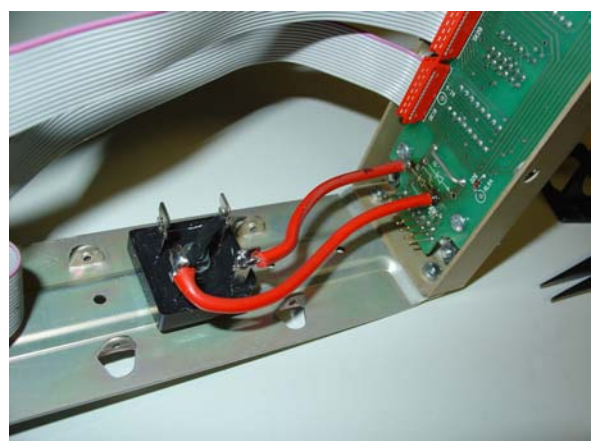
The main purpose of the standby battery is only to maintain the 12v DC supply during an incoming mains supply failure and the generator starting and coming on-line, which is usually around 10-15 seconds. However, it turned out that the battery actually kept the repeater on-air for around 3 hours as it happened. Around 3 weeks passed without incident and then suddenly, again, we had exactly the same situation and the exact same fault. More testing was done at site but again nothing was found that would indicate there being a problem. We returned to site the following week end and decided that we would change out the PSU and temporarily disconnect the standby battery and take both back to the home QTH for some bench testing.

No faults were found with either the PSU or Battery. After some serious head scratching I decided that the only common unit left was the Alarm & DC Power Distribution unit. This is a plug in unit that displays any alarms that are present and is also used to distribute the DC power to the rest of the repeater system.

Gathering a spare unit and returning to site we reinstalled the standby battery and original PSU. We then swapped out the Alarm & DC Power Distribution unit and took the removed unit back for some bench testing.

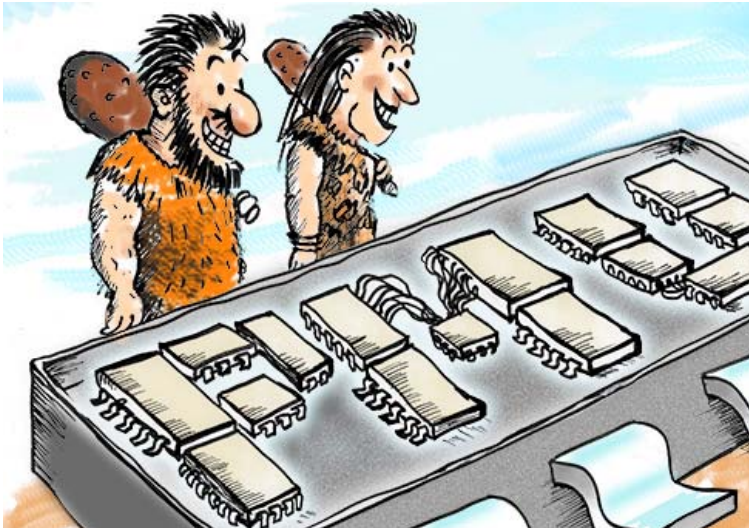
As soon as the cover was removed the cause of our power problem was revealed. The main power diode located on a small PCB had started to detach itself from its leads and the PCB through holes. Giving the PCB a sharp tap the main body of the diode dropped away leaving the leads still connected to the PCB. Clearly this diode had, over much time, been getting warm and then cooling causing the diodes body to become fractured and making an intermittent circuit.

Studying this set up seemed to suggest this is a bit of a design flaw and could potentially happen again if it was simply repaired. As this power diode is crucial to the DC supply I decided to mount a new style of diode and a better rated one on the metal chassis and run some short heavy duty wire between it and the PCB. This results in any heat generated by the diode is now safely dissipated away on the metal chassis rather than just the leads of the diode itself.



Alarm board fitted with new diode block.

The now modified unit was returned to site and re-installed without any problems. The now spare unit was inspected and although not as bad as the main unit, it did show similar signs of diode heating problems on the PCB. This spare unit was similarly modified and so this power problem was finally solved and should not happen again.



1750 Tone Access.

Back at the start of July the PLL Chip used to detect the 1750 Hz access tone became unstable so we decided to temporarily remove it and disable its function. This made the repeater CTCSS Access only. While we were sourcing a new PLL Chip we used that time to see if it was actually missed by anyone!

In the three months that the repeater was CTCSS access only we had heard of only one, possibly two, stations that could no longer access the repeater. Both these stations later moved over to different or new equipment using CTCSS.

However, 1750 tone burst access has now been restored on GB3BS.

[Current Rules] Several people, along with discussions on the repeater, have queried the use of 1750 Tone Access or are unsure of the current rules regarding it. As things currently stand all newly licensed repeaters must be CTCSS only. Those repeaters who historically use or used 1750 tone burst access, like GB3BS, can remain using it if they so wish. There is no push to abolish it.



[Pro's and Con's] So, do we continue to provide 1750 tone burst access on GB3BS?

The only advantage of keeping 1750 access is that any stations new to the area and either do not know the CTCSS tone or do not have it programmed into their rigs can, as a sort of last resort, access using a tone burst.

However, there are several advantages of moving to a CTCSS only access system. Obviously only stations running the correct CTCSS tone will be able to access and use the repeater. Unlike the 1750 tone burst, the CTCSS tone must be transmitted continually. If the CTCSS tone is not received by the repeater then the squelch will not open and nothing will be relayed by the repeater.

This has another advantage in that if there are any times of unwanted noise, interference or rain static then this noise will not keep the repeaters squelch open so allowing the repeater to either close down or wait for a valid station with CTCSS to use the repeater.

Our current plans will probably be to phase out the 1750 tone burst access in the near future. Of course we are always keen to know what you think so any feedback from our members will be of interest.

2.4 GHz Wi-Fi Link.

Last year we mentioned our intention to get a 10 M/bit Ethernet link running between the repeater site and Mat – G7FBD's home QTH. This will allow us to better monitor the sites environment and control the repeater.

The good news is that the equipment and Panel Antenna array has been installed at Mat's QTH and is warmed up ready to go. We are currently waiting for some good weather so that we can initially survey the repeater site as to the best location for the Panel Antenna to be positioned. We are hoping that this may only need a short pole secured to the building to get the link established.

If this does not work then we will be looking at mounting the Antenna a short way up the tower so as to clear any ground obstructions and secure a reliable link. Current path predictions show that the link should give us around 98-99% availability. Once installed we will run some long term Bit Error Rate tests to see how good and reliable the link is.



The 2.4GHz "A" end of the WiFi link.

One Pip or Two?

Are you sitting comfortably? Back in late October the repeater group was made aware that several stations reported having problems breaking-in on, or wanting to join an existing QSO. This problem had been mentioned before in passing but did not seem to be a real issue.

However, with the influx of newly licensed stations and with more people using the repeater from outside the local area we thought that this problem needed to be looked at a bit further.

The problem, as I see it, is that ever since we started using the Arcom RC210 controller which has the ability to digitally remove the normal Squelch tail noise from the through audio, stations were no longer sure when a station had stopped transmitting and thus using the Squelch tail noise as a queue for them to break-in before the first "pip" came along.

Traditionally, most repeaters have either two "pips" or two signifying tones spaced fairly close together in time. The concept being the first "pip" is a courtesy "pip", if you like, giving other stations a marker allowing them to break-in. The second "pip" was to then signify that the next station in the QSO could proceed to transmit (Time out timer beng reset on this second pip).

Many people have mentioned that although there are two "pips" on GB3BS, the second "pip" is too long to wait for (5 seconds)! This is true, but the second "pip" was not intended to be used for that purpose.

Historically, GB3BS always had two "pips" and operationally has not changed in over 20 odd years. The reason for this is (briefly) the old logic that was used could not be changed away from this. The new RC210 controller was programmed, rightly or wrongly, to mimic the old logic.

At the end of October I emailed all Repeater Group members explaining this problem, asking for feedback and would you like to see a change to the repeater thus making things better for all. I also posted a copy onto our web site and Facebook page. I sat back and waited for the comments to flood in.

The response was disappointingly poor, but not unexpected. Broadly speaking, of those that returned an email or posted on Facebook about a third said “keep it as it is, it isn’t broke don’t fix it”. Another third suggested that any changes would be ok if it was really necessary. But any difficulty to break-in on a QSO was maybe down to operating practices. The final third suggested that it would improve the ability for stations to break-in if the second “pip” was moved up and closer to the first “pip”, like other repeaters! These results were taken from everyone who responded, members and non-members alike.

Following some testing on the bench and moving the “pip” timings around we believe that a solution has been achieved that will favour a better ability for stations to break-in while not keeping stations waiting around for “pips”.

The format is as follows (exact timings are yet to be finalised):-

Station using the repeater stops transmitting, 0.8 sec later the first “pip” will be heard. After a further delay of 1.8 sec the second “pip” will be heard. The repeater will then wait a further 7.5 seconds before sending its closedown tone and turning off its transmitter.

Hopefully the time between the cessation of the station using the repeater and **BEFORE** the second “pip” is heard there is that time for stations to break-in and be acknowledged. The second “pip” will now become the Normal “pip” to wait for before a station continues a new “over”.

Another and important change is that the four minute **Time Out Timer** is now reset on the **second “pip”**. This will force people to wait for the second “pip”, thus allowing for new stations the opportunity to break-in. Failure for a station to wait for the second “pip” could result in that station Timing Out prematurely.

By now, and if all has gone to plan, the new “pip” timings will have been implemented on the repeater and that there has been sufficient time to evaluate if these changes have been for the better.

We will of course be monitoring how things are going but I really hope that there will some feedback so that we can determine if any tweaking of timings needs to be done etc, so we encourage you all to have your say and let us know.

Membership.

Membership this time last year stood at around 53. To date we now have 60 paid up members. I think that this current level of membership is the highest ever in the history of GB3BS. However, over the same twelve month period we have lost 13 members, who, for whatever reason have not renewed their membership.

Unfortunately a few have decided not to renew or join and they do so for what is probably best described as “political” reasons. It remains unknown to us as to their real reasons as we have never been approached or told why they feel aggrieved, we are not mind readers. But thus far they continue to use the facilities of the repeater.

Mat and I would certainly like to thank all those who support the Repeater by way of membership or by donations made to the group. I know we say it year on year, but without that support the repeater would cease to exist.

May I also thank the Clubs that invited us to give talks on GB3BS, Repeaters in general and D-Star. We enjoyed the visits and were always made very welcome.

Please check your membership status at the bottom of page 13. If you are not listed there, then this could be the last newsletter you receive from us.

Generator Batteries

A Quick news item before going to press.

While up on site today carrying out the “Pip” modifications (See Above) we carried out a Generator load test, this failed! The generator would only turn over very slowly. Quick Voltage test showed the batteries were at fault.

On inspection we discovered the batteries were dry. How this has missed inspection previously we are not sure.

A dash to the local fuel station resulted in a single 1ltr bottle of de-ionised water, a VERY expensive bottle at that. I (Mat) then shot up to the garage near Marshfield and subsequently cleared them out of 1ltr bottles, all 5 of them. The young lady did look surprised as the bottles did look like they had been there for a while. Anyway, returning to site all 12 cells were topped up, left on the boost charger position on our charger for around 10 minutes until bubbles were seen in the cells. We then re-tested the generator start, and this worked fine. The test procedures have now been modified to ensure levels are tested more regularly.



Email, Web pages, Facebook, Twitter & Skype.

As always we have several sources where you can get the latest news on what is happening with GB3BS, along with topical discussions. Our Facebook pages are quite popular as it allows information to be posted quickly. It is an open Group and providing you have a Facebook account you can read all the postings. If you wish to post to this Group then just request to join the Facebook Group.

Our Twitter page is mainly used to distribute any immediate problems, outages or operational changes on the repeater quickly to those who are following us, (@gb3bs).

Our web site also continues to grow and is kept up-to-date with News, Membership status etc. We have recently added a FAQ section which can be viewed both on our web site and in our Facebook pages. We hope that some of the most Frequently Asked Questions are answered there and we will endeavour to keep it active.

Our Skype connection, which is run from Mat’s home QTH, is proving to be very popular with many connection requests from here in the UK and abroad. Currently this is an off-air feed into a PC running Skype. There are some shortcomings with this service; the main one is that only one connection at a time is possible, so please remember to disconnect your connection when you have finished.

In the future this may be changed from an off-air feed to a direct connection into the repeater, but this will be assessed once we get our Wi-Fi Link working on site (see above). Another change may be to move to a continuous streaming feed to the Internet rather than using Skype. This will allow multiple users to simultaneously listen to the output of GB3BS.

As always you can contact us via Email, our web site, Facebook and Twitter. We welcome any feedback from our members and users alike. If you want to send us a signal report, report a possible fault, ask us a question or wish to complain about something then we will always respond. We much prefer to hear things first hand and directly to us, this helps to prevent any confusion or misunderstanding all round.

If you suspect there is a fault with the repeater and wish to report it urgently then we recommend sending us an Email with as much information as you can provide. You can also send us a Tweet; this is frequently monitored by us. Posts to our Facebook page is also useful as it allows other people to read and comment.

History revisited (Cossham, our old home)

This item may or may not be of interest to our members, but I thought I would include it.

Back in June 2013 I had to go to Cossham Hospital for a MRI scan for the MS. I was pleasantly surprised with what they have done to the hospital.

If you cast your minds back to 2009 we were still residents of the hospital (since 1976). The Hospital was in a bit of a sorry state, and was being threatened with closure.



The Feb 2005 "Save Cossham" protest March.



The frontage of Cossham Hospital after revamp.



The new reception area.



Cossham roof line, including the old GB3BS Antenna.

Thanks to local support by the public (GB3BS were there too) Plans for the closure were scrapped and a £18m refurbishment was planned.

For us (The Repeater Group) it meant being asked to vacate the hospital, and our little broom cupboard on the top floor. Now we are at a better location, LANSDOWN.



GB3BS at Cossham.

The new building (Less the antenna arrays) does look smart. Personally I think a bit of a clean to the stonework is needed to finish the job off, but the new roof and windows do look right.

The biggest shock was the inside, what a nice modern looking reception area, the main stairs have gone, and now lead down to the MRI scanner. I had limited permission to take pictures of the interior by the hospital, and I have had to respect their wishes.

Thanks to NBNHS trust for permission to take the internal pictures.

Mat – G7FBD.



New Repeater Proposal.

The Repeater Group have recently submitted (24th November 2013) an application to the ETCC for a new Digital Voice repeater. The callsign requested is **GB7BS** and will be co-located with GB3BS at our Lansdown site.

This is **not** a D-Star repeater but a true digital mode using Time Division Multiple Access (TDMA). The proposed system will be using Digital Mobile Radio (DMR) technology which, very briefly, allows for two digital voice channels (or time slots) per 12.5 KHz.

We must stress that although DMR has been around for some time in the commercial environment, it is relatively new to Amateur Radio and as such it is still very much in its infancy and that includes transceivers available for the Radio Amateur market from sources such as Icom & Yaesu etc.

If anyone wishes to read more about DMR technology then there is plenty on the Web and the site <http://dmrassociation.org/the-dmr-standard> is a very good place to start.

This proposed DMR based system for GB7BS is not intended to replace GB3BS in any way, but we feel that moving towards a true & managed digital mode is the next logical step for Amateur Radio generally and for the repeater group.

It is very much in the future as to how this project will come together or how it might be funded. What we do have is a good site, accommodation and an aerial system that will allow the integration of this DMR repeater if a NoV is granted.

We of course hope that our application will be successful but more importantly it get's your support.

So, in the mean time, don't rush out to buy new equipment just yet and we will endeavour to keep everyone informed of progress as and when it happens.

We were hoping to get this newsletter out before the application was general knowledge. However we have not achieved this due to a bit of miss-timing, so an apology if you're affected by this, it was not intentional.

And Finally.

Mat and I both put in a lot of time into the repeater, this work is not always on-site but it is always enjoyable. We do our best at responding to faults as quick as we can and keeping any down time to a minimum. As we have said before, we are always around if you wish to discuss anything with us or have any questions.

A very sincere thanks to everyone out there who have supported us and the repeater GB3BS.

73' for now, we do hope that you have enjoyed our 2013 newsletter and wish everyone a very Happy Christmas and New Year.

Mark – G4SDR & Mat – G7FBD/KG7FBD



CURRENT MEMBERS OF THE BRISTOL 70cms REPEATER GROUP

UPDATED: 1st DECEMBER 2013

2E0EEK	2E0IKK	2E0JUW	2E0JWJ	2E0KAV
2E0PGS	2E0ZAW	G0ECM	G0GRI	G0GZW
G0XAY	G1FNR	G1FUA	G1IHL	G1IXE
G3LYW	G3LZN	G3XED	G3XOB	G4EIA
G4EJH	G4FJH	G4FUA	G4JQX	G4KUQ
G4MCQ	G4NFS	G4OJI	G4PHZ	G4RZY
G4SDR	G4TAH	G4THG	G4YZR	G7AGI
G7BYN	G7FBD	G7FCT	G7KNA	G8CKK
G8JUT	G8YMM	M0AKF	M0GBH	M0GTT
M0HDJ	M0HTB	M0LHS	M0PRJ	M0SFT
M0XMM	M1BGB	M3HNL	M3JDK	M6BJL
M6CQJ	M6FUA	M6KVM	M6LFA	M6OJI



Membership about to expire.

Remember, if you are not listed above then this could be the last newsletter you receive from us.

LATE BREAKING NEWS



As mentioned elsewhere in this newsletter, we carried out some work at Lansdown today (1st December 2013).

During this work we found a slight signalling problem with the “Generator Running” alarm.

We did not have time to fully investigate, but potentially it is a capacitor fail on the DC supply circuit. This is making the signal “Bounce” when triggering the alarm. The result at the moment is a “Power Failure Alert Clear” being sent instead of the correct “Alert Active”. Work will continue over the next week or so, this does not affect the repeater operation.

THE BRISTOL 70cms REPEATER GROUP, (GB3BS)

🌐 GB3BS Website: <http://www.gb3bs.com> ✉ Email: info@gb3bs.com

If you use the Voice Repeater **GB3BS** and would like to support the group then all you need to do is fill out this form and part with **£6.00p**. Your details and membership fee will then be passed to our treasurer. You can also subscribe using Paypal[™] (also supports Credit/Debit card payment). See “Membership” on our website for detail.

PLEASE REMEMBER

*Repeaters do cost money to run.
Without members the repeater GB3BS would cease to exist.
Please help support what you use.*

Please make cheques payable to “Bristol 70cms Repeater Group”



Please tick appropriate boxes and print clearly – Thank you.

£6.00 Membership Donation Amount £_____

I am paying by **CHEQUE / CASH** *Please delete the appropriate.*

Callsign: _____ Email: _____

Name: _____

Address: _____

Postcode _____

Please send to: The Bristol 70cms Repeater Group, 66 Forest Avenue, Fishponds, Bristol. BS16 4DA.

PLEASE NOTE: Membership is based on a yearly subscription (from the date processed). Although we can process advance yearly membership we would discourage this method. At present we **DO NOT** have a “Family” membership, or any other concessions. Please also note **ALL** membership fees and donations are **NON** refundable. We recommend you do not send cash through the postal system. The Bristol 70cms Repeater Group cannot be held responsible for lost or missing payments. Being listed on our website is conformation of membership. No receipts are issued unless a stamped address envelope has been provided.

Any information/data provided will **ONLY** be used to mail you our newsletter. Data will be deleted 6 Months after the laps of any membership. Reminders of pending membership laps will be sent via email where possible one month before the expiration date. The membership section of our website also reflects this information.