



Mid Sussex Amateur Radio Society
NEWSLETTER
November/December 2008

Mid Sussex Matters



In this issue

- **AGM Report**
- **CQ WW Contest**
- **Contester's Primer**
- **Adventures With a Hustler**
- **Help With Batteries**
- **George Is Still At It**
- **Oscilloscope Basics**

FROM THE PRESIDENT'S CORNER

It's still raining and Stella reckons that we've only had three days of sunshine this year. Never mind, the bands have opened up and we are having regular contacts with Bob N4XAT and other new and old American friends on 15m several times a week at last. One or two members of the Cape May ARS listen regularly and participate if conditions are particularly good and David W1GN has surfaced through the noise to join us again.

The number of K3's used on the air by Club members continues to grow but David and I had other ideas and both bought Yaesu FT 950's in the past few weeks. Now we've joined the multi memory club and are trying to get our heads round the 128 page instruction manual with its 118 menus, but I'm very pleased with my purchase and hope that David is too.

These new rigs do seem to prove that if you have particularly good audio the station at the other end of the pile up hears you above the rest of the callers and you get more contacts.

Of course, as I've said before even the best rigs won't give outstanding results unless they are connected to a decent antenna so, as soon as the weather improves, get out there and have a good look at yours to see if you can improve it and then join in our midday and weekend nets to enjoy the better conditions that have been so long in coming.

Ken Gibson G3WYN

On The Cover

"We don't know what it is either!" Gavin Keegan G6DGK, John Summers M5JWS and Russell Nelson G7TMR share the puzzlement with auctioneer Martin Green G1DVU at the surplus equipment sale on 24 October.

Photo Credits

Cover G8KMP, p. 8-9 G3WYN, p. 10 Sandy Keegan, p. 11-13 manufacturers' web sites

From the Chair

There is no From the Chair this issue. As many of you will know, our Chairman Russell Nelson G7TMR has been taken ill. I hope that at the moment he is sitting comfortably in his chair, recovering, and not worrying about this column or MSARS business. Please join me in wishing Russell a swift recovery.

Bob Clinton GØBUX

The MSARS Annual General Meeting

The Society's Annual General Meeting was held on 17 October. The principal purpose of the AGM is to elect officers and the committee for the next year. Here is the list for 2009:

Officers:

Vice President - Mike Pollock - G8KMP
Chairman - Gavin Keegan G6DGK/8P9GK
Treasurer - Stella Rogers SWL
Secretary - Mark Tickner M3XHZ

Committee:

Sue Davis G6YPY
Rob Ashman 2E0RJA
Kim Newland G7AIE
Jackie Moore 2E0FQV
Phil Brown M5BTB

The new committee assume their places on 1. January 2009. This somewhat odd situation was queried at the AGM and it is intended to hold an Extraordinary General Meeting in the New Year to discuss the ramifications of the Constitution and to amend it as deemed necessary.

The business meeting was followed by wine and cheese.

Mike Pollock G8KMP

Editorial

In September our President reminded us of our duty to ensure that our operation under call sign G5RV is always of the highest standard, both technically and in operating practice. Of course we should always strive for the highest standards when operating under any call sign, but our stewardship of G5RV imposes an even greater obligation, especially to operate with the highest degree of friendliness, courtesy and sportsmanship.

But we should not treat the G5RV call sign as if it is some medieval artefact, to be displayed only on rare occasions. I am sure that Louis enjoyed using his call sign and that he would want it to be often heard on the air in contests and special events. It was with this thought in mind that Chairman-elect Gavin Keegan G6DGK proposed to operate G5RV during the recent RSGB Club Calls Contest. This is a short (only three hours) event on top band SSB and this year it was held on Saturday 8 November. An hour before the 2000 starting time, Gavin and I fired up the rig and the computer at his Newick QTH and at the kick-off our first QSO was with President G3WYN. We were soon joined in the shack by Mike Pollock G8KMP and the three of us rotated the operating and logging duties. None of us are championship contest operators and we certainly didn't win this one, but neither did we bring disgrace on the Society. We logged 50 contacts, which would be about half of the number worked by whoever wins. Next year, we – or whoever wants to operate – should do better. What was most gratifying was the number of contacts who recognised the call sign, many commenting “what a great call” or “it's great to hear it on the air again”. That made the effort more than worthwhile.

This contest was not the only MSARS activity that Saturday night. Former Chairman Kim Newland G7AIE let an intrepid group out into the wet Sussex night to provide communications for the St Wilfrid's fireworks display.

When I joined the US Navy 52 years ago one of the first pieces of advice I received was “don't never volunteer for nothing!” In early 2007 I violated this principle by volunteering to edit this newsletter. Doing this job has been very rewarding but by March 2009 I will have done it for two years and I think it will be time to let someone else have a turn. If nothing else, producing an edition every month or two is cutting into my on-the-air time, but I also think that a new editor will bring some fresh ideas to the publication. So if you would like to accept this challenge, please let Gavin know. I will of course provide assistance during the transition.

Bob Clinton GØBUX

The CQ WW contest 2008

Each year the CQ magazine organises a “no holds barred” contest. In October the SSB event is held over a whole weekend. There are no requirements for limits on power and the reports have no serial numbers so it is a free for all. In practice it spreads all over the usual contesting bands, regardless of band plans and the usual requirements to respect mode defined segments. The reports are usually “5&9” and your CQ zone number (ours is 14). The idea is to work as many stations as possible on the 160, 80, 40, 20, 15 & 10 metre bands.

This is great if you are new to country collecting, and can result in 100 countries over the weekend. This year I decided, rather than to just get countries or zones, to run myself a 2 hour dash to see what could be worked in a short time. To make it more interesting I chose to work only 15m, which should have been dead with the solar flux at only 68 and negligible sunspots.

In the Saturday slot of 1000 to 1200 GMT I worked 56 stations on a search and call system. Only 30 per hour, but OK for that method bearing in mind there were no power limits for our friends on the continent and I only used 100W and my delta loop.

A quick analysis of these 56 QSOs showed propagation working into zones 14, 15, 16, 18, 20, & 21. This is a spread mostly to the east. No Scandinavian stations nor any African; however in the afternoon it was a different story. A total of 22 countries worked in two hours, not too bad for 15m with no sunspots. This year only one new one for me, A7 Qatar, which I had not realised I had missed in previous years.

After lunch, in the evening and on Sunday I played at getting points, with bucketsful of stations on all bands. 20m was like a zoo and gave no surprises; however in the late afternoon the propagation on 15m swung through south and to the south west. I picked up several Caribbean islands, the north coast of South America, Guyana, Brazil, and down to Argentina and Chile in zones 8,9,11, 12, & 13. Interestingly, Saturday at 1200 there were no North American stations heard but on Sunday the eastern states, mid western, Canadian north and Ontario came in strong.

In conclusion, although these contests swamp the bands with iffy operating and saturated power levels, they are an excellent tool to watch real world propagation. Perhaps the club might consider an entry next year to try the waters and introduce some of our HF novices to a weekend of operating!

Chris Saunders G4ZCS

A Contester's Primer.

I am not a very successful contester, but I have learnt a huge amount by "having a go" on many occasions.

First, what is the point in entering a contest? It is great fun to do, it gives you the opportunity to fill your log book with new, and sometimes exotic calls, and the chance to win a trophy or certificate.

Second, how do you go about it? Read the rules, and the appendix, and the general instructions. All this reading will give you the information on what is expected, how to gain points and give away points to others as well. Much of the station design is controlled by the rules and should be adhered to as much as is practical. The choice of bands, frequency slots within the bands, modes, power and antenna, is all specified by the rules. Very seldom is there a free-for-all, but if you have followed my occasional reports on international contests you will have read that there a few.

Setting up the station includes not only going out to the shack and turning on the radio and shouting. It also includes things like downloading the latest logging software from the internet and learning how to use it.

Once all is ready and the day (or night) arrives, the most important thing is the operator! Have you had enough sleep recently, do you need to go to the bathroom? Is there someone else to answer the phone or go to the door? Have you enough drinks to hand, do you have plenty of paper, pens and is the computer backed up? Where is your copy of the rules and the band plan and, most important, do you know the script for the contest?

I recently tried the top band AFS (Affiliated Societies contest) to give the K3 a work-out on the low frequencies. The "script" for this contest is to exchange signal report, serial number, and your status; in my case "Member, Mid Sussex Amateur Radio Society", whereas G5RV was running as "Club Station, Mid Sussex Amateur Radio Society". This is a real handful, not only to repeat for each contact, but also to log correctly! Some contests only need "59,14" or some similar report, which is a lot quicker and easier.

Next, decide whether to stay on a single frequency or to scan up and down the bands. If you are working, say, the IOTA contest and want to contact some exotic island, then the way is to scan the bands for them, because they will not be interested in looking for you. However if you have an interesting call and want to score loads of points, then stay on one frequency and let the others come to you. The AFS contest gives a clue as to the level of results to expect. Stations that held on to one frequency were scoring up

to 125 QSOs in the three hour contest, whereas “Scanners” like me were only scoring in the 50s and 60s.

Why is this? If you stay on one frequency, there is no need to adjust the radio, there is no need to match the other guy’s audio pitch, he has to match yours, and that takes him time, not you. The other guy does not know your call till you have completed a QSO with someone else, so he has a listening delay and, finally, you control the contact so call QRZ when you are ready to accept the next call. The scanner on the other hand has to sweep the bands for a signal, tune on to it and then wait to hear the station’s call. Then you need to check you have not worked it before, (easily done), then you make a call and hope to get in first time. If there is a pileup you might have to wait your turn. All this is time consuming and shows the advantage of the fixed frequency station.

So what can go wrong? Leaving everything till the last minute can mean that you cannot find a clear slot on the band. Forgetting to prepare the script could mean giving the wrong report and losing points. Operating out of limits on the contest segments of the bands could mean disqualification. Having to stop transmitting for a couple of minutes to “go to the loo” could lose you your hard won frequency. Then you will have to “scan” till another slot becomes available, with all the inefficiencies that entails.

I think power supplies, antennas, rig settings and logging should all be self explanatory so I will mention them no further here.

So what happens after the contest? You should be prepared to carefully check your log. In the case of the AFS contest that means checking the spelling of all club calls and being certain that the likely errors of logging us as the “MSAR Club” or the Horsham Club as a “Society” are removed. Points will be deducted for such errors. BUT be aware that some clubs may have changed their name recently and some may not appear in the latest directory. Submitting your entry MUST be done in accordance with the organisers’ rules and preferably using the format requested. In recent years there is a trend to automatic checking and scoring of e-mailed logs, so be prepared. Read the rules before the contest to be certain you can comply.

Finally, have fun! Contests can be great fun and the source of considerable amusement. All you have to do is to listen to an overloaded club station with a big pileup when the logging computer crashes!

Chris Saunders G4ZCS

ADVENTURES WITH A HUSTLER – Part 2

This is the conclusion to Ken's adventure story, which commenced in the September/October issue.

These changes did the trick and the vertical then coupled to the ground radial system alone started to tune up correctly. In my case I was able to bring each of the 7 bands close to a 1:1 match and dispense with any form of ATU, plugging the coax from the vertical directly into the back of the transceiver.

I also found that coupling the analyser via a 6 foot length of coax to the antenna was the wrong way to go about it since any metal or person near the antenna affects the tuning. I finally put the analyser at the other end of the coax in the shack and trotted back and forth to view the match after each adjustment. I appreciate that I was tuning the antenna system rather than the antenna itself but this arrangement works for me.

Not everything went to plan however. I took time off for lunch one day, switched off the antenna analyser (but left it connected to the vertical), came back and ran my daily 15m net on 21.330 but found on resuming work on the antenna that the front end diodes

in the antenna analyser had burnt out! My fault, but unexpected and not mentioned in the MFJ handbook. I'm currently awaiting some kind soul with steadier hands and a large magnifying glass to replace the SMD diodes with working ones before I can complete the tuning. Luckily, all bands are very close to their final required positions save 80m which still works fine mid band despite being resonant at 3.570.

The work involved in repeatedly measuring the setting of each of the 7 bands, taking down the antenna, carrying out another adjustment, re-installing the antenna in its mounting and repeating the cycle soon palls on you and, since the antenna is so robustly constructed and weighs around



The Hustler - ready to radiate

25 pounds, it became rather dangerous to single-handedly continue this procedure.

The solution was to purchase a Tilt Base Mounting Plate assembly from DX Engineering of Akron, Ohio who make a model specifically for the Hustler 6-BTV.



The Hustler mounted on the DX Engineering tilt base

This revolutionises the up-down procedure making it a simple operation accomplished in no time at all in complete safety by one person. The tilt base made from a stainless steel plate with all stainless mounting hardware and cast clamps is extremely robust and well made. In my case I was able to prevail on one of my sons who was on holiday in the USA to bring one home for me, (without telling him how much the package would weigh). It has proved

invaluable in allowing the tuning and adjustment of the Hustler to be accomplished single handed and in complete safety.

I have guyed the antenna with three nylon ropes fitted above the 14MHz trap at around 14 feet above ground and tied off to posts in strategically placed flower beds. The antenna hardly moves in even strong winds, a testimony to its rugged construction.

Some work on tuning the antenna still remains to be done but it can now be used plugged directly into my FT840 and, save for 80m at the moment, all other bands show a SWR of between 1:1 and 1.3:1. Even though 80m remains to be finally trimmed to resonate at 3.740 MHz, I am very impressed with the bandwidth available and the fact that I can already make 80m contacts throughout the UK and Europe getting 5/9+20db reports using just a 27 feet high vertical. I am particularly impressed by my ability to work David GM4FOZ, controller of the RSARS net up in Scotland with 5+9 reports both ways on many occasions with such a short antenna. The other bands are giving me similar satisfaction and I have worked JA, W3, VO1, all around Europe and into Asia and Africa in today's very poor HF conditions. I also notched up 46 new islands in the recent IOTA contest, pitting

(Continued on page 10)

(Continued from page 9)

my vertical and 100watts against the big boys with their 5 element beams and Alpha Linears!

The Hustler, like most verticals, is noisier than horizontal antennas and as I suffer from hearing loss in both ears and otherwise use hearing aids, I use a BHI "Noise Away" amplified noise elimination unit in series with the output from the FT840 and find that this, after its modification by the manufacturer for headphone use, completely kills any noise on the signal.

I can't wait till conditions improve and I can really assess the antenna but I can unhesitatingly recommend it for those with sufficient room for an efficient ground mat and with enough space to install it at least 20 feet from any metal object or building. I also imagine that it would work very well against a single ground rod near the sea but have no intention of uprooting mine to find out!

Ken Gibson G3WYN



The MSARS Club Calls Contest Team relaxing after the contest on 8 November. Bob Clinton GØBUX, Mike Pollock G8KMP and Gavin Keegan G6DGK

Help is At Hand

I have been diagnosed as having BAS. Since some of you may also suffer from this malady, I would like to suggest some palliatives to relieve the symptoms. The disease is of course incurable but it normally exists in acute form, with the symptoms appearing only in certain circumstances.

BAS is Battery Anxiety Syndrome. The symptoms, in addition to nervousness and sweating palms, include the propensity to request frequent radio checks. The symptoms are almost entirely restricted to appearing when the victim is operating at Field Day or at a public service event. But there is hope, even for the most severely afflicted sufferer.

The first step to relief is to know what your battery voltage is and how much power you are draining from it. Measuring the voltage is easy. Measuring the instantaneous current drain is a bit more difficult but can still be done with a multimeter. But unless you take these readings while holding a stopwatch you still won't know how much you have drained the battery. On a recent trip to the USA I acquired a gadget that measures the power drain – this is the Power Analyzer 2, produced by Medusa Research Inc.

(www.MedusaProducts.com). When connected between a battery and its load (e.g., a transceiver) the display will show the battery voltage, the current drain at the moment and the instantaneous power being consumed.

In addition it also displays the energy (in both Watt-hours and Amp-hours) that has been drained from the battery since the analyzer was connected. The unit is designed to measure batteries with a nominal voltage of 12V. It operates from the battery being measured so long as at least 6V is available. Since our radio gear will have given up long before the battery voltage declines to that level, you shouldn't have to worry about powering the analyzer, but there is a connection for external power that will allow it to measure down to 0 volts. You can also use the Power Analyzer to measure the flow of current *into* your battery, i.e., when you are charging it.

The model that I purchased is the basic model, though it appears adequate for my purposes. There is also a model with a USB interface to allow data collection if you want a more detailed view of your battery condition.



(Continued on page 12)

(Continued from page 11)

After returning from my US trip I discovered that there is a UK distributor for the product: Aurorra Ltd. (www.aurorra.co.uk) who sell the Analyzer 2 for £48.10. From the description on the website it appears the model they supply has the USB interface. My unit came equipped with Anderson PowerPole connectors; the models provided by Aurorra aren't advertised as having these connectors but the company has indicated they can do this if desired.

One word of warning: Medusa Research and Aurorra are both primarily in the radio controlled aircraft market. If you delve too deeply into their product listings you may find yourself addicted to yet another expensive hobby.

Knowing how much power you have drained from your battery is all very well but your anxiety will not be completely alleviated unless you know how much there is left in it. In other words, how much capacity does the battery actually have? The nominal value is probably printed on the side of the case but after being used for some time most batteries will not actually attain this value. The answer can be provided by another gadget, the Computer Battery Analyzer, produced by West Mountain Radio. I have had a CBA for several years and use it from time to time to check on the condition of my sealed lead acid batteries. One of the CBA's leads attaches



to the battery under test and the other goes to the USB port of a computer. West Mountain includes a software package with the CBA which allows you to specify a discharge rate and a cutoff voltage. The software then monitors the battery voltage vs. time and produces a plot on screen. A full discharge test can take several hours, depending on the battery capacity, but you can get a rough indication of battery condition with a shorter test.

The CBA is available in the UK from Waters & Stanton for £99.95.

My Kenwood TM-D710 is an excellent mobile rig but it does seem to be quite sensitive to battery voltage and if the voltage declines too much it starts to reset itself. But relief from this source of anxiety can also be obtained. There are at least two gadgets on the market which will maintain

(Continued from page 12)

the voltage supplied to the rig at a preset value (e.g. 12V) even if the battery voltage drops below this value. Now, those physicists among us who have a deep knowledge of Newton's Laws know that the most important of these is the one that says "there ain't no free lunch". Battery boosters are not exempt from this law. The booster circuitry itself needs some power from the battery and it obviously must draw some extra current in order to boost the output voltage to the desired value. But if you are concerned about voltage level (as my D710 is) and can provide a margin of battery capacity to run the booster, this type of gadget may be what you need. Unfortunately I can't provide a first hand review of one of these boosters because the one I have on order has yet to arrive, but there is a detailed review of the MFJ-4416 and the TGE N8XJK boosters in the November 2008 QST. There have also been articles on building your own booster in the recent past. Perhaps I will be able to add my own experiences by the time the next MS Matters comes out.



So, fellow BAS sufferers, help is available, and you don't even have to join a support group to take advantage of it.

Bob Clinton GØBUX

GEORGE IS STILL AT IT!

We all know that conditions are bad and that there's no one on the bands these days but George G4PTJ still seems to find them out there somewhere. The latest totals list in Radcom this month shows George with a combined total of 2448 country/bands worked, with 114 on top band (who ever heard of 114 countries on top band?), 241 on 80m, 284 on 40m and even 307 on 10m.

George does all this with modest antennas and a simple mast buried in his back garden in Lindfield, a lesson to us all to listen very carefully before switching off next time because "there's nobody on today".

Well done (again) George!

Ken Gibson G3WYN

Mid Sussex Happenings

5 Dec	Radio Night (D)
7 Dec	AFS 2m Contest (D)
12 Dec	Christmas Dinner at The Thatched Inn
19 Dec	Christmas Quiz and Mince Pie Evening (D)
26 Dec	Shut
2 Jan	Meet the Committee and Round Table Evening (D)

Meetings are held on Friday evenings starting 7:45 at
Cyprus Hall, Cyprus Road, Burgess Hill. West Sussex, unless other-
wise noted. U=upstairs, D=Downstairs

Visitors are always Welcome

CLUB NET TIMES

Join in if you can. All times are UK CLOCK times.

Sunday	08:00	3.74MHz ± QRM
Sunday	11:00	S14 (145.350MHz)
Sunday	20.00	HY Net 433.125Mhz
Wednesday	20:00	S14 (145.350MHz)
Weekdays	13:30	21.330MHz. Work the USA
Tuesday	20:30	3.725 MHz ± QRM SCARF

Deadline

The deadline for items for the January issue of Mid Sussex Matters is

15 December 2008

Canvey Radio & Electronics Rally

The South Essex Amateur Radio Society invites you to their 24th Canvey Radio & Electronics Rally on Sunday 1 Feb 2009 at The Paddocks Community Centre, Long Rd, Canvey Island SS8 0JA. (The site is situated at the southern end of the A130 off a new mini roundabout) Doors open at 1030 . Major amateur radio and electronic component exhibitors will be selling new and used equipment. Refreshments, including Bob's Bacon Rolls, will be available. Car parking is free and this is a disabled and wheelchair friendly site. Clubs may book tables to sell surplus equipment, and individual amateurs may book tables for the day or by the hour. For full details and maps visit:

<http://www.southessex.ars.btinternet.co.uk/>

Or phone the Rally Organizer : Ken Hendry ☎ 01842 861089

Norman Crampton M0FZW

Oscilloscope Basics

At a recent meeting Chris Saunders G4ZCS entertained us with another of his informative talks, concentrating this time on Oscilloscopes. Before the talk Chris had delved under the workbench in the shack and retrieved two old and unused scopes that had been stored there for some time. He also brought his own small scope with a 1.5" square blue screen.

Chris used a PowerPoint presentation to illustrate the basics of a scope and backed these up with some simple demonstrations of waveforms etc.

There was plenty of opportunity to play with the kit after the talk and old memories were recalled along the lines of "I remember when I first built/used my scope".

Roger Ferrand G7VBR

Mid Sussex Amateur Radio Society

President	Ken Gibson	G3WYN	01444 412420
Vice President	Mike Pollock	G8KMP	01444 244953
Chairman	Russell Nelson	G7TMR	01444 236795
Vice Chairman	Alan Cragg	G8YKV	01273 844511
Secretary	Gavin Keegan	G6DGK	01825 722045
Treasurer	Stella Rogers	SWL	01273 844511
Programme Secretary	Sue Davis	G6YPY	01273 845103
Shack Manager	Alan Cragg	G8YKV	01273 844511
Committee	Luke Milburn	2E0ZLM	01444 254728
Committee	Alan Cragg	G8YKV	01273 844511
Committee	Phil Brown	M5BTB	01444 235826
Licence Holders	Chris Cook (G1ZMS, G3ZMS) Gavin Keegan (G5RV)		
Examiners of Accounts	Roger Ferrand G7VBR, Tony Finch G3XQM		
Reserve Examiners	Mike Munday G1TDL, Chris Saunders G4ZCS		

Club Web Site: www.msars.org.uk

Newsletter

Contributions are invited from all club members. The cut off date is the 15th of the month prior to publication.

Address all contributions to the editor:-

Bob Clinton GØBUX

Appletrees, Alexandra Road, Mayfield, E Sussex TN20 6UD
Home Tel: 01435 873279 Email: m.s.matters@btinternet.com

(Note: All articles and pictures are copyright of their authors)

Sponsored and printed by :-

THE PRINTED WORD, Business and Promotional Print Ltd.

7-9 Newhouse Business Centre

Old Crawley Road, Horsham, West Sussex RH12 4RU.

Tel: 01293 851053

Email: mike.webb@printedword.co.uk

FAX: 01293 851900