



Mid Sussex Amateur Radio Society
NEWSLETTER
April 2008

Mid Sussex Matters



In this issue

- Receiver Sensitivity
- Believe it or Not
- Really Chasing DX
- Emcomm Software
- Happiness is a Flagpole

FROM THE PRESIDENT'S CORNER

Congratulations to our two new 2E0s, Alex and Luke, who passed their intermediate examination a week or so ago. I look forward to working them both with their big signals on HF soon.

The recent heavy winds dropped my big loop onto the lawn, luckily just after my weekend 80m net, but the thought of venturing into the garden with a soldering iron on a 200 foot lead in all that wet weather, even in Wellington boots, to repair the break made me pause a while and check that the life insurance was up to date!

All is now well, however, and the loop is back up in the air but not a lot could have stayed up in the winds we had here in Cuckfield. I hope that your antennas survived.

The recent "How I started in Amateur Radio" evening revealed a few good tales. These could go into the Newsletter you know - just jot them down and send them to your long suffering and excellent editor.

Have a good month.

Ken Gibson G3WYN

On The Cover

How did you get started in radio? Peter Fry G4AKG recalls his early experiences while Alan Cragg G8YKV looks on, at our 7 March meeting.

Photo Credits

Cover, p6, p10 - GØBUX. P 8, 10 - G3HUA P12- G0SWS

From the Chair

First, I'd like to take this opportunity to say the newsletter is late owing to my losing the first "From the Chair". It was only after Bob told me he still had a blank page in this issue that I then discovered the original had managed to lose itself in this black box.

Friday 28 March saw the first Surplus Equipment sale of the year and we had two special guests attending: Bob N4XAT on another visit to these shores from across the pond and Sean EI7CV who is becoming a regular visitor. It's great to see you both and I hope you both managed to spend a lot of money - it will help swell the society's bank account. While on the subject of the sale, congratulations to Chris M1CSE who took over the task of auctioneer from Kim G7AIE for the second half. This was his first attempt and everyone seemed very impressed. Also a big thank you to everyone who helped on the evening.

Congratulations to Phil M5BTB for successfully getting Alex & Luke through the intermediate exam and, of course, congratulations to you both for the hard work you put in and on your new call signs. May you be the first of many that Phil guides through their exams.

Lastly, on a delicate subject- we are still waiting for some of you to pay your subs. Please see Mike G8KMP as soon as possible with your money.

Well that's all for this month

73 till next month

Russell Nelson G7TMR

Two New Call Signs

Luke Milburn and Alex Henderson made good use of the Leap Year day to pass their Intermediate licence exams. Luke's call is now 2E0ZLM and Alex is 2E0TET. Congratulations to both of them.

Editorial

Don't get nicked by Occam's Razor. As most of you will know, Occam's Razor is the logical principle which states that you should not make more assumptions than the minimum necessary to solve a problem. When translated into the realm of electronic troubleshooting it dictates that you should look for the single cause that explains the various symptoms that you are observing. And this is generally good advice, except that 51 years of troubleshooting computer hardware and software, radar and radio equipment have taught me that, on more occasions than you might imagine, there turn out to be two or more faults combining to cause the problem. You certainly need to keep Occam's Razor in your tool kit, right next to your favourite screwdriver, but you also need to include the flexible spanners of imagination and lateral thinking.

In working with electronic equipment there is one law that never fails: Murphy's. If anything can go wrong, it will. (corollary: if nothing can possibly go wrong, it will anyway.) This was vividly demonstrated in mid-March during a test of 5 MHZ communication that G3WYN and I had planned for the mid-Sussex area. We were supposed to do this in conjunction with the emergency coverage test last July but I had my rig on the wrong sideband so we didn't make contact. This time I was determined to do everything right. We double-checked our settings of frequencies and sidebands and I spent a morning with the antenna analyzer making sure that the connections to the two antennas to be used were OK. Everything looked fine, but on the day I wasn't able to contact Ken from any of the planned test locations. I did manage a contact while parked in his driveway, but that was hardly an affirmation of our 5 MHZ capability. It appears that I have a faulty cable or connector in the pathway to the mobile antenna mount, but the symptoms are somewhat ambiguous. Occam may not be entirely wrong but Murphy is always right.

I had a last-minute change of plans on 29 February so didn't make it to the Royal Oak in Barcombe for the skittles evening. Just as well, because the pub had double booked and no skittles were available for MSARS. And I was really looking forward to a dish of fried ones.

Bob Clinton GØBUX

How Good is my Radio?

An occasional series by Chris, G4ZCS

Receiver Sensitivity.

My radio's better than yours 'cos it's more sensitive!

Sensitivity is a measure of a radio's ability to hear low level signals above the noise of the radio itself, regardless of external interference. We are looking for the "MDS", Minimum Discernible Signal. This is a signal that can just be heard over the internal noise generated within the radio itself. The numbers that appear in the sales blurb are sometimes hidden by the use of different units of measurement. The common measurement is expressed in μV and with some qualification. First we must assume that all radios have a 50Ω input and second we need an agreed signal band width (BW), usually 500Hz, although other widths are used.

And finally the measurement is made for a wanted signal that can just be heard over the noise by a factor of 10dB. Most radios generate a variable amplitude noise level that is also frequency variable, generated internally by its components and circuit blocks, which is why figures are published for each band. (Refer to last month's article to see where the noise comes from.) Add to that assorted "sprogs" from the synthesiser and dividers.

So let's look at some figures plucked out of sales brochures and Radcom reports, picked at random. The Yaesu FT1000MP Mk5, 80M band - $0.40\mu\text{V}$. This is the worst found in this group. (Remember, the higher the signal level needed to overcome the internal noise, the worse the radio). The same radio for 10M is $0.13\mu\text{V}$, one of the best!

The Yaesu FT 9000dx has $0.32\mu\text{V}$ for the 20M band. The Icom IC 775 has a figure of $0.11\mu\text{V}$ on 10M, whilst the best quoted of all is the Kenwood TS 870 on 10M with a figure of less than $0.1\mu\text{V}$. However there is a "new kid on the block" that makes all these radios look surprisingly poor. Although the above figures are quoted in μV they can also be expressed in dBm, which is a measurement of the power level at the receiver connector, rather than a voltage. $0.5\mu\text{V}$ is -113dBm and down to $0.11\mu\text{V}$ at -126dBm. Using the decibel scale is easier as the voltages are a little close between measurements. The difference between -113 and -126 is 20 times!

Now the "newbie", the Elecraft K3 from the USA, is quoted as -136dBm for all bands, a full 10 times better than the best of the rest. It must either have extremely quiet internals, or it was not turned on during testing.

(Continued on page 11)

Believe it or not

If I told you I made an antenna 650mm in diameter and I can transmit 80 to 17m with 100 watts with a SWR of less than 1.2:1, I think you would tell me I am smoking my socks. Well let me tell you the story.

My XYL and I, retired in South Africa where antennas are generally big. We then relocated to my son in Lindfield West Sussex, with no ground, a landlord and a noise level of 9+20. I was ready to take up tiddily winks. My Butternut did not work nor did a new Hustler. I asked around at the club and was given a loop design which jogged my memory.



In Practical Wireless November 2003, John Heys G3BDQ, wrote about a Slinky Hula antenna he made with a slinky, a hula hoop and a 120 Pf capacitor which he made. So using his design and a bit of my mechanical skills I have made my own version.

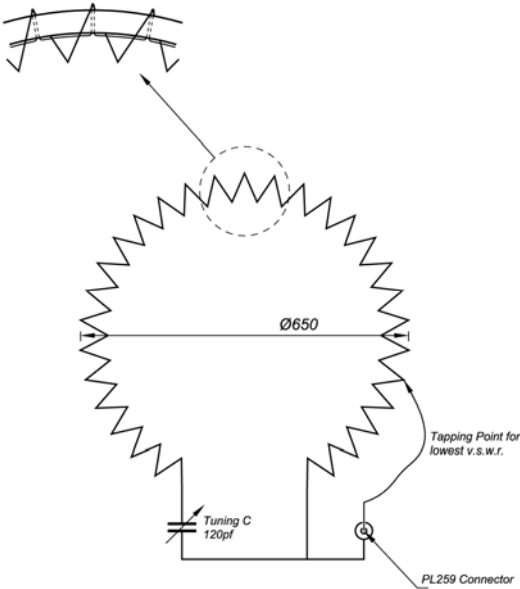
It consists of 32 turns of an original Slinky, 2042 mm of 1/2" plastic water pipe, plywood base, strong string and the most important, one 500 Pf capacitor.

Now, in my case I just happened to have a Jennings vacuum Capacitor, obtained from a boot sale in South Africa. This is the Rolls of capacitors, not for the faint hearted when buying a new one so if you are going to get one try and get it the same way I got mine. I am also told even if it has lost its vacuum you can still transmit up to 100 watts. If you are going to experiment with standard variable caps I would suggest a slow-motion drive as I found a 120 Pf did not tune down as low or as high as the 500 Pf and was very sensitive to the touch. The Slinky is available from several sources, I got mine from Maplin in Brighton.

I started off with the pipe, marked the centre and then marked 29mm either side of the centre and then 58mm 15 times either side of the centre. I then drilled 5mm holes right through the pipe in a straight line. Count 32 rings of the Slinky and cut off with a strong pair of wire snips.

Screw one side of the pipe to a suitable wood base making sure it is in the

same plane as the rest of the holes, thread the Slinky over the pipe, bend the pipe round and then screw the other side of the pipe to the wood base.



Start with tying one full ring of the Slinky to the pipe and then one on each hole, ending with a full ring again.

See the sketch for the wiring and tie down.

I took the loop around to Ken G3WYN to get a knob for the capacitor as the 6mm shaft was heavy on the fingers. I could tune the antenna up anywhere between 80 and 17 MHz with a SWR as low as 1.2:1 using my MFJ analyser. As Ken is licensed to transmit on 5Mhz he put out a call and before long he got a reply

of 5+7 from Northampton. Then Martyn GD3YUM came in also expressing a good 5+9 from the Isle of Man. We then changed to Ken's full sized dipole and to our surprise the loop was only one or two S points down on the dipole.

As we have just moved into a flat I have not been able to experiment further. But I am going to mount the capacitor properly and continue playing as it would be nice to tune it remotely.

Have a go at building this antenna. I would like to know how you guys get on. Maybe we all can benefit from your experiments.

Tom Haylock M0ZSA / ZS6SWL

Really Chasing DX

Eric G3HUA has given a different meaning to the term “chasing DX”. While most of us wait for the DX to come to us through our receivers, Eric took advantage of his long career in aviation (RAF, BOAC, Trans Globe, Laker and Virgin) to have in-person QSOs with hams all over the world. Here are his recollections:

I was complaining to my eldest son Terry that I could not manage to do very much these days except listen and talk on Amateur radio. His reply was that I was getting old and that I should just sit back and enjoy life to the full - whatever that means to a disabled 86 year old.

I got to thinking that prior to getting to my present physical state, I had a very good life, travelling all over the world and meeting many interesting people. Despite having a stroke a couple of years ago, my memory is quite good so I thought that I could share some of those memories with you. Many of the friends I made through the years are now silent keys but I am happy that some are still around.

I was first licensed as a Radio Amateur in 1951. In those days the conditions were absolutely superb and, with far fewer amateurs around, the world was my oyster with plenty of contacts always available. Because I was flying all over the world there were many occasions when I could work a station in the Far East and then visit the operator a few days later. It was even better when I got on the North Atlantic run when I would QSO in the morning and visit the next day. The first of these was Reg W3HQO. I used to QSO Reg every day that I was at home and he, knowing that I had 3 days off in New York, suggested that I take the train from Penn Station NY and he would pick me up in Philadelphia. The visit was so successful that it became a frequent occurrence. Reg had emigrated from Kidderminster



Eric (left) with Reg W3HQO

in the 30's and established a successful TV business in Philadelphia. He had become an American citizen but, was proud of his English roots, so much so, that he was the founder of the EX G Club.

Through Reg, I met Rod WA2EVH who lived in Nyack, NY. Rod came from Middlesex but fell out with his parents and went to live in the USA. Realising that it was not easy to become a US Citizen, he joined the American army, which gave him US citizenship. Ironically, his first posting after training was to UK at a base in Ruislip only 2 miles away from his parents.

Whilst talking to Reg about the next visit, a voice said "How about a visit to me?". It was Dick W1FRX who lived in a very wealthy area of Boston. We arranged that I would fly to Boston and spend 2 nights with him and his wife Bea. He met me at the airport in a gleaming brand new Buick and apologised that the interior was perhaps a little untidy, explaining that it was his wife's car. Rather cheekily I asked if HIS car was a Cadillac. He replied yes, how did you guess? His house was a mansion and I was in the guest suite with en suite facilities and a separate lounge with TV and radio available. We went out to lunch at his club where he was greeted like royalty.

In those days I put out a very potent signal to the States and contacted Steve K2CJN who lived on Long Island, and later in Chappaqua, NY. I made several visits to both locations over the years meeting Steve's wife Ellen, and their son and daughter. Their son Bob worked for Readers Digest and was sent to Australia where he so loved the country that he married an Australian girl and became an Australian citizen. Bob and his wife Joy have visited us in Lindfield and we saw them on every visit we made to Australia.

Another regular contact was Bob W8JLF who lived in Keego Harbour, Michigan with his wife Kay and 6 children. I was not on the North Atlantic at that time but did have free concessionary flights available on any BOAC route. Out of the blue Bob suggested that I send son Terry over to spend the entire summer holidays with his family. Although we had many QSO's, it was a daunting thought to send our son 4000 miles from home to people we scarcely knew. Needless to say, Terry was all for it but my then wife and I were concerned about his well-being and it took a bit of courage to agree to it. Bob assured us that he would be well looked after and would be treated like one of his own boys - and he was. Every week the boys went to their father to get their weekly pocket money and Terry was told to join the line to receive his! Terry had taken money with him but Bob did

(Continued on page 10)

(Continued from page 9)

not use any of it and it came back home with him at the end of the holiday. BOAC operated 3 flights a week to Detroit and we were on a standby basis. We were unsuccessful on the 1st flight but he got on the second OK. We rushed back to Southampton to call Bob and tell him that Terry was on his way and arranged skeds for the next day when we were told that he had arrived safely. He had a wonderful holiday and came back thoroughly Americanised (and spoiled!) He had beaten me over the Atlantic by quite a few years. Some years later my then wife and I took a 15 day holiday in the USA staying first with Steve and Ellen, going on to Reg and Gert and then finishing in Keego Harbour with Bob and Kay, returning home from Detroit.

In the 60's I spent a year in Libya where I held the call 5A3TH. It was there I met Gene and Mary-Ann Walsh.. Gene was 5A1TW and N2AA. I have met them many times at their then home in Edison, New Jersey and I am happy to say they are still alive.



When I was on the Far East route, there was little opportunity to visit amateurs en route, but some did occur.

At a radio club meeting in Southampton I met Jack VS6CL who was on home leave from Hong Kong. Almost his first words to me was that he was in Hong Kong 4 weeks ago, to which I replied that I was there 6 days ago. Through Jack I met Lyell VS6BE, Pat VS6AE and Peter VS6CC .

Through operating Jack's rig I made contact with Dave, an American Naval Commander and his wife Ev (both licenced amateurs), living in Tokyo. They took me to dinner at the Officers Club on the only occasion I met them in Tokyo. I visited them once at their home in Pennsylvania. On that occasion we were listening on 2 metres with not a signal to be heard, so Dave said call CQ using your English call sign. You can imagine the response we got!

Eric Holloway G3HUA

Eric's article will continue in the May issue.

(Sensitivity - Continued from page 5)

At this point it is worth noting that with the latest high performance radios the receivers are generally so good that the problems encountered will be with others transmitters transmitting spurious signals. More of this later, with an explanation of "Dynamic Range".

To be continued.

Chris Saunders G4ZCS

New Emcomm Software For Windows

The NarrowBand Emergency Messaging System (NBEMS) development team announced earlier this week that a Windows NBEMS software suite for beta testing is now available. NBEMS for Windows is a suite of software programs designed for point-to-point, error-free emergency messaging up to or over 100 miles distant.

According to developers Skip Teller, KH6TY and Dave Freese, W1HKJ, the NBEMS system is designed primarily for use on VHF and up, or on HF with Near Vertical Incidence Skywave (NVIS) antennas. The system uses the computer soundcard as the modem. Other than a simple interface connection between the computer and transceiver, no additional hardware is needed. Composing and sending emergency messages on NBEMS is no more difficult than sending e-mail via the Internet. All forwarding is done by stations manned by live operators on both ends who can confirm that a frequency is clear locally, or negotiate a frequency change to avoid causing interference.

The NBEMS software can also be used for daily casual communications on PSK31, PSK63, RTTY or MFSK16 and is capable of sending flawless, high resolution, passport photo-sized color images in less than 10 minutes over any path that can sustain PSK250 without excessive repeats.

Radio amateurs are invited to participate in the beta test of the NBEMS. The NBEMS suite can be downloaded for beta testing from the NBEMS Web site <<http://w1hkj.com/NBEMS/>>. Send comments and bug reports via e-mail <kh6ty@comcast.net>.

(Courtesy of ARRL)

Happiness is a Flagpole

Some time ago I had occasion to complain to the District Council that due to them building the new Town Council Offices at the side of my property, this was having an adverse effect on my wire aerial. I have a full size G5RV at 18 feet that runs parallel with the building and just 12 metres away from it. The height of the building is approx 40 feet. In discussions with them and mentioning the magic word of RAYNET, they agreed to part fund supports for another aerial. Not wanting to push my luck, I suggested that a flagpole of approximately 40 feet in height and two 25 ft scaffold poles or the like, would probably suffice. A fibreglass pole of 40 feet was going to cost approx £300-£400 and it looked as if it was unlikely to materialise.

However, due to some new developments on the promenade, the Council rang me to say that a fibreglass flagpole of 35 ft was available if I wanted it.



From Here....

Needless to say, a few days later a flagpole with internal halyard was delivered, together with two 25 ft scaffold poles. Now that most of the bad weather has passed I have had the opportunity to dig the holes and install the poles. Due to the garden being just below sea level, digging the holes was not easy as these needed to be at least 4 feet deep and the water table was just 6 inches below the surface. It was impossible to pump the water out completely as the holes filled up again quickly so it

was a matter of purchasing 35 sacks of rapid setting postmix and packing it in dry. I am pleased to say the poles survived the recent high winds without any movement at their foundations. I am now looking forward to the next stage of making up a multiband dipole or G5RV and testing it on air.

Terry Stow G0SWS



... To Here

Members' Ads

RANGER 811A Linear amplifier, in mint condition having recently had 4 new valves fitted, complete with 3 spare valves. £500 o.n.o

(The amplifier is very heavy and will have to be collected from the Haywards Heath area.)

TS 930 transceiver fitted with MC80 microphone - in good working order £200 o.n.o

Yaesu matching speaker £10.

Yaesu calibrated 150Watt Dummy Load £30.

Home Brew 75 ohm(700 watt intermittent) Dummy Load £5.

Decca 2 way coax switch £15

MFJ 6 way coax switch £30

For further information about any of the items listed above, please contact Eric Holloway G3HUA direct on 01444 484535 or via e-mail :eric.g3hua@onetel.net

Readers' Letters

Is this piracy, or deceit? I have purchased Epson Photo Ink Jet and Samsung Colour Laser printers but, although brand new, I cannot use them. Both are "chipped" in order that only their own respective ink and toners will work with them. The ink cartridges for the ink jet cost more than I paid for the printer itself. How can a few millilitres of inks, valued at just a few pence, be so charged?

Likewise, the toner powder for the Samsung costs around twice the cost price of this new printer. Again, a few grams of toner powder is very cheap. These are "consumer" items, which one has to have in order to use the printers. It is equivalent to buying a new car for say £12,000 and then having to pay £12,000, or more than the cost of the car, just to fill the tank with petrol/diesel each time.

Curry's, PC World, Dixon's, & probably many other stores, now display warning notices that one needs to buy ink and toner cartridges in order to make use of the printers.

Reg Moores G3GZT

Mid Sussex Happenings

4 April	Fox Hunt - Sue and Geoff
6 April	Kempton Park Radio Rally
11 April	Radio Night (D)
18 April	Radio Night and Table Top Sale (D)
25 April	Lecture by Chris Saunders (U)
2 May	Quiz Night (U)
9 May	Radio Night (D)
16 May	Radio Night (D)
23 May	Construction Contest (U)
30 May	Radio Night and Table Top Sale (D)
12 Dec	Christmas Dinner at Thatched Barn

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

Visitors are always Welcome

Club membership pin

Featuring the club windmill logo, in ruby to celebrate our 40 years.

Available from Chris G4ZCS.

Price £2.00 each. Plenty of stock!



From the ARRL Contester's Rate Sheet.....

“Following a query about how to sample RF in a feed line for display on an oscilloscope, I came up with this little circuit off the 'net - <http://www.qsl.net/k6ls/rfsampler.html>”. You can either use a Tee-connector to make the feed line tap or build it into a project box.”

Membership Renewal Reminder

The Society Constitution says that subscriptions must be paid no later than 31 March each year, so if you haven't paid yours for 2008 yet, now is the time to do so. Subscriptions are still £30 (£20 conc.) this year. Please contact Mike Pollock G8KMP for a renewal membership form. e-mail address is: mike.g8kmp@virgin.net or you can write to him at: 25 Meadow Lane, Burgess Hill, West Sussex RH15 9HZ

Please Note

Please note that all bills should be presented to the Treasurer for payment. Also please do not take monies owed to you from Club funds that you are holding pending passing to the Treasurer.

Many Thanks

Hon. Treasurer

Deadline

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

15 April 2008

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

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	M3RXO	01444 254728
Committee	Alan Cragg	G8YKV	01273 844511
Committee	Rob Ashman	2E0RJA	01444 232129
Committee	Phil Brown	M5BTB	
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