

Mid Sussex Amateur Radio Society  
NEWSLETTER  
March 2008

# Mid Sussex Matters



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## **FROM THE PRESIDENT'S CORNER**

There is a letter in this month's RADCOM from a new M3 operator complaining that "old timers" are not welcoming newly licensed members onto the air and ignore them when they attempt to join in nets.

I thought that this "them and us" attitude had long gone and would like to make it very clear that any member or licensed amateur is more than welcome onto any MSARS net that I operate. How else would they gain experience or improve their set-ups if no one will talk to them?

Some of the newcomers to this hobby are far more experienced than I shall ever be in the new modes now available to us and I note, for example, that we now have a D-Star digital mode to further confuse us. All of them have other hobbies and interests that are worth hearing about. We old timers might even learn something so, to any M3s reading this I'd say get on to HF quickly and work a few G3s before we've all gone. After all we're struggling on with our out of date equipment unconnected to our computers yet still manage to compete in today's modern world.

We're pleased to talk to anyone, anywhere, anytime!

Have a good month all of you.

**Ken Gibson G3WYN**

### ***On The Cover .....***

What in the world is it? See the April issue for the answer!

### **Photo Credits**

Cover, p3, p10 - GØBUX

## ***From the Chair***

The year so far is looking good with good attendances at our meetings. On 1 February John G6XTW gave a very interesting lecture on his work with a local authority, mainly looking after the environment, with emphasis on abandoned vehicles and fly tipping. His use of covert CCTV is certainly devious but if it cuts out this curse, GOOD.

On 7 March we are having the second "How I started in Amateur Radio" session. If you missed out before, here's your chance to tell us how you started. Five to ten minutes is all we're after.



G4XTW (left) explaining CCTV gear

Also on the subject of future events, our annual Construction Contest is being held on 23 May, so start to build your latest project - it could be a winner. Once again we are asking Tony G3NPF to come along to be our judge for this event (please remember no BLU-TAC).

We have a new computer in the shack (a flat screen is a possibility soon). If you have any radio related software you would like to see on this, please talk to Alan G8YKV or Rob 2E0RJA, who will see if we can download it for you.

I was asked last Friday evening what is VHF field day all about, so if you are uncertain of any of the events you see in the programme section of Mid-Sussex Matters please ask any of the committee members for an explanation, or of course any of the other members who I am sure will tell you about them.

73 Till next time

**Russell Nelson G7TMR**

## *Editorial*

Like most Americans I grew up hearing about that British phenomenon, beer and skittles. And also, like most Americans, I used to wonder if the skittles were best fried, boiled or baked. I have now lived in England for over 31 years, so I long ago learned that skittles weren't something to eat and along the way I have also learned a lot about how the two countries are "divided by a common language". (Incidentally, though that phrase is usually attributed to Winston Churchill, it was probably originated by George Bernard Shaw). After I had been listening to English English for about ten years I started compiling a list of words and phrases that were unfamiliar to American ears and today there are about 1,000 entries in my dictionary. It was no surprise to find that some of these differences related to amateur radio. You say "aerial", we say "antenna". You say "earth", we say "ground". Of course "valve" means "tube". Some people with G calls operate "top band" while W/Ks are on "160 meters". Over the last three decades there has been a gradual but undeniable mixing of the two versions of the common language, and because of the overwhelming influence of American television, most of the mixing has been flowing from west to east. One of the exceptions to this flow, in the amateur radio context, has been that most American hams (but not the populace in general) understand and often speak of the last letter of the alphabet as "zed". Ask "Q-R-Zed" on sideband and you will get calls from numerous American stations. (We are rare DX to many of them). But ham radio is remarkable for being able to permit communication between speakers of languages far more dissimilar than the two brands of English. Partly this is because we use a standardised and limited vocabulary for most of our QSOs, but even more important is the fellowship that our shared hobby engenders. And long may it flourish.

What set me off on this discourse is that, as I write it in the middle of February, I am looking forward to the Skittles Evening at end of the month. If you get to the Royal Oak before I do, order me a plate of skittles - I'll have mine fried please.

**Bob Clinton GØBUX**

# How Good is my Radio?

An occasional series by Chris, G4ZCS

## *The "Front End"*

My radio's better than yours 'cos it's got a pre-amp.

Perhaps, as this is the first of the in- depth articles of the series, we will look at the basic principles and then look at each section in greater detail.

Let's start with the "foundation level". A radio has an antenna connected to the feeder (with or without a balun), the feeder is connected to the ATU, to a meter and then it is connected to the antenna socket on the back of the radio.

At this stage I will ignore the self- contained handy radios with built-in antennas or rubber ducks as they are designed to work as a self- contained unit.

So, in to the back of the rig comes our "signal". It is accompanied by billions of other signals, buckets full of noise, and tons of interference!

How the radio separates out our "wanted" signal from all the other rubbish is what this article is about.

In a typical radio the first component encountered is a most important switch separating the transmit, from the receive circuits. This is closely followed by a switchable 20 dB attenuator (a 470  $\Omega$  resistor). The next circuit is a "band pass filter"; this section passes all the signals and noise in the general frequency band and attenuates or blocks most out of band signals. Most radios have about 6 bands, which do not necessarily coincide with the amateur bands. If you spin the dial in 'general coverage receive' mode you might be able to hear the internal relays clicking as they change between sets of filter components.

The next stage encountered is a switchable RF amplifier. This is the first amplification the signal encounters. The stage will amplify EVERYTHING it can hear to a higher level, noise, signals and a little something extra! Remember that the band pass filter should have narrowed the spectrum a bit.

The extra bit.

Every piece of electrical circuitry generates "noise". It will only stop if the component is as cold as absolute zero, (-273° C).

*(Continued on page 6)*

*(Continued from page 5)*

If you want to test this for yourself try plugging a dummy load on to the antenna socket of your rig and then winding up the gain and the “RF amps” to maximum. The roar of noise you can hear is all the electrons banging about at room temperature (+ 20° C).

If you could place the dummy load and the front end of the radio in a deep freeze at -30° C the noise would quieten down considerably. However remember that the noise from this source is wide band and will have crept through the first filters and been joined by the noise of the first stages as well.

So what happens if we add an extra “pre-amplifier” somewhere in the input circuit? It will just make all this noise (and our wanted signal), a lot louder. Surely what we really want is a louder “signal” and quieter noise. However if the above test results in only a little “hiss” then perhaps an additional amplifier stage could be beneficial as the radio might be a little short on gain anyway (a bit deaf).

There is no point in amplifying just noise, as it is of no interest to us. It is the signal that matters.

The first signal that the amplifier will hear, in addition to our wanted signal, is natural noise, whether this is QRN from lightning storms or sun flares. If these signal levels are greater than our wanted signal, then there is probably no point in going further with amplification as the radio will be unlikely to differentiate between the two.

As an aside, to help reduce the bandwidth of the incoming signals and noise, the use of a “ $\mu$  tune module” on the newer Yaesu radios, or a high Q ATU between the antenna and the input of the radio will help greatly.

In a later article we will look at the local oscillator and the mixer stage.

“Roofing filters” - do they keep the rain out, or just let the small drops in?

**Chris Saunders G4ZCS**

## **Ofcom News**

### **The British government and the Ministry of Defence will be able to share and trade valuable radio spectrum under new plans announced by the regulator Ofcom.**

The proposed new rules will free up prime spectrum currently held by public sector agencies and organisations. Any freed spectrum could be used to develop new mobile and wireless services, according to the regulator. It is estimated that the spectrum held by the public sector is worth between £3bn and £20bn. At present, public bodies use around half of the radio spectrum below 15GHz - the most sought after frequencies for mobile and broadband applications. The Ministry of Defence holds 75% of that spectrum. Key bands include 406.1-430 Mhz, 2.7-3.4Ghz and 3.4-3.6Ghz according to an Ofcom spokesperson, who said the bands had the "right properties" for future wireless applications.

### **Ofcom, police and London Boroughs take action against illegal broadcasting**

Ofcom today announced the results of joint operations across four London boroughs to take illegal radio stations off the air. Working in partnership with the London Boroughs of Hackney, Haringey, Tower Hamlets and Islington, as well as the Metropolitan Police, Ofcom's team carried out enforcement action against over 20 illegal broadcasters in these areas. Illegal broadcasters can cause interference to safety-of-life services, such as the fire brigade and air traffic control, as well as licensed broadcasters, denying listeners their choice of music and news. Illegal stations cause significant damage to rooftops, resulting in expensive repair bills at public expense. Ofcom's operation ran from 6 to 16 February and resulted in three arrests, one studio raid, the removal of 22 illegal broadcasters' transmitters and over 20 letters sent to local night clubs that have advertised events on illegal radio stations. Ofcom estimates that there are over 150 illegal stations operating in the UK, with half of those broadcasting across London and the South East. There are over thirty illegal stations across these four boroughs, making up 60% of all illegal broadcasters in North London. Ofcom is responsible for keeping radio spectrum free from interference, taking illegal stations off the air by raiding studios and seizing and disconnecting transmitters and aerials. Last year, Ofcom carried out over 900 such operations and 37 people were convicted of offences related to illegal broadcasting.

# PropNET

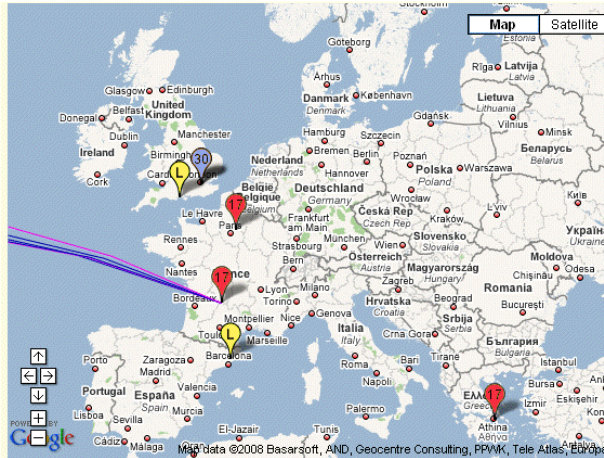
PropNET is one of the coolest Amateur Radio projects you've probably never heard of. It is a 21st century version of the tried-and-true propagation beacon system, except that the beacons are digital and the Internet is used to aggregate the data.

The "secret" of PropNET is its network of participating stations scattered throughout the world. Listening stations sniff the airwaves for PropNET beacons and automatically upload reception reports via Internet e-mail. Many of these same stations also transmit digital beacons at regular intervals. It all comes together at <http://propnet.org>

where you can see the results displayed on colored maps. There are PropNET stations operating on 30, 17, 10, 6 and 2 meters, although the 30-meter network is by far the most active. For a real treat, try clicking on the animated maps and watch as the propagation conditions change over time.

Anyone can participate in PropNET, either as a beacon station, a reporting station or both. All you need is a transceiver for your chosen band, a station computer and a sound card interface. If you already operate one of the HF digital modes, such as PSK31, you're good to go. PSK31 is the most popular Prop NET mode, although there is some VHF PropNET activity using packet radio.

To become involved as a listening station, you'll need to download and install the free *PropnetPSK* software for *Windows*, which is downloadable from the PropNET Web site. The software allows you to monitor several PSK31 beacon signals simultaneously. Whenever *PropnetPSK* decodes a valid string of beacon text, it logs the information and can display the station location on a map. Depending on how you've set up *PropnetPSK* it will also send your reports to the central database.



PropNET map of Europe on 23 February 2008

I often park my rig on the 30-meter PropNET frequency (10.139.5 MHz, USB) and just monitor for an entire day. The results are fascinating. For instance, I once logged a British station in the middle of the night when 30 meters was allegedly “dead” in my part of the world.

More fun takes place when you start actively beaconing. As stations receive and report your signals, your call sign and location appear on the PropNET Web site maps. On one occasion I dropped my output power to less than 1 W and was amazed at how many stations reported my beacons. *[ed:....in the UK you will probably need an NOV to operate an unattended beacon station.]*

You don't have to “sign up” to be a PropNET participant. You simply download the software and go. The more hams that participate, the more useful Prop NET becomes. Give it a try!

*This article by **Steve Ford WB8IMY** first appeared in the Eclectic Technology column in the March 2008 issue of QST and is reprinted here with the kind permission of the ARRL.*

### **Readers' Letters**

Thanks to Walter Blanchard G3JKV for his response to my letter in the January issue.. The answer is the one I half expected, however I tend to use the Yagi vertical not horizontal. So there must be something else as well. The reason for the balun is that the incoming signal is picked up by the antenna, and half is fed down the core of the coax, while the other half goes down the braid. Unfortunately though some goes on the inner wall of the braid, where it should be, some also goes down the outer skin of the braid, picking up more signals and noise as it does, hence the apparent out of balance problem. A balun fitted to the antenna feed point will cure this but, until I have proved it for myself, I will keep an open mind.

**Chris Saunders G4ZCS**

If you have an antenna analyzer that displays reactance, but without a positive or negative sign, Bob N7XY handed out a handy and simple tip: "Change the frequency slightly. If the reactance goes up with frequency, it is inductive. If it goes down, it is capacitive." *Thanks to the ARRL Contester's Rate Sheet*

## Emergency Communications

The club meeting on 22 February featured a visit from Robin Penn, Emergency Planning Officer for Mid-Sussex District Council. Since Robin's last visit to the club, we have conducted the emergency communications coverage test, which was reported on in the September 2007 issue. This month's meeting combined a review of this exercise with some updates from Robin.



When Robin spoke to us last year he announced an emergency exercise centred around a simulated disaster at Clayton tunnel, with participation by the emergency services and amateur radio. This exercise was cancelled at short notice owing to concerns about traffic hazards at the site. Sussex and Surrey Police did subsequently hold a hostage-crisis exercise but there was no ham radio participation in it. There is a tentative plan for an exercise this year (13 July) in which we would be invited to participate.

Robin reported on the installation of antennas at the Council headquarters and indicated the possibility of funding for amateur equipment to be permanently installed there. MSARS was asked to provide advice on what this should be.

Robin showed us excerpts from an Emergency Planning video produced by Essex County Council which discussed the Civil Contingencies Act. He also spoke about a similar production by Gloucestershire County Council. Among the issues raised by the latter video are that of accreditation of volunteers and accommodating spontaneous volunteers. MSDC is considering how to deal with these issues in our area.

A number of points were raised by the audience, including the application of 60M working to emergency communications and the need for MSARS to conduct a survey of assets (equipment and personnel) that can be used in emergency situations.

## **Top Ham At Kempton Park**

The second RSGB Top Ham Competition, sponsored by Kenwood UK and Martin Lynch, will be held at the Radio Fairs' Kempton Rally on 6 April 2008. All visitors will be given the chance to enter the competition; the first 100 entries will receive a valuable commemorative mug. The 25 people with the highest score on the multiple choice paper will be put into a raffle for a number of valuable prizes. The second stage will have more difficult questions and the six people with the best scores will be invited to take part in the final round of questions and answers. This round will be televised at the show via local ATV repeaters and onto the internet. The quiz will be hosted by Eugene Sully G0VIQ. The winner will receive the RSGB "Top Ham" Trophy and a valuable HF transceiver from Kenwood. There will also be a prize for the runner up.

## **ICOM and YAESU manuals**

Tom M0ZSA suggests "Have a look at the **N7TGB**. Nevada Travelogue & Amateur Radio web site <http://www.n7tgb.net/> This is a good site for ICOM and YAESU manuals but be careful of the jokes"

## **Solar Cycle 24 now has it's own Web site**

<http://www.solarcycle24.com> It's only a matter of time until Ol' Sol gets it's own Facebook site. We can only hope! (Thanks, Tim K3LR and the ARRL Contesters' Rate Sheet)

## **BBC Ends Shortwave Service to Europe**

The BBC World Service, which started its scratchy shortwave transmissions to listeners cut off by "desert, snow and sea" 75 years ago, ended its last English-language shortwave services in Europe on Monday 18 February. The BBC has been reducing its shortwave transmissions over the past seven years, eliminating services to North America and Australia in 2001 and South America in 2005. Last March, the BBC started reducing European transmissions, finally cutting off a transmitter that reached parts of southern Europe this year.

# KOSOVO

Kosovo declared its independence from Serbia on February 17, setting off new speculation on what this means to Amateur Radio and specifically, to the DXCC program. ARRL DXCC Manager Bill Moore, NC1L, said he understands that there are many questions about the DXCC status of Kosovo, especially concerning whether or not the new state will be added to the DXCC list.

Moore said the DXCC rules, modified in 2000 to better handle inclusion to DXCC, are clear on how additions can be made: "For inclusion in the DXCC List, certain conditions must be met. Gaining entry on the DXCC List is not contingent upon whether operation has occurred or will occur, but only upon the qualifications of the Entity."

According to Moore, adding Kosovo to the DXCC List would be considered under the "Political Entity" DXCC guidelines. The DXCC rules state that "Political Entities are those areas which are separated by reason of government or political division. They generally contain an indigenous population which is not predominantly composed of military or scientific personnel."

Kosovo, according to the DXCC rules, would then be added to the DXCC List as a Political Entity if it meets one or more of the following criteria:

- The entity is a UN Member State.
- The entity has been assigned a call sign prefix block by the ITU.
- The Entity contains a permanent population, is administered by a local government and is located at least 800 km from its parent.

New Entities satisfying one or more of the conditions above will be added to the DXCC List by administrative action as of their 'Event Date.' Kosovo will be added to the DXCC list if it becomes a member of the UN, or if it receives a prefix bloc from the ITU. "The third condition does not apply," Moore said. "The 'Event Date' will be either the date Kosovo became a UN member or it receives its prefix from the ITU. Contacts made before the Event Date will be counted as Serbia."

*Reprinted by permission from The ARRL Letter, Vol 27, No 7 (Friday, February 22, 2008)*

## Members' Ads

This is a list of items for sale; there are a lot more but we will only find them when we unpack our boxes from the storage. I am prepared to consider offers provided they are not silly.

AOR 3000A, power supply, antenna, book, as new, boxed little used  
£350.00

AOR 2002 old but in good working order £35.00

Icom IC W32A Hand held 2m / 70cm plus Desktop charger, boxed, as new  
£75.00

Icom F11S Hand Held 2 channel commercial + desktop charger £10.00

Icom IC208H head new £15.00

Ham 4 Rotator £200.00

Head Phones David Clark model HLO-30 (helicopter) £10.00

MFJ 784B DSP filter as new £65.00

Power supply 10 amp £ 15.00

Power supply 10 mp £ 10.00

Power supply 2amp £ 1.00

AS189 Active Military antenna 300KHz-30KHz (TX 15W 20 to 30MHz)  
£10.00

2m Mag mount antenna £5.00

Hustler 6BVT+17m add on (used for 3 weeks - landlord problem) £200.00

Butternut HF2V 80m and 40m £60.00

2m Cushcraft 8 element Yagi £20.00

TH3 Jr 10/15/20m Yargi 90% rebuilt like new £40.00

Electronic trainer board £5.00

**Tom M0ZSA**

**Email: [mwtomcat@btinternet.com](mailto:mwtomcat@btinternet.com)**

**Mobile: 07833922813**

# Mid Sussex Happenings

7 March	How I started in Radio (U)
14 March	Radio Night (D)
21 March	Good Friday – no meeting
28 March	Surplus Equipment Sale (U)
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!



## *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 March 2008**

## **CLUB NET TIMES**

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

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

## Mid Sussex Amateur Radio Society

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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](http://www.msars.org.uk)**

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### **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**

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