

COULSDON AMATEUR TRANSMITTING SOCIETY

G4FUR



M1FUR

CATS WHISPERS

April 2006



Affiliated to the RSGB

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CATS Committee

Chairman: Rob Cole 2E0AYT
Secretary: Andy Jackson G8JAC
Treasurer: Derek Hands G1PGS
Members: Steve Conway G7SYO
Stuart Barber G6CJR
Dave Young G8VXB
Ian Peck M3IGP

CATS Whispers Editor:

Regular Society Meetings

These are held on the second Monday in each
St. Swithun's Church Hall, Grovelands Road, Purley at 2000hrs to 2200hrs.

Society Nets

1st Saturday of Month - 1715hrs Crescenta Valley / CATS Net on Echolink
Normally via MB7IPL node on 145.2875 MHz.
Sunday mornings - 1100hrs. Call on S20 (V40) then to 145.2875MHz.
Sunday evenings - 1700hrs. 3.700 MHz +/- QRM
Wednesday evenings - 21.00hrs. Call on 70.425 MHz

CATS Website

Email:

Forthcoming Meetings

Mon 10th April – Colossus, the first computer. A tale
Mon 8th May – GB200T: Celebrating Trafalgar by Bob Treacher
Mon 12th – Test and Measurement of members' kit



CATS is Twinned with the
Crescenta Valley Radio Club
Glendale California USA www.qsl.net/cvrc

March Meeting Report

The March meeting, planned as a members' tabletop sale turned out to be a bit of a disaster. One key-holder for the hall was sick and the other had come direct from work, so there was a half hour delay while access was gained. Our thanks go to Steve G7SYO for coming out despite being ill so that we could get in. Eight members and four visitors finally made it into the hall; unfortunately, only one person had brought anything along to actually put on the tabletop so the choice was somewhat limited. We did have around half a dozen visitors that evening (two gave up and left) so overall, not one of CATS' finest hours.

CATS Activity News

CATS Visits

At the February and March meetings, those who attended were invited to express their interest in some suggested visits. The visit to the naval communications museum at **HMS Collingwood** near **Fareham**, Hants is the suggestion that has attracted the most interest so arrangements are being put in hand for this.

We also added a trip to the well-known Dunstable Downs rally on 14th May. This is easily accessible near M1 J10 and is one of the major rallies in England. However, as no-one has indicated an interest in attending, it looks as if I'm going on my own!

CATS had a presence at the recent Crystal Palace Radio & Electronics Club spring sale where membership information and past copies of *CATS Whispers* were made available. Andy G8JAC and Ian M3IGP flew the CATS flag (or would have done if it had been available) at a somewhat sparsely attended but none-the-less interesting event. Derek G6MFM paid us a welcome visit.

What's coming up

In **April** we have a really interesting talk by Ken Myers on the construction and use of the Colossus machines used at Bletchley Park for code-breaking operations during the war. Ken worked with the famous Tommy Flowers keeping what was the world's first electronic programmable computer running, and has many interesting practical stories to pass on to us. Those CATS members who have previously been to see the exhibits at Bletchley Park will find this fascinating. The latest

developments in the Enigma saga (see article below) make this a particularly timely event.

For **May**, we have a visit by well known SWL Bob Treacher and colleagues from the Cray Valley Radio Society who were behind the highly successful **GB200T** special event station project to celebrate the 200th anniversary of the battle of Trafalgar. If you've ever wondered what goes into putting on a special event station and how much work is involved, this will be the place to find out.

For **June** we have a **Test and Measurement** night when we will have some top grade professional test gear on hand to test your rig. We will be able to measure receiver sensitivity, signal to noise ratio, SINAD, squelch threshold, display accuracy etc, and for transmitters, frequency accuracy, power output (up to 400W), deviation, modulation percentage etc. If you want to do any servicing adjustments, then we have to know which pot to adjust so bring along the manual or circuit diagram. If you want to do any specific tests or test something unusual, drop a line to the secretary and we'll do our best to accommodate you. You can also enter the results in your log, which looks very good if you have a station inspection! We will also have a **valve characteristic meter** on the go so if you have any valves you're not sure about, bring 'em along!

July brings our annual DF hunt. Last year's winner G4CDY will be looking to defend his title and we expect to see some practical results from the antenna building project. No doubt we will end up in a pub somewhere as usual! (Sigh)

For **August**, Prue G4RWW has kindly offered to host the annual CATS Bar-B-Q again. This now traditional CATS event sees us relaxing in Prue's garden with BBQ, beer and people from not only CATS but also our friends in SRCC.

Membership news

Motivated possibly by their appearance in last month's membership news item, two people have decided that CATS is a worthwhile society to belong to, so we are pleased to welcome back into the fold, Andrew Maish G4ADM and Alvin Challen G6DTW who have renewed their memberships. We also welcome Dennis Noe MONDJ to CATS bringing the total to 37. Dennis lists his interests as data modes, test & measurement, and scouting. The current CATS membership list was sent to all members last month either by email or a paper copy.

Kempton Park Rally

The West London Radio and Electronics Show at Kempton Park is almost upon us and for this spring event, CATS is heavily involved again and the date is **Sunday 7th May**.

As we have done for the past three years, we will again be running the ever-popular Bring and Buy stall. This has several advantages for CATS, it brings in a very useful income from selling commissions and the name and image of CATS is widely on show at one of the larger English rallies. As always, volunteers are needed to help man the stall, taking in and listing items for sale and helping eager purchasers. As a bonus, admission for helpers is free and you can be the early bird that gets that rare worm! If a CATS member wishes to sell any radio related items on the stall, they may do so at a reduced commission rate if they help out. Even an hour or two of your time is welcome and gives other members the opportunity to enjoy the show. Please pass your name to the secretary or any committee member.

This year, your scribe has had his arm severely twisted by Terry G4CDY to present one of the "Bitesize" lectures that have been a feature of recent rallies with the chosen subject being the development of British combat radio from WW2 to the Clansman family that is slowly being replaced by modern digital net radio systems. The lectures are free to all attendees so if the green stuff fascinates you, come to the presentation.

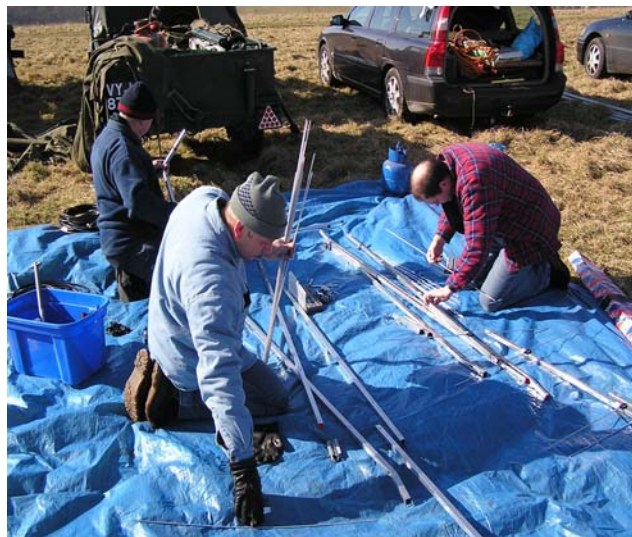
TransPONDer net news

A successful TransPONDer net was held on All Fools day, April 1st. G4CDY and G8JAC were joined on the UK side by Paul M3JXN for his first link-up across the pond using Echolink. Compared to last month's attempts, the net functioned perfectly allowing us to chat with the Crescenta club members who will be host to the CATS party going over to Glendale in June for the ARRL HF Field competition. Mark W6MW reported that there was still snow coverage over Lightning Point where the field site is located and Leah KE6MMU was able to confirm that the site has been booked with the park authorities for the event. Other CVRC members calling in included Larry AD6IZ, Mark KE6ZRP, Jim KE6URZ, Tim K6POI, and Stan W7SLP. The next net will be on **Saturday 6th May**. Why not join in?

March contest debrief

Once again the CATS fielded a contest team in what can only be described as extreme conditions.

Andy G8JAC, Paul M3JXN, Len G0GNQ, and Ian M3IGP were the first to arrive on site and gained access to the field. Shortly after, Rob 2E0AYT, Dave G8VXB and Andy G0KZT joined them. The two operating tents were soon erected along with the two antenna masts. The four beams were soon put together and with only 20 minutes to spare before the 14.00hrs start time, the 2-metre station was put onto the air. The 70cms station however was delayed because of problems with rotating the antenna and a high SWR. Various tests were made to the stack and although the SWR was still a little high, the station finally began operation. Although we started the 2-metre station with the club ICOM IC706, it was soon substituted for a Yaesu FT-847 provided by Rob 2E0AYT. This was linked to a 160 watt amplifier provided by Andy G8JAC. The 70cm station consisted of a Kenwood TS-2000 provided by Andy G0KZT running at 50 watts.



Antenna assembly under way on the Saturday morning

RF conditions were found to be poor for both bands. While the 2-metre operators that mainly consisted of Dave G8VXB, Rob 2E0AYT, Mike M1CCF, Andy G8JAC and Ian M3IGP got to grips with the computer logging software, Paul M3JXN and myself settled into the operating of the 70cms station using the old paper logging and check-log. I was expecting the band to be quiet, but not as quiet as we found. We were assisted with my CD player "auto-caller" that I rigged up that repeated a "CQ contest" call every 18 seconds, but a method of pulling

microphone leads out and changing over to a fist microphone had to be perfected. Still, it saved our voices so it was a minor inconvenience. The site was also visited by James G0SDB, Cliff G6FPQ and Derek G6MFM during the weekend to lend some very welcome moral support.



Paul M3JXN operating the 70cm station. Note the CD "Auto-CQ"

Lunch time was self-messing and in the evening a local Chinese restaurant was contacted for a takeaway meal with those on site chipping in towards the bill. This gave me an opportunity to have a ride in Paul's Austin Champ, which I should add was really fun (although a heater would have been nice) and a great experience when we went to collect the food!



The 2m operating position with mike M1CCF in QSO

The over-night crew consisting of Len, Andy (JAC) and Paul settled in. Without this dedication we would not have been able to do this 24 hour contest. Although it had been cold

during the day, nothing could have prepared them for the -5 °C temperatures over-night. We should however be grateful to "The Weather Gods" as we were spared rain/sleet or even snow for the whole 24 hours. Daytime brought mostly sunshine, which actually felt warm when the bitter wind was not blowing.

The Sunday's operating was still pretty dismal with very low levels of activity. However, the 2-metre station benefited from some good openings to France, Belgium, The Netherlands and Germany. As you can see in the table below, some cumulative distances weighed against low numbers of contacts helped bump up the score. The best distance for 2-metres was DG5CST/P in JO43IU at a distance of 655 Km (the furthest I can recall for distance for CATS VHF contesting) and for 70cms was DR5A in JO30GM at a distance of 470 Km.



Finally, at 1400hrs, the stations closed and the stations were soon dismantled with site closure at about 1515hrs.

Overall, I think I can say that everybody appeared to enjoy the event. We are still far from being competitive against the other participants, but the experience of setting up the station and keeping it running greatly outweighs this. Our entry has been submitted and the result is eagerly awaited.

I would like to thank everyone for their support, however, as usual, there are members (and in this case a non-member) who deserve a special vote of thanks. I would like to thank Len G0GNQ for providing the cooking facilities and along with Ian M3IGP for securing the site from the farmer; to Andy G8JAC along with Paul M3JXN for providing the additional tent and military style lighting and finally to John Stockley G8MNY for lending the Society his 2.3Kw generator as the CATS one is still sick.

TIME BAND	QSO 144 MHZ	POINTS Km	QSO 432 MHZ	POINTS Km
14:00 - 14:59	8	555	NIL	NIL
15:00 - 15:59	6	312	9	706
16:00 - 16:59	7	793	9	647
17:00 - 17:59	7	2135	3	261
18:00 - 18:59	6	1182	1	28
19:00 - 19:59	6	2135	1	93
20:00 - 20:59	7	2501	1	54
21:00 - 21:59	4	385	3	353
22:00 - 22:59	5	1558	1	232
23:00 - 23:59	4	2221	NIL	NIL
08:00 - 08:59	3	1321	NIL	NIL
09:00 - 09:59	3	1046	3	512
10:00 - 10:59	3	190	NIL	NIL
11:00 - 11:59	1	219	6	409
12:00 - 12:59	NIL	NIL	4	228
13:00 - 13:59	2	39	4	359
Totals	72	16582	45	3882

So, what next? Which contests would you like to take part in for the rest of the year? If we wish to consider VHF NFD (1st/2nd July 24hr), interest need to be made soon as we will need to choose an alternative site (the one we use is used by SRCC) and this site will need to be registered prior to the beginning of the contest. Crossways Farm on top of Reigate Hill (site previously used by CATS in the 1980's and early 1990's) should still be available.

Others we could consider are 20th/21st May 144 MHz (24hr), 2nd/3rd September 144 MHz Trophy (24hrs). I have not touched on HF contests. The only one we have firm in our diary's is 5th/6th August for the 144 MHz and 432 MHz Low power contests that are 6 and 4 hours in duration respectively that are to take place at the Woldingham site. Just let me know!

Andy G0KZT Contests secretary



The 2 x 2m stacked Yagis towering over the CATS tent



Steve G7SYO taking a turn on the 2m station



No such thing as cold weather, only the wrong clothing

Contest Callsigns & Licensing Issues

While putting together the entry for our March contesting, I seem to have found an anomaly with the VHF General Rules. I queried whether we should have used the same callsign on both 144 and 432 MHz and after taking advice from several well respected contesters, I received several interesting replies.

I said: *"I am acting as Contest Secretary for the Coulsdon Amateur Transmitting Society and I am a little confused over the rules/entry for the 144/432 MHz contest. We have used two separate calls for the bands (G4FUR/P for 2m and M1FUR/P for 70cms) but I heard stations, who I believe were in the open multi-operator section using the same call for both. I have re-read the rules and I cannot determine whether we should have used the same call for both bands, switching the log over on the computer (therefore not operating the two bands separately). We use Super Duper for our contesting software. If I can use two callsigns for the same contest, how do I incorporate the two separate logs I have into one entry?"*

The following reply was returned:

"In multi-band contests, separate log files and cover sheets are needed for each band so your question is irrelevant; but I have to admit, that doesn't seem to be clear from the rules and I'll contact the VHFCC to point it out. Individual bands are adjudicated separately, as per rule 5c, so please don't submit a combined log as it'll give the adjudicator a headache. The decision on whether to use different callsigns, as you did, or the same as some contest groups do, is entirely yours. When using the same callsign on more than one band, rule 2e applies " Where the same callsign is used on more than one band, add some reference to the band, e.g. G9XYZ144.LOG. " If it's relevant please add further details as a summary sheet (AFS & VHF NFD) or by way of the accompanying e-mail subject header e.g. "Coulsdon Amateur Radio Society Multi-operator section (or section M) entry to March 144/432MHz contest" and the adjudicator should pick that up."

Further, and as a result of that, I received the following reply from Lee Volante G0MTN who is a VHFCC Committee member.

"If you wanted to you could have used the same callsign on both bands. For VHF NFD, some groups use the same callsign on 4 or 5 bands at once. There are no legality problems as you can transmit on several bands at once and not

violate any licence conditions. Also, the other entrants might find it easier if you use the same callsign. For example, if you are on 2m speaking to someone, and you agree to try 70cms, it's easier to confirm an 'existing' callsign in the noise than a new one. Or someone when tuning around one band might recognise your callsign, or part of your callsign, from a QSO on the other band, and then know to turn his beam in the right direction. In your case, as both calls ended FUR/P I'm sure most folks would have realised you were the same group. I did the same at University in this contest as G3KMI and G8KMI."

Of course, this raised a new issue. Can I operate, at the same time, the same callsign on different bands? I dug out my BR68 booklet and could find no reference to whether I can or not. I can see one potential problem however. How can you write up a log from two separate computer logs, transmitting potentially at the same time for the single callsign use? It is likely that the two (or more) stations could be located within different rooms/tents etc. For the last 22 years since I have held a licence, I have believed that I cannot transmit with the same callsign on different bands at the same time. So did the regulations change without me spotting it or have I been wrong all those years?. I would welcome comments and feedback on this licensing issue.

Andy Briers G0KZT

International Marconi Day



The 19th International Marconi Day takes place on 22 April.

Organised by Cornish Radio Amateur Club members, the event celebrates the life of the man widely credited with being the father of radio. Certificates will be made available to amateurs or short wave listeners for contacting or hearing a requisite number of award stations. The award stations will operate from sites with a historical connection with Guglielmo Marconi.

Enigma; Still a puzzle after 60 years

Our April visit from someone who has first-hand knowledge of the project to break Enigma coded messages during the war is very timely because of a project being run to use modern distributed processing techniques to break previously unbroken messages.

The M4 Message Breaking Project *, started by Stefan Kraus, a German violinist and amateur cryptographer, in January, took on three messages that had been intercepted by British listeners during WWII, but never cracked by the famous cryptology facility at Bletchley Park. The code breakers at Bletchley used a combination of human intelligence, guesswork, and elementary computing, called "bombes" to decipher messages.

At various times, Bletchley Park could read anything from none to virtually all Enigma-ciphered messages to and from U-boats at sea, which was vital information needed to protect Atlantic convoys and in locating and sinking the submarines.

The three messages were originally enciphered using the 4-rotor variant of the Enigma employed by the Kriegsmarine and used by the U-boat fleet from early 1942.



A 4-rotor Enigma machine as used by the Kriegsmarine.

The original Enigma was designed in the 1920s and was a machine that relied on a series of user-set rotors and an accompanying plugboard to encrypt text messages. The complexity of the Enigma system convinced German military and naval leaders that the cipher was essentially unbreakable by enemy cryptanalysts. For the first years of the war, the German military was primarily equipped with the three-rotor model (M3) Enigma, which was capable of producing more than 150 thousand trillion variations of a single character. Later developments added a fourth rotor (the so-called M4 version) giving over 92,579,782,159,868,838,064,000 (92 septillion) possible *encipherments*, or variations to each character.

In January this year, Kraus's Web site posted Unix and Windows versions of an open-source client that runs in the background on each machine – a similar concept to the well-known SETI project where the message-breaking chore was broken into small pieces, then parcelled out to individual machines that had installed the software to run in the background using "idle" time. On Feb. 20, Kraus announced that the first message had been broken. What had been determined was not the actual text of the message, but the key to obtaining it – the crucial setting of the Enigma's plugboard and the start positions of the four rotors. Once that was known, the decipherment could be made.

The original enciphered message was transmitted on 25 November 1942 in 5-letter groups:

NCZVW USXPN YMINH ZXMQR SFWXW
LKJAH SHNMC OCCAK UQPMK CSMHK
SEINJ USBLK IOSXC KUBHM LLXCS
JUSRR DVKOH ULXWC CBGVL IYXEO
AHXRH KKFVD REWEZ LXOBA FGYUJ
QUKGR TVUKA MEURB VEKSU HHVOY
HABCJ WMAKL FKLMY FVNRI ZRVVR
TKOFD ANJMO LBGFF LEOPR GTFLV
RHOWO PBEKV WMUQF MPWPA RMFHA
GKXII BG

After deciphering and re-assembly into German language, the message read:

"J T 1132/19 Inhalt: Bei Angriff unter Wasser gedrückt. Wabos. Letzter Gegnerstand 0830 Uhr AJ 9863, 220 Grad, 8 sm. Stosse nach. 14 mb. fällt, *NO* 4, Sicht 10. Looks"

This translates into English as:

"F T 1132/19 contents: Forced to submerge during attack. Depth charges. Last enemy position 0830h AJ 9863, [course] 220 degrees, [speed] 8 knots. [I am] following [the enemy]. [barometer] falls 14 mb, [wind] nor-nor-east, [force] 4, visibility 10 [nautical miles]. Looks"

Kapitänleutnant Hartwig Looks was the captain of U-264. Born on June 27 1917 in Flensburg, at the age of 25, he took command of U-264, a type VIIC boat, built in Bremen in 1941. Between November 1942 and February 1944, U-264 sailed on six patrols operating from the U-boat harbour in St-Nazaire, France during which it sank three merchant ships. On 19 February 1944, U-264 was sunk by a depth charge attack by two British ships, HMS Woodpecker and HMS Starling, and Looks was among 52 crew that survived and were taken prisoner until the end of the war. In the 1980s Looks appeared in the *World At War* television series relating his experiences. U-264 was one of 268 type VIIC boats and was the type featured in the *Das Boot* television drama about life on a wartime U-boat.



A type VIIC U-boat.

On 7th March this year, the second of the messages was successfully broken. This was a message transmitted in November 1942 from U-632, also in the Atlantic. The raw code sent was:

TMKF NWZX FFII YXUT IHWM DHXI FZEQ
VKDV MQSW BQND YOZF TIWM JHXH YRPA
CZUG RREM VPAN WXGT KTHN RLVH KZPG
MNMV SECV CKHO INPL HHPV PXKM BHOK
CCPD PEVX VVHO ZZQB IYIE OUSE ZNHJ
KWHY DAGT XDJD JKJP KCSD SUZT QCXJ
DVLP AMGQ KKSH PHVK SVPC BUWZ FIZP
FUUP

In German, the message reads:

*Ausgang FT. 0246/21/203: Auf Geleitkurs
55° nichts gefunden, marschiere befohlenes Qu.
Standort Marqu. AJ3995. SO 4, See 3,
10/10 bedeckt, 28 mb steigend, Nebel, Sicht 1
sm. Schroeder*

The English translation:

Outgoing Radio Signal 0246/21/203: Found nothing on convoy's course 55°, [I am] moving to the ordered [naval] square. Position naval square AJ3995. [wind] south-east [force] 4, sea [state] 3, 10/10 cloudy, [barometer] 28 mb [and] rising, fog, visibility 1 nautical mile. Schroeder

U-623 was sunk on 21st February 1943 during its second combat patrol by a Royal Air Force B24 Liberator bomber from 120 Sqn, which dropped six depth charges over the U-boat which was slow to submerge. All hands on the U-623 were lost, including its captain, Oblt. Hermann Schröder, 31, who had sent the message three months earlier.

At the time of writing, a third message remains to be broken by the project however there are many thousands of un-decrypted messages available in the Public Record office for people who like a challenge.

* The website of the M4 project is at: http://www.bytereef.org/m4_project.html and there are links to many other interesting related sites.

Local Repeater News

GB30K (JO01BI) is changing frequency on 7th April. It is changing to 145.7125MHz output (usual -600khz input with current CTCSS tone G – 103.5Hz). It is being moved because of co-channel interference. Info from Tony G1HIG with thanks to James G0SDB.

GB3WS (IO91WB, Crawley Down) Now uses CTCSS access and requires tone E - 88.5Hz .

We hear rumours about the return to the air of the much-missed 70cm repeater GB3NS that formerly operated from Banstead.

Fancy your own Enigma?

You can get almost anything on eBay, but you knew that, didn't you? Yes, even an Enigma machine. Listed just this month (March) under item No. 6265092168 is what is claimed to be an original "Enigma 3 Walzen Chiffriermaschine Chipper Weltkrieg 1941" or 3-rotor Enigma dating from 1941.



Mind you, an exceptionally well-stocked wallet is essential, this particular machine being sold for an eye-watering £38,420 and attracting 61 bids. This Enigma had apparently surfaced from a deceased's estate in Germany and may be one of those things that were tucked away after the war that now have a value far in excess of what was imagined at the time. It may well be worthwhile checking out granddad's loft!

Sunspots

Those who remember the good old days when you could work across the Atlantic with 10 Watts on 10m to a bent coat hanger will be interested in new scientific predictions.

A new computer model suggests the next solar cycle will be more active than the previous one, potentially spawning magnetic storms that will be more disruptive to communication systems on Earth.

The next sunspot cycle will be between 30 percent to 50 percent more intense than the last one, scientists have recently reported. The cycle will also begin a year later than expected, in late 2007 or early 2008, and peak around 2012, according to Mausumi Dikpati of the National Center for Atmospheric Research in Boulder, Colorado. The new prediction is at odds with previous forecasts, which suggested that the intensity of the next solar cycle would be measurably smaller.

Accurately predicting the intensity of the sunspot cycle, which occurs about every 11 years, allows scientists to anticipate solar storms. They are caused by solar flares, or giant eruptions that burst from the surface of the sun. Solar storms, which eject billions of tons of plasma and charged particles into space, can produce dazzling northern lights, but also disrupt power lines, radio transmissions and satellite communication.

As we know, the last solar cycle peak was in 2001 during which, solar storms caused extreme radio blackouts in the Pacific. For decades, despite detailed observation of the solar cycle and appearance of sunspots, it has been impossible to accurately predict the intensity or timing of solar storms, which increase as the number of sunspots increases. Dikpati, of the National Center for Atmospheric Research, said her team tested the new computer model using previous solar cycle data and had 98 percent accuracy.

David Hathaway, a solar astronomer with NASA's Marshall Space Flight Center in Huntsville, Alabama, does not doubt that the next sunspot cycle will be stronger than the previous one, but said his own research suggests that the next cycle will commence late this year -- earlier than Dikpati predicted.

Those members interested in the predictions can learn more at

<http://www.ucar.edu/news/releases/2006/sunspot.shtml>

FIREPOWER

THE ROYAL ARTILLERY MUSEUM

Who or what is Firepower? The answer? It's the name of the Museum of the Royal Regiment of Artillery located at the former Royal Arsenal site at Woolwich in SE London (free public car parking available or five minutes walk from BR Station). The Museum houses a comprehensive display of guns and artillery memorabilia through the ages, and is, of course, also the location for an existing Amateur Radio Station, call sign **GB2RA**.

This special event call sign will be operational between 8th to 17th April 2006. A special QSL card will be available and cards for "eyeball" contacts at any time. We would welcome your help with running the station or just call in and say hello. There will be free entry to the Museum for those who can come and spare the time to help; we plan operation every day in the school holidays.

Watch out in June for a really special call - **GB150VC** (Victoria Cross) from the same location to mark the 150th anniversary of the first award of the ultimate recognition for gallantry in the face of the enemy.



The museum is the official museum of the Royal Artillery and contains many examples of artillery guns and equipment covering 600 years of artillery history from the invention of gunpowder by the Chinese to the present day. And where better to put this unique collection than in Woolwich, home of the Royal Artillery for more than two centuries, and also on the site of the Woolwich Arsenal where almost anything

explosive needed by the Navy, Army or the Air Force was manufactured from 1671 until closure in 1994. Countless millions of rounds of ammunition bearing the famous **R[↑]L** trademark of Royal Laboratories were made there.



More details from:
Mike and Lawrie
M1CCF & G4FAA
020 8654 2582
michaelandsheila@tiscali.co.uk

For Sale & Wants

FOR SALE

Slim Jim Antennas. 144 – 146 MHz,
3-5 metres co-ax with BNC plug supplied.
VSWR 1.15:1 or better across the whole band.
£15 each.

430 – 440MHz Slim Jims, 1.3 :1 or better
across 10 MHz. With co-ax & plug £13 each.
Other frequencies 144 MHz and up made to
order.

Crystals – loads available, 0.5 to 70 MHz,
various holder styles. Let me know what
frequencies you need.

Mad Frank G3ZMF

☎ 01737 218463 (weekends)
01483 229062 (work 08.00 – 16.00)
07881 974952 (mobile)

WANTED

Older-style tabletop rack cabinet to accept a 19
inch rack panel 10½ ins (6U) high and with 15
inch depth.

Andy G8JAC
g8jac@btinternet.com

☎ 020 8651 2727

Other Club News & Contact Information

BROMLEY & DISTRICT ARS

Website – www.bdars.org.uk

Email bdars-news@talk21.com

3rd Tuesday at Victory Social Club,
Kechill Gardens, Hayes, Kent
7-30pm for 8pm

18 April - Quiz Night by Richard G8ITB

The Crystal Palace Radio and Electronics Club

Meets on 1st Friday of every month at
7.30pm at All Saints Church Parish
Rooms, Beulah Hill.

Club Net – Wednesdays 2000hrs
145.525 MHz

www.gsl.net/g30ou/

7th April – G3FZL memorial lecture:

Planning law for beginners - Jo Tansley

CRAWLEY ARC

www.carc.org.uk

Club Nets –

Tuesdays 2000hrs 145.550 MHz

Fridays 1900hrs 1.970 MHz

Every Wednesday at Hut 18 Tilgate
Forest Recreational Centre, Tilgate
Forest, Crawley from 7-30pm, and
Sundays, 10.30 until 13.00.

26th April - Internet Brains Trust - The
expert's overview & your chance to
catch up with all that is happening.
Mike G0VYN & Stewart G3YSX

DORKING & District RS

Club Nets –

Sunday 0815hrs 3.770 Mhz

2030hrs 144.750 Mhz

Meetings are held at the Friends
Meeting House, Butterhill, South Street
Dorking at 1930hrs.

HORSHAM ARC

Club Nets –

Saturdays 2130hrs 144.725MHz

Sundays 1000hrs 3.722 MHz

Meetings: 1st Thursday at The Guide
Hall, Denne Road, Horsham.

Latest news – www.harc.org.uk

MID SUSSEX ARS

Club Nets –

Sundays 0800hrs 3.740 MHz

Sundays 1100hrs 145.350 MHz

Wednesdays 2000hrs 145.350 MHz

Daily 1330hrs 21.330 MHz

Every Friday at Cyprus Hall, Cyprus
Road, Burgess Hill West Sussex for
7.45pm

Info – <http://www.msars.co.uk/>

MITCHAM & DISTRICT ARS

(G3HFY) – Last Wednesday of each
month 1930hrs at ATC HQ,
Commonside West, Mitcham.

Details Mike Knott G0WCR

Tele: 020 8764 4716

REIGATE ATS

Club Net –

Thursdays 2000hrs 145.500 MHz

Sundays 2000hrs 3.740 – 3.760 MHz

Website www.gsl.net/rats

Email rats@gsl.net

3rd Tuesday at RNIB Redhill College,
Philanthropic Road, Redhill for 7-30pm

SRCC

Ray Howells G4FFY 020 8644 7599

Club Nets –

Sunday 0930hrs 29.111 MHz

Friday 2030hrs 144.325 MHz

Thursday 1900hrs 145.500 MHz

Website – www.g3src.org.uk

Meetings: 1st & 3rd Mondays at T.S.

Terra Nova, 34 The Waldrons, South
Croydon 7.45pm for 8pm

3rd April – AGM

17 April – Fix it & move-it-on clinic.

SUTTON & CHEAM RS

John Puttock G0BWV 020 8644 1614

Club Nets –

Monday 2000hrs 145.500 MHz

Tuesday 1030hrs 3.700 MHz

Tuesday 1500hrs 144.300 MHz

Friday 1100hrs 433.500 Mhz

Saturday 1100hrs 3.700 MHz

Saturday 1200hrs 145.500 Mhz

Website – www.scrs.org.uk

3rd Thursday at Sutton United Football Club, The Borough Sports Ground, Gander Green Lane, Sutton 7-30pm for 8pm

20th April – SSETI Express - lessons learned By Dave Bowman G0MRF

18th May – AGM & Construction contest.

THAMES VALLEY A.R.T.S.

Trevor Farris M0CDB 013 7245 767

Club Net Only – G3TVS

Saturdays 1400hrs on 40m

7.070 – 7.085 MHz

WIMBLEDON & DARS

Website – www.gx3wim.org.uk

Club Net –

Mondays 2045hrs 145.500 MHz

2nd & last Friday of each month at

Martin Way Methodist Church, Buckleigh Avenue, Merton Park SW20. 7.30pm for 8pm.

Note: New location.

7th April – Surplus equipment sale

28th April - Club Quiz Night

Special Event Stations

Castles and Stately Homes On The Air GB0TOL will be active from The Tower of London and GB8CC from Conisbrough Castle over the third weekend in June.

More info available at: <http://www.cashota.org>

Local Rally & Event Calendar

Dates for your diary:

7 May - West London Electronics Show, Kempton Park (Radiofairs). **Note revised date. CATS participation in this event.**

14 May – Dunstable Downs rally.

18th June - The Newbury and District ARS Boot Sale.

16 July - Mc Michael Rally, Reading RFC, Sonning, Berks.

13th August - Flight Refuelling ARS rally, Wimbourne, Dorset.

8/9 September – Leicester Amateur Radio Show, Donnington Park.

15th October – Rusty Radios rally, Cottered village hall, Nr Stevenage, Herts.

12th November - West London Electronics Show, Kempton Park (Radiofairs). **Note revised date. Radcom is still carrying an incorrect date for this event.**

19th November – CATS Bazaar. Our well-known and regarded autumn amateur radio event. This year bigger and better than ever!

International:

May 19 – 21 – Dayton Hamvention Dayton Ohio USA

June 23 – 25 International Radio Amateur Exhibition, Friedrichshafen, Germany.

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