MARL

Magazine by MARL

For Maltese and Gozitan Radio Amateurs

Number 11

December 2006

Smoking is prohibited

at the Centre

From the Editor

Friends,
I welcome you again for another edition of this magazine for December 2006, which is the 11th edition in this series.

I start by informing you that inadvertently in my last editorial, I forgot to mention the very useful contribution made by our secretary, Ivan, 9H1PI.

You should know that on the 10 Ghz issue, Ivan personally made a substantial number of telephone calls, both on fixed and mobile lines.

Apart from this, he made an objection even before the committee met, worked for a whole week on this issue, had to take two days personal leave to talk to the MCA, went with Mansweto to give a letter by hand to One Productions in view of the ugency of the issue, as well as sending a substantial number of e-mails and letters and kept everyone updated.

I also bring to your attention that Ivan went to Switzerland last year as MARL representative for the Conference that was held in Davos, and therefore we thank him for his useful work for which he also had to take leave and make personal expenses.

I have no doubt that we should thank Ivan for his useful work, and I am certain that if he was angry because I forgot to mention his useful work, he has now started to smile again because I have given him his due credit.

Don't forget that the secretary of every committee has a lot of work to do because he has to take care of a lot of things.

I also remind you that were it not for Stanley, 9H1LO, who found the MCA notice, we would not have known about it and the original frequencies would have been allocated because no objections would have been made.

There were other persons who worked so that we can have this success, and thanks also goes to them.

That's why everyone should have a look at the MCA website so that if tehre is any notice which would affect radio amateurs, someone would notice it and tell the committee.

In fact, there was another notice by the Malta Communications Authority about the use of the radio spectrum.

One can download it from the Authority's webpage and make his/her suggestions because the time limit is 20 December. The MCA webpage address is
www.mca.org.mt

I don't want to forget to thank Karmenu 9H1AQ, Duminku 9H1M, and Paul 9H1JT for their patience to teach new radio amateurs.

Thanks also to those who in one way or another help our Society for the good of Maltese and Gozitan radio amateurs.

Finally, personally and on behalf of th committee we wish you a merry Christmas and a happy, blessed and peaceful New Year.

Lawrence 9H1AV/9H9MHR


dB's

Today, in the licence as well as in books and periodicals, one finds that the strength of transmitters is given dBw or dBm instead of watts.

Apart from this, one finds that this system is used a lot because it is simple and easier when one is speaking about how much the carrier and sideband that we don't want in transmissions are suppressed.

It is also used so that one would know or show how un-required or undesired signals are reduced when measured relative to the maximum output of the transmitter.

Normally, these calculations are based on a 50 ohm system which is the impedance that the receiver or transmitter are supposed to have today, although they may also be made for other impedances or resistance.

The important thing is that all calculations are made on the same common system impedance or resistance, because otherwise they would mean nothing.

Therefore, today I thought that to make it easier for you when you are making calculations based on 50 ohms systems, I give you a few tables about the levels in dB's of voltage rms, peak to peak voltage, and the relative strength in watts relative to 1 milliwatt into a resistance of 50 ohms.

These tables will be in steps of 1 dB. Remember that because 1 milliwatt is the reference, less than 1 milliwatt will be minus while more will be plus.

Be careful for what is written n the heading of each table, that is whether it is in watts, microwatts oro nanawatts, volts, millivolts or microvolts, so that you don't make a mistake.

Note that in the first table where there are 1000 microwatts, it is equivalent to 1 milliwatt.

I hope that you find these tables useful instead of having to trouble your mind.

I should tell you that because the number of figures after the decimal point, if you work them with the formula you will not tally exactly.

However, these will be within the measuring equipment tolerance and are not so different so as to make any practical difference.

Table 1

The power in this Table is in microweatts, that is, 1 part in one million of a watt, or

$$\frac{1}{1{,}000{,}000}$$

dBm	Power	Millivolts		
dBm	uwatts	rms	Peak	pp
0	1000	224	315.5	631
-1	794	200	281	562
-2	631	178	250.5	501
-3	500	158	223.5	447
-4	400	141	199	398
-5	317	126	177.5	355
-6	251	112	158	316
-7	200	100	141	282
-8	158	89.1	125.5	251
-9	126	79.4	112	224
-10	100	70.8	100	200
-11	79.4	63.1	89	178
-12	63.1	56.2	79	158
-13	50	50.1	70.5	141
-14	40	44.7	63	126
-15	31.7	39.8	56	112
-16	25.1	35.5	50	100
-17	20	31.6	44.55	89.1
-18	15.8	28.2	39.7	79.4
-19	12.6	25.1	35.4	70.8
-20	10	22.4	31.55	63.1
-21	7.94	20	28.1	56.2
-22	6.31	17.8	25.05	50.1

-23	5	15.8	22.35	44.7
-24	4	14.1	19.9	39.8
-25	3.17	12.6	17.75	35.5
-26	2.51	11.2	15.8	31.6
-27	2	10	14.1	28.2
-28	1.58	8.91	12.55	25.1
-29	1.26	7.94	11.2	22.4
-30	1	7.08	10	20

Table 2

In table 2 notice that the strength is measured in nanowatts to keep the figures as big as possible.

Remember that 1000 nanowatts are 1 microwatt, that is equivalent to 1 part in 0ne thousand million.

$$\frac{1}{1{,}000{,}000{,}000}$$

Also note that from - 47 dBm, the rms voltage becomes part of a millivolt, that is a microvolt or 1 part of one millionth of a volt or

$$\frac{1}{1{,}000{,}000}$$

To take an example, - 48 dBm are **.891 millivolts** jew **891 microvolts**.

dBm	Power	Millivolts		
dBm	nwatts	rms	peak	pp
-31	794	6.31	8.9	17.8
-32	631	5.62	7.9	15.8
-33	500	5.01	7.05	14.1
-34	400	4.47	6.3	12.6
-35	317	3.98	5.6	11.2
-36	251	3.55	5	10
-37	200	3.16	4.455	8.91
-38	158	2.82	3.452	7.94
-39	126	2.51	3.54	7.08
-40	100	2.24	3.155	6.31
-41	79.4	2	2.81	5.62
-42	63.1	1.78	2.505	5.01
-43	50	1.57	2.285	4.57
-44	40	1.41	1.99	3.98
-45	31.7	1.26	1.775	3.55
-46	25.1	1.12	1.58	3.16
-47	20	1	1.41	2.82
-48	15.8	.891	1.255	2.51
-49	12.6	.796	1.12	2.24
-50	10	.708	1	2
-51	8	.633	.895	1.79
-52	6.3	.561	.793	1.586
-53	5	.5	.354	.707
-54	4	.446	.63	1.26
-55	3.17	.4	.567	1.12
-56	2.51	.35	.5	1
-57	2	.32	.45	.9
-58	1.58	.28	.4	.8
-59	1.26	.25	.355	.71
-60	1	.223	.32	.63

That which is normally taken to be an S9 signal is equivalent to,

dBm	Power	Voltage		
dBm	pwatts	microvolts		
		rms	peak	pp
-73	50	50	70.5	141

Note that the power is measured in picowatts and no longer in microwatts. Picowatt is equivalent to one part in one million million, that is,

$$\frac{1}{1{,}000{,}000{,}000{,}000}$$

This measurement started being used in the early 40's, when radio manufacturers had agreed about it, although one finds variations between them.

Also remember that every one point increase in signal strength, to kae an example, from S8 to S9, the difference should be 6 dB's, that is the person had increased the transmitter power by 4 times.

Above S9, the signal indicators are marked every 10 dB's, that is, as if one had increased the transmitter power by 10 times.

Remember that if you double the transmitter power, whoever is receiving would barely notice the difference or notes a very small difference.

Let's now go to the tables that are more than 1 milliwatt, that is + dBm.

Table 3

In Table number 3,note that the last column where there is + 4 dBm id equal to 1000 millivolts.

This is 1 volt, while all the following figures in the same column are all in **VOLTS**.

Also note that from + 10 dBm, the figures in the fourth column also change to **VOLTS**, while the same happens in the third column from +13 dBm.

dBm	Power	Millivolts		
dBm	mwatts	rms	peak	pp
0	1	224	315.5	631
+1	1.26	251	354	708
+2	1.58	282	397	794
+3	2	316	445.5	891
+4	2.51	355	500	1000
+5	3.17	398	.56	1.12
+6	4	447	.63	1.26
+7	5	501	.705	1.41
+8	6.31	562	.79	1.58
+9	7.94	631	.89	1.78
+10	10	708	1	2
+11	12.6	794	1.12	2.24
+12	15.8	891	1.255	2.51
+13	20	1	1.41	2.82
+14	25.1	1.12	1.58	3.16
+15	31.7	1.26	1.775	3.55
+16	40	1.41	1.99	3.98
+17	50	1.58	2.235	4.47
+18	63.1	1.78	2.505	5.01
+19	79.4	2	2.81	5.62
+20	100	2.24	3.155	6.31
+21	126	2.51	3.54	7.08
+22	158	2.82	3.97	7.94
+23	200	3.16	4.455	8.91
+24	251	3.55	5	10
+25	317	3.98	5.6	11.2
+26	400	4.47	6.3	12.6
+27	500	5.01	7.05	14.1
+28	631	5.62	7.9	15.8
+29	794	6.31	8.9	17.8

Table 4

Note that +30 dBm, the power figure in the second column is 1 Watt. Every figure in this column after +30 dBm is in **WATTS**.

This is because, if you remember, whenever there is a 10 dB difference, the transmitter power is increased by 10 times.

Therefore, +10 dBs you would have increased power by 10 times, +20 dBs you would have increased power by 100 times (10 x 10 = 100), while +30 dBs you would have increased power by 1000 times (10 x 10 x 10 = 1000).

The same happens when you would be reducing instead of increasing power. Every – 10 dBs you would be decreasing power by 10 times.

The figures in the third, fourth and fifth columns are VOLTS RMS, Peak, and Peak to Peak respectively.

dBm	Power		Volts	
dBm	Watts	RMS	Peak	PP
+30	1	7.08	10	20
+31	1.26	7.94	12.2	24.4
+32	1.58	8.91	12.55	25.1
+33	2	10	14.1	28.2
+34	2.51	11.2	15.8	31.6
+35	3.17	12.6	17.75	35.5
+36	4	14.1	19.9	39.8
+37	5	15.8	22.35	44.7
+38	6.31	17.8	25.05	50.1
+39	7.94	20	28.1	56.2
+40	10	22.4	31.55	63.1
+41	12.5	25.1	35.4	70.8
+42	16	28.2	39.7	79.4
+43	20	31.6	44.55	89.1
+44	25	35.5	50	100
+45	32	39.8	56	112
+46	40	44.7	63	126
+47	50	50.1	70.5	141
+48	64	56.2	79	158
+49	80	63.1	89	178
+50	100	70.8	100	200

+51	**125**	**79**	**111.7**	**223.4**
+52	**158**	**89**	**125.8**	**251.6**
+53	**200**	**100**	**141**	**282**
+54	**251**	**112**	**158.35**	**316.7**
+55	**317**	**126**	**178**	**356**
+56	**400**	**141**	**200**	**400**
+57	**500**	**158**	**223.4**	**446.8**
+58	**633**	**178**	**251.7**	**503.4**
+59	**800**	**200**	**282.8**	**565.6**
+60	**1000**	**223.6**	**316**	**632**

I hope that you find these tables useful.

Lawrence
9H1AV / 9H9MHR

Antennas for160 Metres

A number of radio amateurs wish to work also on 160 metres, but find difficulty to make an antenna for this frequency because, if we take a dipole, it has to be around 128 feet on each side.

This is apart from the fact that it is difficult to make a high antenna, because if one takes heed of recommendations that a dipole has to be at least a half wavelength high, this means a height of around 260 feet.

The majority of radio amateurs do not have the possibility to use this height, but notwithstanding that their dipole is very low, they succeed to work round the world just the same.

An antenna that one can make for a low angle of radiation is a vertical antenna, but here it is also difficult for it to be the proper size, that is a quarter wavelength, because there are not many who can make a 128 foot vertical.

Another difficulty is that the vertical antenna needs radials of the same length, and therefore there will be the difficulty of finding the same, or about the same space required to make a dipole, with the addition of having to have the other vertical part of the antenna.

Even here one can make a smaller antenna and add loading coils to bring the antenna to resonance on the frequency, both on the vertical as well as on the radials, although this reduces the efficiency the more the antenna and the radials are made smaller.

However, one should always try to make the best and biggest antenna that he can in the space that he has and try to communicate.

From my experiences on this frequency, here in Malta we have two particular difficulties for one to work on this frequency.

One is that like foreign radio amateurs we do not have space for an antenna, and therefore the majority or radio amateurs have to see what they can do.

The other is that we do not have a ground of good conductivity for radio signals like they have in many other countries. This makes it more difficult for us, but not impossible.

About the vertical antenna, I have already said that one can make coils, both in the vertical part as well as in the radials. Remember that the longer the vertical part and the radials, the more efficient the antenna will be.

Instead of making coils with the radials, the radials may be of the proper size and spread as straight as possible and bent around the roof or where the antenna is located, but one should try not to make an angle of less than 90 degrees at the bends.

Whoever has a well can also lower a pipe in the well and connect a wire to it. This serves both as a mains earth as well as for radio frequencies, and therefore the wire should be as short and as thick as possible.

One of the simplest antennas that can be used is a long wire. The shortest length that one should use, if possible, is a quarter wave, that is 128 feet.

If the wire is shorter he will have to lengthen the antenna artificially and resonate it as well as using a matching apparatus to match the antenna with the transmitter.

However, the longer the wire is the better it will be so that the high current part of the antenna will be outside and high so that it will not be interfered with by buildings and other obstacles.

If the wire is a half wave long, that is 256 feet, the part where the current is highest will be in the middle and therefore we should try to make it as high as possible.

Although this antenna works well where there is good conductivity ground especially if one lives near the sea, it does not work too well where there is no good conductivity. This is the case in Malta.

I am not saying that it does not work, because when I first started working on this frequency in the early 70s I used such an antenna, that is a 128-foot long wire.

However, there is a big difference between this antenna and a dipole in Malta due to the bad ground conductivity.

With this antenna I used to work Europe, but I never worked DX.

Them I made a dipole and found tat there was a big difference, where I started working DX, among them the USA, South American countries, Canada and Japan.

One leg was attached to one of my neighbours TV antenna pole, while the other leg went down to a small room in a field in front of my house

The angle between the two parts was about 90 degrees. The height where the coaxial feeder was attached was about 20 feet above the roof.

Due to circumstances beyond my control, I now have to use a 128-foot wire running around the roof, but I have succeeded to make it work not too badly.

In Malta a dipole works a lot better because you will not be using the ground as part of the antenna and therefore depend less on its conductivity.

For this reason and because we do not have enough space, I am going to give you details about a dipole that used loading coils that I have found on the webpage of XE3YH .

The resonant frequency which XE3YH uses is 1.850 Mhz, and therefore you will have to use a bit more wire on each leg of the dipole if you want a lower frequency.

As XE3YH himself says, you will have to trim the lengths to resonate just the same because they change with the height and other particular factors for each place.

Do not forget that the bigger you make the dipole the more efficient it will be, and therefore use the greatest possible length that you can.

Do not forget that even if you bend its sides, it will be better than if it was shorter.

Use the greatest high possible because the higher it is the more chance you have that your signals will reach greater distances because it will be at a lower angle of radiation.

The first column is the length of each side of the dipole.

The second column is the number of turns of the coil.

The third column is the length of the coil former in centimetres.

The plastic pipe used for the coil is 4 inches, that is 10 cm.

The wire used is 2 mm while the coil is fitted in the middle of the each side.

To take an example, if we have each side of the dipole 5 metres long, we have to make 89.3 turns that occupy 18 cm on the 4-inch pipe.

5	**89.3**	**18**
6	**79.3**	**16**
7	**70.9**	**14**
8	**63.8**	**13**
9	**57.9**	**12**
10	**53.0**	**11**
11	**48.9**	**10**
12	**45.5**	**9**
13	**42.6**	**9**
14	**40.3**	**8**
15	**38.2**	**8**
16	**36.4**	**7**
17	**34.7**	**7**
18	**33.2**	**7**
19	**31.7**	**6**
20	**30.2**	**6**
21	**28.7**	**6**
22	**27.2**	**5**
23	**25.6**	**5**
24	**24.0**	**5**
25	**22.5**	**4**
26	**21.0**	**4**
27	**19.6**	**4**
28	**18.3**	**4**
29	**17.4**	**3**
30	**16.7**	**3**

This antenna can also be used as an inverted V as well as a vertical by making a vertical part and at least 4 radials.

XE3YH, would be happy if whoever makes the antenna sends him an e-mail and tells him how it worked. His e-mail is amolina@tunku.uady.mx

Another antenna for the same frequency is that of XE3RN, which is an inverted V, although you can use it as a normal dipole and if you want as a vertical.

The inner part of each side of the dipole is 10.08 metres long, while the outer part is 9.23 metres long.

There is an 89-turn coil on a 2 inch plastic pipe and a length of 9 inches between the 10.08 metres and the 9.23 metres parts. The wire used for the coil is 12 SWG.

Another antenna by the same XE3RN is also an inverted V with the inner part of each side being 10.32 metres.

The outer part on each side is 7.99 metres.

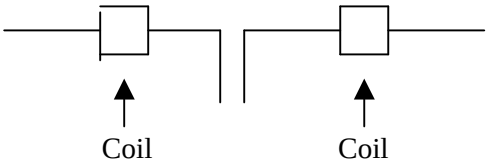
There is also a 110-turn coil spread on a 20 cm length or 8-inch length on a 2-inch pipe with 11.1 turns every 2 cm. The wire used for the coil is 16 SWG.

The resonant frequency of this antenna is 1.830 Mhz, and XE3RN says that this antenna can also be used on 15 metres (resonance 21.1) and 40 metres (resonance 7.08).

All the antennas use 50-ohm coaxial feeder to connect to the transmitter, although if you want you can use a balun.

I hope that you make one of these antennas and we have a talk on 160. Who knows. Perhaps you will succeed in contacting one of these authors.

XE3RN's e-mail is,
xe3rn@hotmail.com



Do not forget that to make an inverted V all you have to do is to make the antenna centre as high as possible and lower its sides. That's why it is called an inverted V.

As you know, in a vertical you have the

vertical part and the radials around the base of the vertical part.

Do not forget that if you make these antennas their authors will be happy if you inform them, and they be happier if you succeed in having a contact with them on 160 metres.

Lawrence 9H1AV / 9H9MHR


Long Delayed Echoes

I think that you may have heard about cases where radio amateurs heard their own signals a few seconds after they have ceased their transmission.

Such reports have been made since the first years of radio transmissions. W6ADP in 1932, W5LUU in 1950/51, and a number of other reports along the years on different frequency from 160 metres up to UHF and beyond by radio amateurs around the world.

There were differences in the reports, where he signals were heard from a few seconds to miniutes after the person had ceased his transmission.

In English they are called “LDEs” (Long Delayed Echoes), because they are not the echoes that one can hear when the signals are reflected by different ionised layers but take a longer time.

One can hear the difference because if the signals are reflected from different layers the same word is repeated from around less than a quarter second to half a second or a little less or more depending on the particular conditions at that time and the layers from which they are being reflected.

This is something relatively normal if one listens to commercial stations on short wave on low frequencies, especially lower than 8 Mhz and is something that once heard will never be forgotten.

A radio signal takes about .7 seconds to go around the world, and therefore signals that take more than a second are considered as LDEs.

Specific experiments were carried out to see if it was something that happens under particular conditions. There were cases where they were heard and cases where they were not.

Different theories were proposed, some a little advanced in imagination, at least presently.

Among these theories is that these are satellites sent from distant civilisation that repeat the signals they receive on the same frequency to make their presence known.

If we go to other theories we can mention that if one takes an example with radar, this works by reflecting signals off buildings, ships and every structure capable of reflecting radio signals.

In radar, in a simplistic way because there are different systems, what happens is that a transmission is sent for a very short time, the length of time depending at the distance one wants to measure, and the receiver receives the signals reflected from objects.

The system measures the time between transmission and reception of the received signals, the speed of radio waves is known, and therefore the apparatus can measure the distance between the radar transmitter and the object that reflected the radar signal and give their distance.

Another theory is that the signals are trapped between different ionised layers and continue to be reflected until they fall back.

There is another theory that signals are reflected from the moon back to earth, they are then reflected back to the moon and back to earth.

This does not appear to be sustainable because one thing that is common with every LDE report is that the signals were not very weak although they were not strong and appeared to be coming from a long way, and as everyone who has worked moonbounce knows how low the moon-reflected signals are.

When one considers the enormous distances in the case of LDEs one becomes aware that the signal loss is much lower than one can expect.

Apart from this, a relection from the moon takes about 2.7 seconds, that is, earth > moon > earth.

A double reflection, therefore, that is a signal sent from earth > moon > earth > moon > earth takes about 5 and a half seconds and not minutes and hours that have been reported.

Do not forget that we are talking also on low frequencies such as 1.8 Mhz and 3.5 Mhz and not only from VHF upwards.

A number of reports were made by radio amateurs where they say that they heard part of their own transmission a few seconds and also a number of hours after their transmission.

In fact, I have found information collected by Mac Obara/ P.Eng. - Applied Science, TZ6JA, ex-JA8SLU, PO Box 59 Tama, Tokyo 206, about LDEs experienced by Japanese radio amateurs.

According to this information, JA3ONB with whom I had contacts on 160 metres way back in the 70's, received his own signals more than once on 160 metres from the day after to 4 days after and alsoi with a double echo of the same transmission with a space of 48 hours between them that had QSB, distortion and Doppler shift of + 300 to – 200 hz on 1.822 Mhz.

There were other Japanese stations among them JA7SN, JA1HQT, JA1CGM and JA8DNV who reported this phenomenon 1989 – 2004 on frequencies of 1.8 Mhz and 3.5 Mhz.

These are all well-known amateur radio stations that have more than 30 years experience working on 1.8 and 3.5 Mhz.

JA7SN succeeded in recording one of the transmissions on 3.5 Mhz and you can download it from
http://park1.wakwak.com/~ja7ao/lde/ja7sn.wma
As you can see, this means enormous distances when we consider the speed of radio signals.

In fact, the distance is measured in Astronomical Units (Au) that is 150 million kilometres.

In view that these signals were received between 20 minutes and 82 hours after the transmission was made, the distance is between 1.8 to 297 Astronomical Units (Au).

Among interesting observations made by the Japanese stations, these were that the occasions when the LDEs occurred were between October and February, time of transmission between 20.00 and 22.00 and signals received between 16.00 and 06.00 local time and were received for not more than 20 minutes.

These were observed to occur between one or two years after the peak of the sunspot cycle till it reaches the lowest level, as well as one or two years before the cycle peak.

There are a number of theories with which some agree with and some do not, but I think that I have rasied your interest or curiosity with this article to know more.

I am therefore going to give you the addresses of a number of websies where you can find information about LDEs, some with theories that one can expct or that can make sense, and others that can be said that presently they are based on fantasy.

Dr Volker Grassman, DF5AI webpage – http://www.df5ai.net which is very interesting as he has a number of propagation studies.

If you want to you can go direct on his LDEs articles at,
http://www.df5ai.net/Material/articles5.html#ArticlesLDE

A copy of an article from QST of Mejju 1978
http://66.51.112.117/k3pgp/Notebook/Lde/lde.htm

Gabriel Sampol, EA6VQ,
http://www.qsl.net/ea6vq/lde.html

Advanced in Imagination

Igor Grigorov, RK3ZK,
http://antentop.bel.ru/lde.htm

Malta UFO Research
http://www.mufor.org/radiosig.html

http://www.violations.dabsol.co.uk/probe/probepart1.htm

Lawrence 9H1AV / 9H9MHR

NEWS

You should remember that Montenegro does no longer form part of Serbia and is now being considered as a separate country for DXCC purposes, etc.

The beginning of the end of BPL/PLC

Good news for all radio amateurs from Portugal is that Oni, the company which was providing internet services on the EDP company electricity supply terminated its service so that there is no BPL/PLC services in Portugal.

Two years ago this same company had said that it will provide service to around 10 million clients by the end of 2004, but had only less than 500 clients.

This is a rfelection on how good BPL/PLC is and how its proponents inflated it without any consideration.

New record on 2 metres EME

ZL1IU (RF64vr) and CT1HZE/DL8HCZ (IM57nh) in Portugal are saying that they have made a new record on 2 metres EME.

ZL1IU had 500 watts & 4 x 12 yagis, while CT1HZE had 1.5 kw & 4 x 11 yagis.
They used digital mode JT65B, world distance is 19685 km or 12,204 mil.

The moon was only visible on both sides for 1o minutes.

I ask Maltese and Gozitan radio amateurs that work EME and any other mode of propagation on all frequencies to send me details of contacts they have made especially if they are first time that they were made from Malta to publish them.

New record on microwaves

WA1ZMS and W4WWQ made a new record when on 10 December worked on 322 Ghz at a distance of 7.3 km, 4.53 miles. They used slow FSK CW, the spectran programme, and traditional rf equipment.

They used apparatus that they had previously used on 241/322/403 Ghz, harmonic mixers and 12-inch parabolic dishes, and increased their previous distance that was 1.4 km or .87 miles.

Satellite AO51

WHJoever works through this satellite (http://www.amsat.org/amsat-new/echo/ used to transmit a CTCSS 67 Hz tone to access it. This has been removed and it now works on the carrier. The satellite schedule details may be found on
http://www.amsat.org/amsat-new/echo/ControlTeam.php

DXpedition

A Dxpedition is going to be held next year during autumn from St Brandon Island, which is situated about 250 miles to the Northeast of Mauritius. They are going to be based on Isle du Sud, are going to have 12 x FT2000, 6 Quadra amplifiers and monobander beams.

They are hoping to get the 3B7C callsign, are going to work for about three weeks, including 3 weekends, 24 hours a day and up to 12 station simultaneously on all frequencies.

More details can be downloaded from
http://www.3b7c.com/
or directly from
http://www.3b7c.com/news-1.html

Grimeton

There is going to be a special transmission fronm the Swedish station Grimeton/SAQ on Sunday, 24 December, 2006, on a frequency of 17.2 khz 08.00 UTC.

This is the only station in the world that still uses an Alexanderson alternator that is going to be used fo rthis transmission.

Lawrence 9H1AV / 9H9MHR

MARL Activities

Yearly social gathering
The Committee would like to inform the members that the yearly social gatheringwill be held at the MARL Centre on Sunday, 7 January, 2007 at 10.00. There will be food and drinks.

Membership Fee
Membership payment for the year 2007 has already started. The Financial Secretary will be waiting for you to pay your LM10.00 membership fee.

Do not forget that whoever has not paid will not be able to vote for the committee during the Annual General Meeting.

Annual General Meeting

The Committee also wishes to inform the members that the Annual General Meeting will be held on Sunday, 28 February, 2007, at 10.00.

We remind you that if there is no quorum the meeting will be held with the members present.

Do not forget that an election will have to be held this year and therefore the nominations thaht have to be signed by the nominated, the proponent and the seconder have to arrive not later than 10 days before the Annual General Meeting.

See you.