



MARL



Magazine by MARL

For Maltese and Gozitan

Radio Amateurs

Number 14

May 2007

Smoking is prohibited



at the centre

From the Editor

Friends,

I welcome you to another issue of this magazine for May 2007, which is the 14th edition in this series.

This is the first edition after one month after we published the last edition and if we have enough material we will try to issue this magazine every month.

From this edition you are going to find that which we are calling the buy and sell corner, where anyone who has something to sell or wants to buy something can send us (to 9H1AV) the details so that we can publish them.

This is a new service to MARL members, although whoever has something useful to radio amateurs, as long as it is not a shop or commercial enterprise, can send us details.

Do not forget that this is your magazine, and the more you send us articles the more frequently we can publish this magazine and the more interesting it will be.

We should thank Paul, **9H1SP**, who together with others dismantled the antenna for repairs and they intend to get it back up in its place as soon as possible.

The television repeater is being repaired and modernised, or rather rebuilt by Dominic **9H1M** and Stanley **9H1LO**, and it is thought that it will be installed again next summer.

The same can be said about the ex-R7 repeater, which is being fixed or rather rebuilt.

I should also say that since it is dismantled the opportunity is being taken to change its frequency. You will know about it later on.

Although there were some who grumbled that presently the television repeater is not working, and the same can be said about R7, we cannot forget that all those who are carrying out these works are doing them in their spare time.

If all those who grumble and criticize had to give a hand and help instead of simply grumbling things will be done more quickly.

We cannot forget that as they say, it is better to light a candle than curse the darkness.

Lawrence 9H1AV / 9H9MHR

Proposals by the Preparatory Conference for the World Radio Conference

136 kHz

With regard this frequency, the Preparatory Conference for the World Radio Conference is proposing that radio Radio Amateurs worldwide be granted a secondary allocation between 135.7 kHz and 137.8 kHz.

We hope that as soon as this is approved by the Conference the Maltese authorities will quickly give us this frequency which we have been demanding for about eight years since it was allocated in England.

5 MHz

Apart from what the Preparatory Conference has decided, I am going to give you a list of those countries that have authorized their radio amateurs to use this frequency.

Prefix	Country
4U1UN	United Nations
4U6OUN	United Nations
C6	Bahamas
G	England
GD	Isle of Man
GI	Northern Ireland
GJ	Jersey
GM	Scotland
GU	Guernsey
GW	Wales
HH	Haiti
J2	Djibouti
J3	Grenada
J6	Santa Lucia
JW	Svalbard
KH6	Hawaii
KH8	Amerikan Samoa
KH8/S	Swains Island
KL7	Alaska
KP2	(American Virgin Islands)
KP4	Puerto Rico
LA	Norway
OH	Finland
TF	Iceland
V3	Beliz
VE-VO1MRC	Canada (Experimental)
VP2M	Montserrat
VP5	Turks & Kaikos
W, N, K	USA
YN	Nicaragwa
YS	El Salvador
ZD8	Ascension Island
ZL-ZK4EAM	New Zealand (special permit)

Presently these are dubious

4X, 4Z	Israel
5Z5	Kenjya
9Y-9Z	Trinidad & Tobago
C3	Andorra
CN	Marocco
CT1	Portugal
HI	(Domenican Republic)
HK	Columbja
I-IT	Italy
OM	Slovak Reoublic
PJ7	Sint Martin
SM-SL	Sweden
SV	Greece (Athens)
TI	Costa Rica
V4	St Kitts & Nevis
VP9	Bermuda

YO	Romania
YT, YU, YZ	Montenegro
YT, YU, YZ	Serbia
YV	Venezuela
XE	Mexico
Z3	Macedonja
ZC4	Cyprus
ZF2	Cayman Islands

These have access

S21	Bangladesh
VK	Australia

The question is when are we going to be given access to this frequency.

As we have told you in the last edition, the Preparatory Conference for the World Radio Conference that is to be held between October and November has issued a document on new allocations.

Regarding this frequency, the Preparatory Conference is proposing that radio amateurs on a worldwide basis be given a secondary allocation between 5.26 MHz and 5.42 MHz.

We hope that once this is approved by the World Radio Conference the Maltese authorities won't drag their feet to give us this allocation which we have also requested several times.

Since we are talking about this frequency, it should be said that both the ARRL and the RSGB are requesting that apart from SSB, radio amateurs would be able to also use CW.

The World Radio Conference is going to be held in Switzerland between the 22 October and 16 November 2007.

If, therefore, there is agreement about these proposals, it will be a good Christmas present if we are given the allocations agreed upon by this Conference.

7 MHz

With regard to this frequency, the Preparatory Conference is proposing that

radio amateurs be granted a primary allocation between 7.2 MHz and 7.3 MHz.

This means that if there is agreement, the 40 metre band would become as it was originally before 200 kHz between 7.1 MHz and 7.3 MHz were taken away to be given to broadcasters.

When the allocation between 7.1 MHz and 7.2 MHz was granted the Maltese authorities did not find any difficulty to give it to us, and therefore I do not think that they will find any difficulty to give us this allocation once it is agreed to by the World Radio Conference.

500 kHz

Regarding 500 kHz we have already told you that there are some countries that have authorized their radio amateurs to experiment near 500 kHz.

In Germany, at the beginning of 2005, they had authorized Walter DJ2LF to use the callsign DI2AG.

In May 2006, Geri, DK8KW, was authorized to use the callsign DI2BO.

They were authorized to operate on 440 kHz + or - 100 Hz.

In the beginning of the year 2007, they were authorized to also use 505.1 kHz + or - 100 Hz.

Presently, DI2BO is transmitting with QRSS3 and also identifying on CW.

Presently the beacon is operating non-stop on 505.015 kHz, and whoever receives it and sends him a report will receive a special QSL card.

DK8KW has information on low frequencies on his internet webpage, and whoever is interested would find very useful information on his website.

Lawrence 9H1AV / 9H9MHR

Links

Today I am going to give you a few interesting internet links. These are:

The new link for the Flying Pigs Radio Club:

<http://www.gentzow.com/fpgrp/>

CW keys webpage:

<http://www.w1tp.com/telegrap.htm>

K8ZT webpage which has many links to other webpages:

<http://www.k8zt.com/>

Webpages on transmission echoes and abnormal propagation from VA3ZNW.

http://www.antentop.org\008\time_warp008.htm

<http://www.antentop.org\007\prop007.htm>

<http://www.antentop.org\007\lde007.htm>

SOFTROCK an entry level project to SDR.

Software Defined Radio (called SDR from now on) is described as the implementation of the functionality of radio by using digital techniques and software.

SDR is for Amateur Radio the equivalent of the Digital Camera for Photography.

Ignore it if you wish, but you will be putting yourself at a severe disadvantage against others in future, as the technology allows you to obtain results which are impossible with conventional equipment.

SDR has probably been around for some five years, but the idea of replacing your expensive transceiver by an equally expensive blackbox and a powerful computer, just did not catch on with the Hamradio community.

However, the technology is certainly very intriguing, and a few dedicated Hams

wanted to experiment and understand more about the capabilities of SDR.

One such, Tony Parks (KB8YIG), together with Bill Tracey (KD5TFD) built an absolute minimal direct conversion receiver using standard components (costing about \$10), connected it to a PC and found that they had created a 40 meter full-band receiver with sensitivity and selectivity better than a regular transceiver!

They enrolled help from other amateurs with software experience to develop/adapt personal computer programs to use with this unit, and named it the Softrock project.

“Soft” because the whole receiver depends on the PC software and “rock”, because the local oscillator is crystal driven.

To encourage other amateurs to play with SDR, Tony offers an entry level Softrock kit consisting of his printed circuit SMD board (matchbox sized) and all the components, for sale at \$11 (shipping included).

The SoftRock-40

Today, 18 months on, several models have been developed for the different bands 160, 80, 40, 30, 20 meters.

There is even one for 10.7 MHz, so that Softrock can be used to process the IF picked out from a normal transceiver.

Tony’s sales must now be counted in the thousands of units. That in itself is amazing, but all those amateurs who have bought these kits are full of ideas and are fuelling the evolution to ever more complex and exciting modifications.

There are now 6 different software packages available, all of them are FREE.

Windows and Linux OS are supported.

The Softrock community provides user assistance through Yahoo groups

Softrock hardware receivers are a stable build now (at version 6.1)

Tony and a group of European Hams, built a transmitter using the same techniques, and piggy-backed it on the v.6.2 Softrock receiver. They then brought it on to one single board, the RXTX v.6.1 which is a 1 watt SSB transceiver (cigarette package size).

Transceiver software programs are available. The unit can be used for CW, and as from a few weeks ago, you can run various digital modes by linking in existing software packages.

(N.B. You can work the world on PSK with 1 watt. The first PSK Softrock to Softrock QSO was between Italy and the UK very recently.)

Now, from Feb 2007, you can buy RXTX 6.1 kits from Tony either for 160 meters or 80/40 meters or else 40/30 meters. They cost a bit more than the receiver alone... \$32 (shipping included).

Other ideas abound...Class-E SSB Amplifiers to boost the transmitter output power, for example.

For those really bitten by the bug, there is another kit project called HPSDR (High Performance Software Defined Radio), where they are developing specific hardware in modular/rack form and optimizing the special analog/digital interfaces with custom designed computer boards, in order to gain another order of magnitude performance jump.

This will put these Hams way ahead of today’s commercial transceivers.

Remembering that everything is done in a digital computer, it is now possible to keep digital copies of all the received signals across the entire radio band.

You can play them back, and with different selection settings (mouse click / keyboard), extract the other stations you missed while listening originally.

So, you can record an entire weekend of contest activity (on hard disk or CD) and play it back later to see what stations you missed!

Or, who was the station with sidebands causing you QRM while you were trying to work an elusive DX station?

Or, maybe you want to send a digital copy of what you actually received to stations you had a QSO with.... was it really a 59 signal?

I can think of at least another half-dozen innovative possibilities to examine.

It's all happening now, so, what's holding us (or at least me) back?

Well..... For those of us with weak eyesight and shaky hands, the assembly of even the simplest SMD kit is a challenge.

I am told it is not that difficult, but maybe MARL can help by asking those experienced in SMD to set up a bench at the club and show us how.

I think we all have access to a personal computer (either your own or in the family). MARL has a couple!

But what do you need to run Softrock?

According to what I have been told, you should have a PC with at least 500 MHz clock for the simplest receiver software (called Rocky).

For good performance, and especially for the transceiver software (like KGKSDR), 1000 MHz is a minimum, but 2300 MHz would be more comfortable.

For a simple receiver, the interface to Softrock is a regular sound card (usually in most modern PCs), but for better performance (S/N and bandwidth) there are special sound cards (internal or external to the computer) which can be used. This might cost you up to Lm. 50, if you really have to buy one.

So, anyone else want to play?

To quote one radio amateur... I have not had so much fun with Amateur Radio in the last 30 years as I have had since I got my first Softrock kit.

Robin, 9H1ZZ

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Electrical Safety First

**By Dominic Azzopardi 9H1M
Tech. Eng. IEEE 8070422/4648**

For a good start it is necessary to have at least a simplified knowledge of how electricity is supplied to the consumer.

The energy is transmitted from the power station along the National Grid Network at a very high voltage (up to 400,000 volts – 400 Kv). It arrives at a local transformer which may be situated at ground level or may be a pole transformer. This is called the Sub-station.

The transformer reduces the voltage to the household working level of 230v and the supply arrives to the consumer through a 2-wire system in the case of a single-phase system or 4-wire system for the case of a 3-phase system.

For simplicity let's consider a single-phase installation.

The 2 cables are named **LIVE (L)** and **NEUTRAL (N)**. For technical reasons, at the substation, the neutral cable is properly earthed via several **EARTH** electrodes connected together. This is an important point as we shall later see.

At the consumer end, a third cable is connected to an **EARTH** electrode and fed to the distribution box along with the other 2.

After passing through a set of fuses/circuit breakers, all these three cables arrive at each power socket in the house.

To operate an appliance, a circuit is made by connecting it between the **LIVE** and **NEUTRAL** wires.

For simplicity we refer to the current entering the circuit from the **LIVE** wire and returning by the **NEUTRAL**.

However in reality it pulses backwards and forwards at a rate of 50 times per second because the mains supplies alternating currents (AC).

We shall bear in mind that all voltages exceeding 50 volts are considered as lethally dangerous.

Imagine we have an electric shock situation where a person is holding both **LIVE** and **NEUTRAL** wires at the same time – one in each hand. Current flows through the body completing the circuit.

However, holding both conductors in this way seems rather unlikely and it is difficult to see how it could easily happen by accident.

It is more likely that a single bare wire (the **LIVE** one) will be touched while the feet make contact with the **GROUND**. This may also produce an electric shock called an earth-loop shock.

To understand this loop try to imagine this situation – Suppose, due to some fault, the **LIVE** wire is exposed and a person touches it. Sufficient electrical contact is made with the ground (“**EARTH**”) through most shoes and, for example, a damp tiled floor.

The earth conducts electricity due to the presence of moisture and various conducting substances.

There is therefore a circuit formed from **LIVE** – through the body – through **EARTH** and back to the **NEUTRAL** at the substation (remember as we said earlier, at the substation, the **NEUTRAL** is directly connected to **EARTH**).

Accidental touching of a live conductor can happen very easily if wires are pulled free, cut through or sufficiently worn so as to expose the copper conductor beneath the insulation.

The severity of the shock depends on the body resistance – hence the strength of the electric current that passes through the body and the resistance of the person's feet and ground. This in turn is dependent on the type of footwear, if any, the floor material and the amount of moisture present.

Note that touching the **NEUTRAL** cable (although not advisable) should not incur any danger as this is at the same potential as the **EARTH** cable and no circuit is formed with the **LIVE** one.

Since touching the **LIVE** wire is so dangerous it is essential to distinguish it from the **NEUTRAL** one. This is done by using colour coding for the insulation.

The live cable is coloured **BROWN** in both flexible cable and in fixed cables, i.e. inside trunking, conduit etc. In old fixed installations, this used to be **RED**.

The **NEUTRAL** is colour coded **BLUE**, again in both type of installations but in old installations it used to be **BLACK**.

The **EARTH** cable is always **GREEN/YELLOW** stripes. It is essential for everyone to follow this code.

Conductor	Old System	New System
LIVE Phase 1	RED	BROWN
LIVE Phase 2	YELLOW	GREY
LIVE Phase 3	BLUE	BLACK
NEUTRAL	BLACK	BLUE
EARTH	GREEN GREEN/YELLOW	

Electrical voltage bands as defined by IEE BS7671:2001

Volts AC	Class	Abbreviation
0-50	Extra Low Voltage	ELV
50-250	Low Voltage	LV
250-1000	Medium Voltage/Tension	MV/MT
1000-30000	High Voltage/Tension	HV/HT
30000 up	Extra High Voltage/Tension	EHV/EHT

A particular example.

Many pieces of electrical and electronic equipment are housed in a metal case. This may be to provide mechanical strength, electrical screening, to withstand high temperatures or for any other reason where plastic may be unsuitable.

It is important that all exposed metal work be connected to ground earth via the **EARTH** wire mentioned earlier. A familiar piece of equipment is an electric iron operating from the mains with the element correctly connected between **LIVE** and **NEUTRAL** and with the metal case connected to **EARTH**.

Suppose the **LIVE** cable inside becomes detached and touches the metal case. There would now be a circuit formed from the **LIVE** wire to the metal case to **EARTH** and through the **EARTH** loop back to the **NEUTRAL** at the Sub-station.

The current flow depends highly on the resistance of the **EARTH** path – which in turn depends on the resistance of the consumer's **EARTH** electrode, the moisture and condition of the ground and the distance to the Sub-station.

This resistance is not likely to be low enough to let enough current to pass and blow the protective fuse of the circuit, thus if in this condition a person touches the metal case of the iron, it is most likely to cause a severe shock.

For this reason we use a protective device in our distribution system, this is called an RCD (Residual Current Device) – previously known as ELCB (Earth Leakage Circuit Breaker).

The RCD's purpose is to immediately turn off the electricity supply if a current as low as 30ma (milliamps) passes from the **LIVE** conductor to **EARTH**. The mechanism of an RCD can trip in just 0.04 seconds.

Contrary to popular belief, an RCD is not an overload device (does not trip if excessive current flows between **LIVE** and **NEUTRAL**). It only senses the current difference – i.e. current that flows from one conductor and does not return in the other.

In Malta, an RCD is compulsory in most installations (some exceptions may apply). A test button is incorporated in the device; this should be checked regularly in order to test its action.

The proper connection of appliance and equipment to the mains earth should also be checked periodically. This can easily be done by using a multitester set to the lowest resistance range or continuity meter.

With the appliance unplugged from mains, touch one probe on the earth pin of the plug and the other probe to the metal part of the appliance. Practically zero resistance should be measured.

This is a very basic test but better than not testing at all. Note that this does not apply to Double-insulated appliances – we will deal with these in the next part.

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Buy and Sell

We are going to start a buy and sell corner in this magazine about apparatus and other things that radio amateurs may have. Whoever wants can send details to 9H1AV.

For Sale

TX/RX ex-service with valves 110 – 180 Mhz, has panel meter Lm26

GEC vom, 1950, Lm10

Phillips vom, 1950/60, big meter Lm10

Imperial radio LW, MW, SW, FM 1965 model, without cabinet, needs attention in the stereo decoder Lm10

Korting radio LW, MW, SW, FM, 1967 model without cabinet, needs attention on the heater chain Lm10

Tape recorder Elizabethan 1956 model complete with tape rolls in very good condition Lm16

Toshiba t/table stereo + MW, LW, FM very good contition Lm14

Portable TV Sonic B&W 14'' Lm4

Phillips video recorder Lm5

Samsung video recorder Lm5

CD player needs attention Lm4

Photographic camera Carena with flash etc. 110 works OK Lm8

Photographic camera Zenith 35mm, Very good condition about 40 years old Lm18

JVC digital video camera complete with all accessories, zoom, case, two new cassettes, manual, battery etc., still in box and never used, bought Lm270 two years ago, asking Lm110

Film splicer 8 & super 8 good condition Lm4

Navigation instruments (have many components) Lm10 each

Fax very good condition Lm12

Computer UPS needs battery Lm6

Amplifier valves 6BW6 Lm6

2 wooden consoles each one has 2 speakers 50W Lm10 each

Hi power transformers 3,000W Lm16 each

Isolation 150W Lm8 each

6 hi power chokes Lm3 each

Plessey solid-state psu with meter 40V 15A very good condition Lm40

Big quantity of radio & TV valves, 807's, 12AT7's (ECC81), 6J5's, 6AM6's and others B7G's etc from Lm1

Tools

RYOBI router complete with accessories 850W still in box never used Lm56

RYOBI universal drill stand never used Lm10

Many capacitors high-power, computer psu's, floppy drives, hard drives, etc, pcb's full of useful components, ic's, low voltage power transformers, etc.offers?

9H1FD

JOSEPH VELLA

55 Triq il-Vitorja, Haż-Żabbar, ZBR 02

Repubblika ta' Malta

Tel 2189 2217, 99230 8487

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For Sale

FT736R complete with 1296Mhz, 432Mhz, 144Mhz u 50Mhz modules TS515

Linear PSU 4KV 1.5A

9H1GT

JOE FRANCALANZA
“MANTES”, 24, Triq id-Daħla ta’ San Tumas, Iż-Żejtun, ZTN 04
Repubblika ta’ Malta
joefran@maltanet.net

Tel 99 49 58 43

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For Sale

Eimac Valv 7203/4CX250B

Transformer 240V to 1600V 800VA

Transformer 240V to 50/50 1000VA

Everything at Lm70

Tel 7929 5454

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For Sale

Yaesu G-1000dxc (European model) 240V 25 metres control cable Lm350 new in box

Yaesu GA-3000 shock-mount for G-1000dxc price Lm50 new in box

Yaesu G-1000dxa (US model) 110V needs transformer for 240V price Lm250 little used but in box użat

Mark Farrugia Tel 7946 5011

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For Sale

Timewave DSP 599zx Audio filter Lm120

Datong FL3 AF Filter Lm45

Yaesu MD108 Desk Mic Lm45

Kenwood DSP MC909 Desk Mic Lm75

Yaesu FT690 MKII 6M base/mobile xcvr multimode Lm160

9H1IS

FRANCIS FARRUGIA
“Edelweiss”, Triq Is-Sultana, Raħal Ġdid (Paola), PLA 02 Repubblika ta’ Malta
Tel 2182 0395, 9984 5628

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For Sale

Everything works perfectly

FT101 HF CW/SSB 160 – 10 Metres + 2 valves Phillips ECG 6JS6C asking Lm155 negotiable weight 33 lbs

ATU bal/unbaln +swr bridge, meter etc, ~ 300W DC in weight 15 lbs Lm75

Heavy-duty Hammond xfmr 240V for 115V 750W on wooden board and junction box weight 18 lbs Lm65

Collins aircraft rotary inductor, 7 to 61 microhenrys, for long wire, motorized but can be tuned by hand weight 12 lbs Lm55

Kenwood SP230 speaker, with 3 filters, lo, Hi 1, Hi 2, Lm25

Trio MC50 desk Mic Lm20

Aircraft Receiver Bendix VHF Lm55

Half wave dipole for 40 metres, can be used on all frequencies hgher than 7 Mhz with ATU, as a T on 80 & 160 metres, used, 52’ 300 ohms feeder

9H1BM

FRANK MICALLEF
Casa Adreanna, Triq Karm Debono, H’ Attard, BZN 02 Repubblika ta’ Malta

Frank is always at the Club every Sunday

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For Sale

Pakratt 232MBX Lm25

Antenna Tuner MFJ 948 Lm30

9H1JJ ex-PA2JJC

JAN CLEMENTS

“Katheryne Ville”, Triq Dwardu Ellul

Ix-Xghajra, Repubblika ta’ Malta

pa2jjc@hotmail.com

jjc@onvol.net

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Wants to Buy

3 element yagi + rotator

9H1EV ex-ZB1LS, G3PWO, 7X0LOU, /SM0, /OH5

LOUIS SCERRI MONTALDO

428 Triq Il-Kbira, San Pawl il-Baħar,

SPB 09 Repubblika ta’ Malta

<http://osj.8k.com/MAIN.HTM>

marquismontaldo@vol.net.mt

comtemontaldo@spincom.ws

Tel 2157 3270

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Radio Amateur List

A radio amateur’s list was published some time ago by MARL, but considerable time has passed and there were changes with time.

Therefore, it was felt that a new as much as possible updated list had to be published again.

As you can imagine, this was not an easy job, but it took a lot of time, long hours over a long time, to be made and to collect the information from a number of sources.

Now you can download a list of radio amateurs who hold a Maltese licence from my website

<http://9h1av.topcities.com/hp.html>

and later on from the MARL website

You can also download another list of Maltese radio amateurs who have emigrated to other countries.

Please check whether your details are correct. If you have any corrections please send them to me.

If you have an e-mail and/or webpage which are not listed please send me details so that I will include them.

If you know someone’s details who is not listed or other details or information please also send it to me so that I can correct the lists.

If you know about any emigrated radio amateurs who are not on the list you can send me the information and inform them so that we will have a correct list and they will know about it.

The same can be done if you know any of their relatives but you do not know the radio amateurs details. You can contact their families for details.

Any help from your end is appreciated.

Lawrence

9H1AV / 9H9MHR

Measurements

Today I am going to continue to give you the antenna measurements for the next frequency bands.

The first column is the frequency.

The second column is the wavelength in metres.

The third column is the length of a quarter-wave in feet and inches.

The last column is the length of a half-wave in feet and inches.

Frequency allocation on 28 MHz is from 28.0 MHz to 29.7 MHz.

F MHz	M	1/4W	1/2W				
28.025	10.71	8'4"	16'8"	29.375	10.2	7'10.7"	15'11.2"
28.05	10.62	8'4"	16'8"	29.4	10.2	7'11.5"	15'11"
28.075	10.69	8'4"	16'8"	29.425	10.195	7'11.4"	15'22.8"
28.1	10.68	8'4"	16'8"	29.45	10.19	7'11.35"	15'10.7"
28.125	10.67	8'4"	16'8"	29.475	10.18	7'11.27"	15'10.5"
28.150	10.66	8'3.75"	16'7.5"	29.5	10.1	7'11.18"	15'10.4"
28.175	10.65	8'3.7"	16'7.3"	29.525	10.16	7'11.1"	15'10.2"
28.2	10.64	8'3.5"	16'7"	29.550	10.15	7'11"	15'10"
28.225	10.63	8'3.5"	16'7"	29.575	10.14	7'10.9"	15'9.8"
28.25	10.62	8'3.4"	16'6.8"	29.6	10.135	7'10.8"	16'9.6"
28.275	10.61	8'3.3"	16'6.6"	29.625	10.13	7'10.77"	15'9.54"
28.3	10.6	8'3.2"	16'6.4"	29.65	10.12	7'10.7"	15'9.4"
28.325	10.59	8'3.1"	16'6.2"	29.675	10.11	7'10.63"	15'9.26"
28.35	10.58	8'3"	16'6"				
28.375	10.57	8'2.9"	16'5.8"				
28.4	10.56	8'2.8"	16'5.6"				
28.425	10.554	8'2.78"	16'5.56"				
28.45	10.545	8'2.7"	16'5.4"				
28.475	10.54	8'2.6"	16'5.28"				
28.5	10.53	8'2.52"	16'5"				
28.525	10.52	8'2.4"	16'4.8"				
28.550	10.51	8'2.35"	16'4.7"				
28.575	10.5	8'2.26"	16'4.5"				
28.6	10.49	8'2.16"	16'4.32"				
28.625	10.48	8'2"	16'4"				
28.65	10.47	8'2"	16'2"				
28.675	10.46	8'1.9"	16'3.8"				
28.7	10.45	8'1.8"	16'3.6"				
28.725	10.44	8'1.75"	16'2.5"				
28.75	10.43	8'1.6"	16'3.3"				
28.775	10.425	8'1.5"	16'3"				
28.8	10.42	8'1.5"	16'3"				
28.825	10.41	8'1.4"	16'2.8"				
28.850	10.4	8'1.32"	16'2.64"				
28.875	10.39	8'1.2"	16'2.4"				
28.9	10.38	8'1"	16'2"				
28.925	10.37	8'1"	16'2"				
28.95	10.36	8'0.9"	16'1.8"				
28.975	10.35	8'0.9"	16'1.8"				
29.0	10.34	8'0.8"	16'1.6"				
29.025	10.336	8'0.7"	16'1.4"				
29.050	10.33	8'0.66"	16'1.32"				
29.075	10.32	8'0.57"	16'1.14"				
29.1	10.31	8'0.49"	16'0.98"				
29.125	10.3	8'0.4"	16'0.8"				
29.15	10.29	8'0.32"	16'0.64"				
29.175	10.28	8'0.24"	16'0.48"				
29.2	10.27	8'0.17"	16'0.34"				
29.225	10.265	8'0.07"	16'0.14"				
29.25	10.26	8'0"	16'00"				
29.275	10.25	7'11.9"	15'11.8"				
29.3	10.24	7'11.8"	15'11.6"				
29.325	10.23	7'11.7"	15'11.5"				
29.35	10.22	7'11.67"	15'11.3"				

As you can see there is a difference of less than six inches in a quarter wave between the limits of this band, and therefore you have to be careful to tune the antenna in place for the best swr.

We will continue next time with measurements for 50 MHz, 70MHz and 144 MHz

I hope that you are finding the information useful.

Lawrence 9H1AV / 9H9MHR

MARL ACTIVITIES

MARL will be participating in the Horticultural Show at San Anton Gardens.

The show which is being organised by the Malta Horticultural Society will be held on Saturday 5 May and Sunday 6 May 2007.

This is a good occasion to present MARL and our hobby to the general public.

MARL operators will be operating an amateur radio station at the show.

Volunteer operators please put your name on the list and indicate when you will be available to operate as soon as possible.

The list is on the board near the office at the Club.

See you.