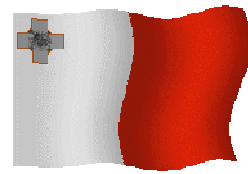


MARL



MALTA



Magazine by MARL

For Maltese and Gozitan
Radio Amateurs

Number 39
June 2009



Smoking is prohibited at the Centre

From the Editor

Friends,

I welcome you to another issue of this magazine for May 2009, which is issue 39 of this series.

As you could see from the last editions of this magazine, **MARL** is holding activities in public that are very useful for our hobby and for the public to know about **MARL** as well as our hobby.

This also serves as training for the members themselves that take part in these activities about the work that needs to be done to set up quickly and how the equipment functions outside if God forbids an accident happened and they needed to set up outside their home.

The last two activities held were **MARL's** attendance at the **Spring Show** at **San Anton Garden** which show was held on Saturday 2 May and Sunday 3 May and to which I have already referred in the previous magazine, as well as during the military activity that was set up by the **Mtarfa Local Council** that was held on Sunday 17 May. Today therefore you have some photos of these two activities.

I remind you that on the third weekend in August there is the lighthouse and lightships activity. This is not a contest, but whoever takes part in this activity should work as many lighthouses and lightships as possible from around the world.

I remind you that whoever takes part has to be either in the lighthouse itself or not more than a certain distance from it. In Malta we have the **Delimara** lighthouse, the **breakwater** lighthouse and the **Gordan** lighthouse.

More details in the next edition of this magazine, but those who like to work from outside their home and wish to take part should start thinking about it now and prepare everything now.

As I told you in the last edition, there is a group of radio amateurs that are assembling antennas and other equipment to work outside. Whoever wishes to help both materially and physically is welcome.

As always, I hope that you find the information in the magazine useful to you and if you have some article please leave it in my **QSL** box or you can send it to me on my e-mail **9h1av at searchmalta dot com**.

Lawrence
9H1AV/9H9MHR

Photos of the activity at Mtarfa

MARL took part in the Military Activity Day that was organized in **Mtarfa** on Sunday 17 May 2009.

First of all it good to say that **Mtarfa** was a centre where a number of British Services families used to reside and from this place one has very nice views apart from being in the quite in the countryside.

Although today there are many buildings, just the same the place is still quieter than other places in Malta.

In **Mtarfa** there also used to be a British Services **Hospital** as well as **NAAFI** where the British Services members used to buy many things without paying duty. There was also the British Forces Broadcasting Services **BFBS VHF** transmitter and is one of the best placed for transmission.

In fact, the repeater **R6 9H1BBS** that is connected with the internet on echolink is at this place and its antennas are visible in one of the photos.

There the activity organized by the **Mtarfa Local Council** was bound with a military show in which the Armed Forces of Malta took part and brought a number of equipment as well as old military vehicles that were used during the war.

For this occasion a number of **MARL** radio amateurs started setting up the antennas and radio equipment from the previous day where they set up dipoles for different HF low frequencies connected with one coaxial feeder.

They also made a dipole for the **24**, **15** and **10** metre frequencies that was fixed on top of the clock tower which tower is **34 metres** high.

9H1ES, **Fortunato** as usual brought some military radio equipment and had what was known as the **19 Set** and **RT-77/GRC-9** that works both on batteries as well as by means of a hand generator.

There were a number of radio amateurs that went there for some time and other people who started asking about our hobby, among them children who asked many questions and appeared interested.

Such activities serve as good publicity for **MARL** and our hobby and anyone who knows about the holding of a similar or other activity that **MARL** could participate in please inform us in good time so that we can make the necessary arrangements.

It is here fitting that we thank the Mtarfa **Mayor** and the **Local Council** and all those who gave us support and help so that as **MARL** we could take part in this activity and we hope that we have many similar occasions.

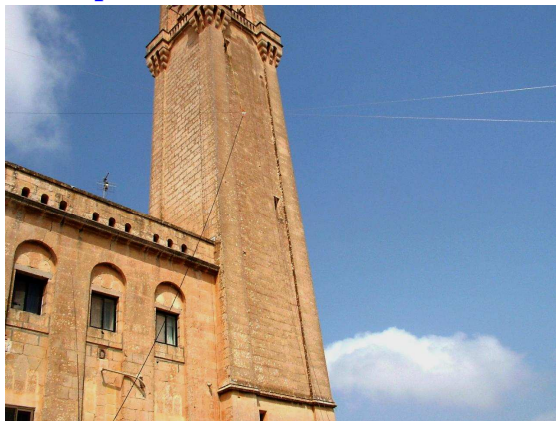
Today I am going to give you some photos of this activity while in the next edition of this magazine I am going to continue more interesting photos even about the clock itself which I have no doubt are going to interest you.



Two dipoles with a common coax feeder



Rotary dipole on top of the Tower



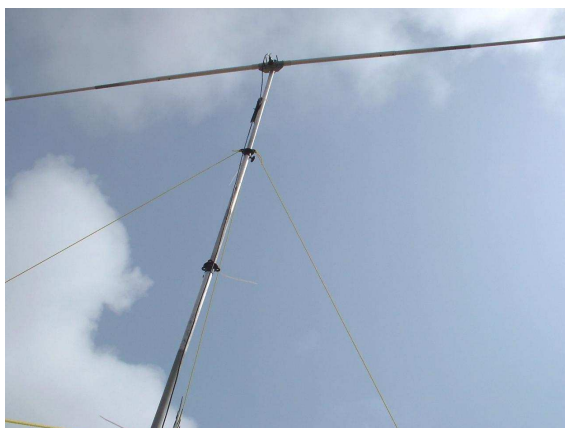
Two dipoles with a common coax feeder



Rotary dipole on top of the Tower



In the photo centre can be seen the 9H1BBS antennas between the two towers



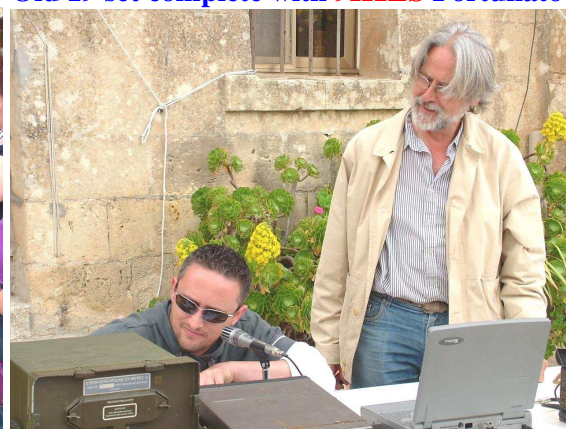
Rotary Dipole



Old 19 set complete with 9H1ES Fortunato



**Front 9H1ES, 9H1VW turning the generator
Back 9H1PI and 9H1LR Ray**



9H1PI and 9H1ZZ



9H1PI talking



9H1XE, 9H1AQ 9H1AJ 9H1VW

Some people had asked about the photos which are a little small and that if perhaps they are made bigger they will be more detailed. The problem is not to have along Magazine with many pages. Whoever wants to should not have any difficulty in copying the photos on a word document and then he can increase or decrease the size as much as he wants and also increase the brightness, contrast and colours as he wishes. Photos by **9H1AV**

Lawrence
9H1AV/9H9MHR

Radio Amateur Examination

The Secretary wished to notify that the Malta Amateur Radio League (**MARL**) is going to hold the Radio Amateur Examinations at its Centre Notabile Road, H'Attard, on **Saturday 27 June 2009**.

The exam is in two parts: In writing (from 9 a.m. to 11.15 a.m.) and (practical) Morse code from 12.00 to 1.00 p.m. The written exam costs **€35** while the Morse test costs **€7**.

We wish to inform you that if the candidates finish the written exam prior to the time allocated the Morse code exam may commence before the time stated and therefore please try to be there a bit earlier.

Applications should be submitted by **Sunday 21 June**. Bring along a colour photocopy of your ID Card from both sides and on your application write down your mobile phone number and e-mail address.

For more information call the Secretary on 7943 7808 or e-mail **ivan.privitera at gmail.com** (Exam info) or in person at the **MARL** Centre on **Tuesdays** and **Thursdays** from 6.00 p.m. to 8.00 p.m. and **Sundays** from 10.0 a.m. to 12.00.

Ivan Privitera
9H1PI

Lead-Acid Accumulators

Every radio amateur is certainly familiar with these batteries, whether they are open gassing, sealed or even gel electrolyte. All are based on the same electro-chemical reactions which were identified some 150 years ago.

However, the charge/discharge characteristics of a modern accumulator are dependent on the physical construction of the electrodes and separators. Basically, these batteries have been mass produced for two different applications:

- Automobile Starting, Lights and Ignition (SLI), which satisfies demands for sudden high currents. As its name implies, it is useful for automobile applications.
- Deep discharge, which satisfies capacity demands for a long steady discharge. This is generally used for electric vehicles (golf carts, fork-lift trucks, etc.)

As many have discovered, the normal car battery does not tolerate being discharged.... It will not recharge fully again and loses charge retention. Unless you are prepared to buy a new battery, never keep trying to start an unresponsive car engine until the starter will not turn any more.

Similarly, the deep discharge batteries do not tolerate high current discharge (avoid short-circuiting the terminals).

So beware if you operate a mobile rig off your car battery that you never allow the battery terminal voltage to drop below 11.8 volts.

Thanks to **9H1ZZ Robin** for this article.

Voltages for modern equipment

If one had to compare the weight of old equipment with the weight of modern equipment such as computers and other things s/he will find that new equipment weighs much less than old equipment.

Apart from everything being made from steel, aluminium and other thicker metals and therefore heavier, today the voltages are less, but at the same time they take a heavier current that they require.

If one had to see how the required voltages and currents used to be obtained one would find a transformer that used to be as big as the power required by the equipment, but in many cases it used to be big, those called laminations, that is thin iron plates isolated from one another as well as copper wires that had to be used.

The thickness of the laminations and wires depends on the voltages and currents that were required to be provided that the transformer was required to supply for the equipment to be able to be made to work and more so that the transformer and the required power supply would have a safety factor and will not be burned because the current demand would be greater than they can supply.

As I said further up, today equipment does not weigh as much as the old one and this both because developments that were made mean that with integrated circuits that were so developed millions of transistors can be put on, e.g., half an inch square, while also how the required voltages are derived is a different new system.

The previous system was that there used to be a transformer that gave the required voltages and rectifiers to change alternating current to direct current (A.C. to D.C.), capacitors that filter the voltage to remove AC voltage variations and some other circuits that were required, e.g. voltage stabilizers.

There was also another reason why transformers and capacitors were big. This is because the A.C. voltage frequency is, in Malta's case, 50Hz although previously it was 100Hz. There were also services places that used to also use 400Hz and also 800Hz for equipment such as radar, but the public system was 100 Hz or 50 Hz. Other countries such as America use 60 Hz.

Therefore, transformers required more material while capacitors had more work to do because if you used half wave rectification you had to filter 50 Hz to remove the voltage variations when you change it to direct current (D.C.).

In case you used full wave rectification you had to filter 100 Hz to remove the voltage variations when you change it to direct current (D.C.)

Today there is a system where by means of specific circuits the frequency is increased to 40 kHz or 50 kHz and thus both the transformer as well as other components such as capacitors can be much smaller than if they are being used on 50 Hz or 60 Hz as they were before.

Thus, both the material as well as the expense will be lower than if you continue to use the previous system and the equipment can be made not only lighter but also at less expense and can thus be bought by more people.

This does not mean that all equipment is being so made, because there are limitations especially where high power equipment is required, although today there is such equipment even of 1 Kw.

These systems are known as Switch Mode Power Supplies (**SMPS**) and also as **DC** to **DC** converters and it is really very interesting how the system works and is used in many equipment, even that of radio amateurs.

Therefore, I suggest that whoever is interested, and I believe that every radio amateur should be interested, can go to the internet weblink where there is a very good explanation complete with photos of how this equipment works.

The link is <http://www.hardwaresecrets.com/article/327>

Lawrence
9H1AV/9H9MHR

Spring Fair at Sant'Anton Garden



9H1SF Steve G3TQM/9H3BX William and XYL



9H1JM Joe 9H1ES Fortunato 9H1ZZ Robin



9H1AJ Joe 9H1ES Fortunato 9H1ZZ Robin



9H1XE Edwin

The Sun and its spots

All radio amateurs know about the sun and its spots that affect propagation on short wave. They also know that at certain times, solar flares are emitted which are explosions that affect the propagation as well as causing certain effects on the earth and all electronic and electrical equipment.

Anyone who has studied a little about propagation and especially radio amateurs also know how the sunspots go through a Cycle of around eleven years where their number increase to a maximum and goes down again to a minimum, sometimes there will be no sunspot, and afterwards it again increases to a maximum.

Today therefore I am going to give you some information on the next Cycle which is Cycle 24 that I have downloaded from the NASA internet webpage.

According to NOAA experts that have just made a new forecast, Cycle 24 is going to reach its peak in May 2013.

They said that even if their predictions are good, the Cycle sunspot number will reach 90, the lowest number of every cycle since 1928 when Cycle 16 had 78 spots. This was said by the NOAA Space Weather Prediction Centre chairman Doug Biesecker.



He said that It is tempting to describe such a cycle as "weak" or "mild," but that could give the wrong impression.

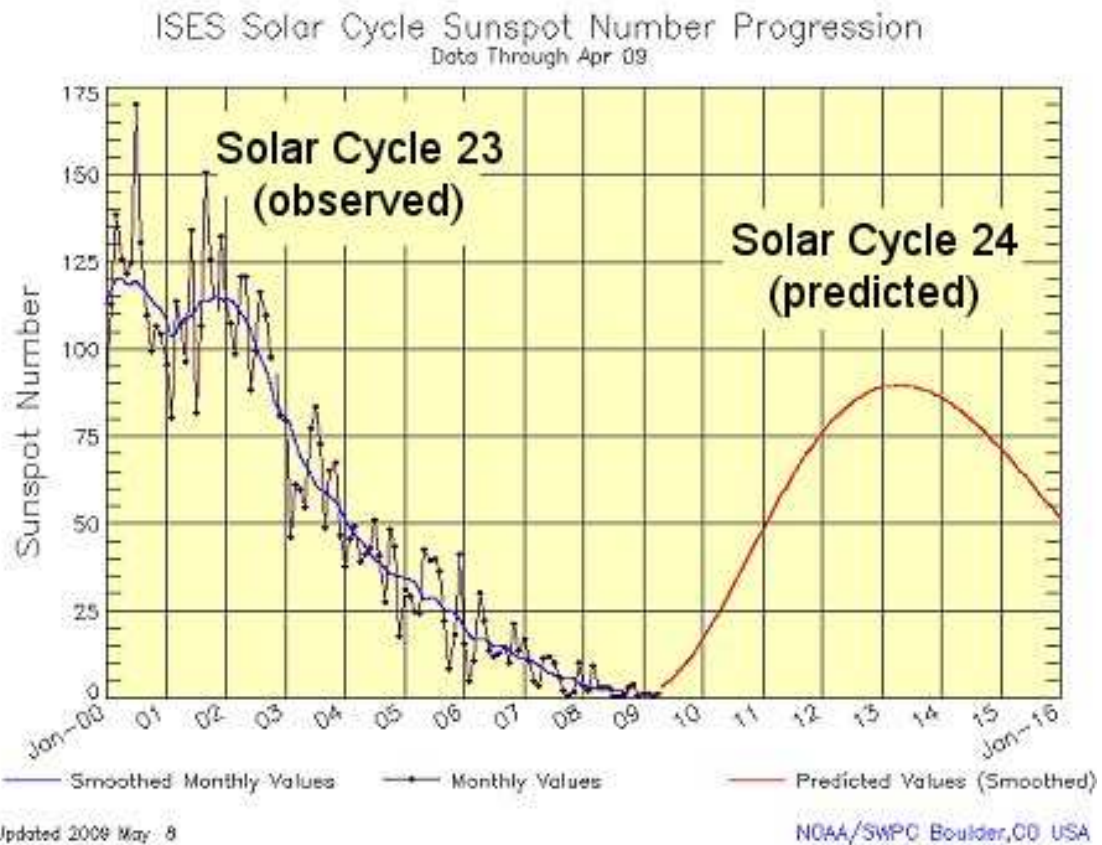
(On the left you have a flare caused by an explosion on the Sun's surface as caught by NOAA's GOES-13 satellite in December 2006.)

He continued to say that "Even a below-average cycle is capable of producing severe space weather," points out Biesecker. "The great geomagnetic storm of 1859, for instance, occurred during a solar cycle of about the same size we're predicting for 2013."

The 1859 storm--known as the "Carrington Event" after astronomer Richard Carrington who witnessed the instigating solar flare--electrified transmission cables, set fires in telegraph offices, and produced Northern Lights so bright that people could read newspapers by their red and green glow.

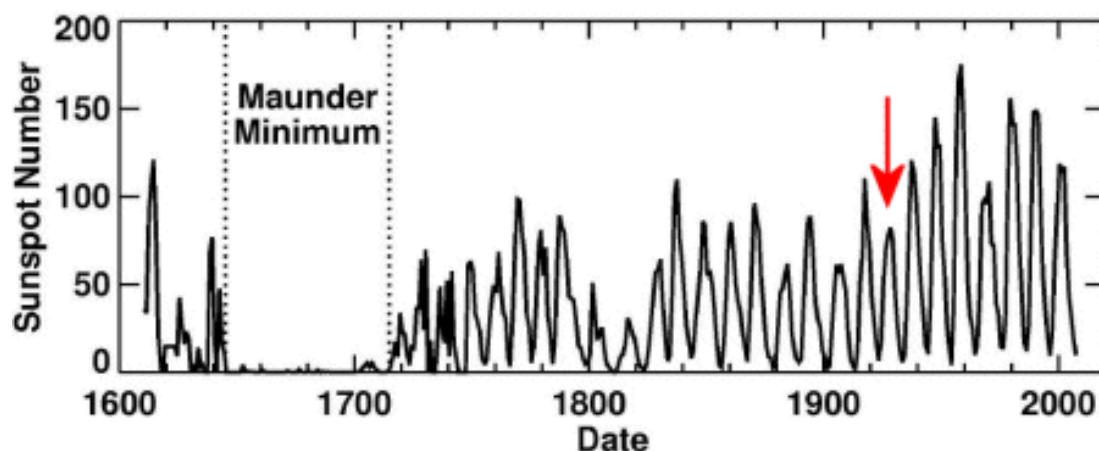
A recent report by the National Academy of Sciences found that if a similar storm occurred today, it could cause **\$1 to \$2 trillion** in damages to society's high-tech infrastructure and require four to ten years for complete recovery. For comparison, Hurricane Katrina caused "only" **\$80 to \$125 billion** in damage.

The latest forecast revises an earlier prediction issued in 2007. At that time, a sharply divided panel believed solar minimum would come in March 2008 followed by either a strong solar maximum in 2011 or a weak solar maximum in 2012. Competing models gave different answers, and researchers were eager for the sun to reveal which was correct.



This plot of sunspot numbers shows the measured peak of the last solar cycle in blue and the predicted peak of the next solar cycle in red. Credit: [NOAA](#)/Space Weather Prediction Centre.

"It turns out that none of our models were totally correct," says Dean Pesnell of the Goddard Space Flight Centre, [NASA's](#) lead representative on the panel. "The sun is behaving in an unexpected and very interesting way."



Yearly-averaged sunspot numbers from 1610 to 2008. Researchers believe upcoming Solar Cycle 24 will be similar to the cycle that peaked in 1928, marked by a **red** arrow. Credit: [NASA/MSFC](#)

Researchers have known about the solar cycle since the mid-1800s. Graphs of sunspot numbers resemble a roller coaster, going up and down with an approximately 11-year period.

At first glance, it looks like a regular pattern, but predicting the peaks and valleys has proven troublesome. Cycles vary in length from about 9 to 14 years. Some peaks are high, others low. The valleys are usually brief, lasting only a couple of years, but sometimes they stretch out much longer.

In the 17th century the sun plunged into a 70-year period of spotlessness known as the **Maunder Minimum** that still baffles scientists.

Right now, the solar cycle is in a valley--the deepest of the past century. In 2008 and 2009, the sun set Space Age records for low sunspot counts, weak solar wind, and low solar irradiance. The sun has gone more than two years without a significant solar flare.

"In our professional careers, we've never seen anything quite like it," says Pesnell. "Solar minimum has lasted far beyond the date we predicted in 2007."

In recent months, however, the sun has begun to show timorous signs of life. Small sunspots and "proto-sunspots" are popping up with increasing frequency. Enormous currents of plasma on the sun's surface ("zonal flows") are gaining strength and slowly drifting toward the sun's equator.

Radio astronomers have detected a tiny but significant uptick in solar radio emissions. All these things are precursors of an awakening Solar Cycle 24 and form the basis for the panel's new, almost unanimous forecast.

According to the forecast, the sun should remain generally calm for at least another year. From a research point of view, that's good news because solar minimum has proven to be more interesting than anyone imagined.

Low solar activity has a profound effect on Earth's atmosphere, allowing it to cool and contract.

Space junk accumulates in Earth orbit because there is less aerodynamic drag.

The becalmed solar wind whips up fewer magnetic storms around Earth's poles.

Cosmic rays that are normally pushed back by solar wind instead intrude on the near-Earth environment.

There are other side-effects, too, that can be studied only so long as the sun remains quiet.

Meanwhile, the sun pays little heed to human committees. There could be more surprises, panelists acknowledge, and more revisions to the forecast.

"Go ahead and mark your calendar for May 2013," says Pesnell. "But use a pencil."

Lawrence
9H1AV/9H9MHR

New prefixes in Portugal

As from 1 June in Portugal new qed jintużaw nominattivi ġodda għad-dilettanti tar-radju ġodda li juru il-klassi tal-liċenzja ta' l-istazzjon.

These are **CT7** for **Portugal**, **CT8** for the **Azores**, and **CT9** for **Madeira**. The prefixes for novices start from **CS7** for **Portugal**, **CS8** for the **Azores** and **CS9** for **Madeira**. These are also called **New Class 1** and New **Class 2**.

A New Class called **Class 3** is going to have **CR7** for **Portugal**, **CR8** for **Azores** and **CR9** for **Madeira**.

Old radio amateurs remember that these prefixes were used in **Mozambique**, **Portuguese India**, and **Macao**.

The call signs that are already in use will remain the same and as an example **CU1** to **CU9** are for the **Azores**. **CR1**, **CR2** and **CR8** are going to be used for special event and contests.

7MHz

Everybody knows that from March this year, the width of frequencies allocated to radio amateurs on **7MHz** has been increased from **7MHz** to **7.2MHz** internationally. One can say that broadcasting stations have left from between **7.1MHz** to **7.2MHz**, but if one listens on **7.165MHz** and sometimes on **7.175MHz** one can hear a lot of noise.

This is none else than **Radio Ethiopia** that is jamming **Radio Voice of the Broad Masses** from **Eritrea** on **7.165MHz**. **Ethiopia** jams transmissions in **Amharic** from other stations, such as **Deutsche Welle**, on **11MHz** and **15MHz**.

The transmissions are broad between **10kHz** to **16kHz** while last year Ethiopia commissioned 3 or 4 new transmitters some of which are being used to jam transmissions from other stations.

This shows how in these countries there is the law of the jungle and they do not respect international decisions because first of all these frequencies are allocated internationally to radio amateurs and these countries use them just the same while the others do not want others to transmit information towards areas that they do not wish to receive information.

Lawrence
9H1AV/9H9MHR

Activities

Yahoo Group

Be attentive and become members in the yahoo group to be fully informed with the latest activities that we intend to hold.

Lawrence
9H1AV/9H9MHR