

STARLITE

THE JOURNAL FOR THE STOURBRIDGE AND DISTRICT A.R.S.



**G6OI
G6SRS**



ISSUE: SEPTEMBER 2021



G4CVH

**STOURBRIDGE & DISTRICT AMATEUR RADIO SOCIETY
INCORPORATING
OLDSWINFORD HOSPITAL SCHOOL RADIO CLUB**

MEETINGS NORMALLY HELD AT

**OLDSWINFORD HOSPITAL SCHOOL
HEATH LANE
STOURBRIDGE
[8:00 TO 10:00 PM]**

VISITORS ALWAYS WELCOME

**DURING COVID, THE SOCIETY HOLDS ITS MEETINGS
EVERY MONDAY ON 2M FM AND ZOOM VIDEO**

RSGB AFFILIATED SOCIETY

STARLITE

Telephone Enquiries to:-

Hon. Secretary
John Clarke M1EJG
[01562] 700513

Or by Email to:-

honsec@g6oi.org.uk
johnclarke.m1ejg@btinternet.com

All correspondence/enquiries should
be addressed to the Hon Secretary at:-

StARS
c/o The Mill House
21 Mill Lane
Blakedown
Kidderminster
DY10 3ND

StARS Website URLs:-

www.g6oi.org.uk
<http://g6oi.ross-lewis.co.uk>

StARS Facebook Page:-

<https://www.facebook.com/groups/stourbridge.ars/>

Forthcoming Meetings

September 6 th	Club Net 145.325MHz FM & Zoom Video. 8pm
September 13 th	Club Net 145.325MHz FM & Zoom Video. 8pm
September 20 th	Zoom Presentation By A Guest Speaker. 8pm
September 27 th	Club Net 145.325MHz FM & Zoom Video. 8pm
October 4 th	Club Net 145.325MHz FM & Zoom Video. 8pm
October 11 th	Club Net 145.325MHz FM & Zoom Video. 8pm
October 18 th	Zoom Presentation By A Guest Speaker. 8pm
October 25 th	Club Net 145.325MHz FM & Zoom Video. 8pm
November 1 st	Club Net 145.325MHz FM & Zoom Video. 8pm
November 8 th	Club Net 145.325MHz FM & Zoom Video. 8pm
November 15 th	Zoom Presentation By A Guest Speaker. 8pm
November 22 nd	Club Net 145.325MHz FM & Zoom Video. 8pm
November 29 th	Club Net 145.325MHz FM & Zoom Video. 8pm
December 6 th	Club Net 145.325MHz FM & Zoom Video. 8pm

Editor's Comment

Historically, I included SSB Field Day in the Calendar. However, as I do **NOT** receive any forward planning information from the Society's officers, I presume nothing has been arranged for this activity, so I have deleted it from the Calendar. It is hoped that our activities will resume in 2022, if not a little sooner.

During a recent 2m/Zoom meeting, it was mooted that, with the uncertainty of our future at OSH, it may be prudent to begin looking for a possible alternative venue for our meetings, when it is time to resume them. If you have any ideas for this, please contact the Hon Sec, John M1EJG (email address on page 2 above), with your suggestions.

In this issue, I have included some general interest and news items, but there are two items from Jim G4WAO, *The Magic Fluid* (from a 1911 Australian newspaper) and *The Story Of The Radio Hat*. Also one from John G8UAE *Off Centre Fed Dipole Antennas*. This makes the issue somewhat larger than normal.

I have, recently, been considering renewing my interest in Morse code. When I learned it, back in the 1980s, I achieved a speed of 32wpm, hand sent on a straight key and head decoded – no pencil and paper at that speed! Fast forward to today and, due to not using it for 30 years, I guess my speed has gone down to 10 or 11wpm at best. Not very encouraging, so practice must be a priority if I want to get back to an acceptable 18-25wpm. How do I achieve this? When learning, my father (G0KZM) and I attended a weekly course at Ounsdale High School, Wombourne, hosted by Malcolm G4DVE. Further learning, at home, saw me using a Microwave Modules Morse Tutor, doing 3 x 1 hour sessions every day until I passed my test. With these memories, I looked on eBay for a Morse tutor, not finding any older ones, but I did see (and ordered) one very similar to a Datong D70, which was a popular unit in the 1980s and 1990s. A nice unit and very easy to use. It cost £35 + pp and I make no apology for including details in this issue. BTW I only ever used a straight key, simply because I could never get to grips with side-swiper, paddle or iambic keyers.

I often wonder if anyone reads anything in Starlite. If you do, it would be great to get some feedback to let me know I'm not wasting my time. If you wish to see something different in these pages the solution is in your hands. Please bear in mind that I know nothing about satellite or digital communications, so it's no use my trying to write anything about these (or other) subjects.

Please send any information or submissions for *Starlite* to
The Editor at:

g4xom@g6oi.org.uk

Foundations of Amateur Radio

Removing technology for a change

My first ever interaction with amateur radio was a field day on Boterhuiseiland near Leiden in the Netherlands when I was about twelve. The station was set-up in an army tent and the setting was Jamboree On The Air, or JOTA. My second field-day, a decade ago, was a visit to a local club set-up in the bush. At that point I already had my licence and I'd just started taking the first baby steps in what so-far has been a decade long journey of discovery into this amazing hobby.

A field day is really an excuse to build a portable station away from the shack and call CQ. A decade on, I vividly remember one member, Marty, now VK6RC, calling CQ DX and getting responses back from all over the world.

From that day on I looked for any opportunity to get on air and make noise. Often that's something I do in the form of a contest. I love this as a way of making contacts because each interaction is short and sweet, there's lots of stations playing from all over the planet and each contest has rules and scores. As a result you can compare your activity with others and look back at your previous efforts to see if you improved or not.

As you've heard me repeatedly say, I like to learn from each activity and see if there are things I could have done differently. I tend to think of this as a cycle of continuous improvement.

A few months ago a friend asked me if I was interested in doing a contest with him. For me that was a simple question to answer, YES, of course!

Over the last few months we've been talking about how we'd like to do this and what we'd like to accomplish. For example, for me there's been a regular dissatisfaction that during portable logging I've made mistakes with recording the band correctly in the log and having to manually go back and fix this, taking away from making contacts and having fun. To prevent that, I wanted to make sure that we had electronic logging that was linked to the radio in the same way as I do in my shack, so it didn't happen again. It was a small improvement, but I felt it was important.

Doing this meant that we'd either need to sort out a computer link, known as CAT, or Computer Assisted Tuning for his radio in the vehicle, or bring my radio, CAT control, power adaptors as well as bring a laptop, power supply and last but not least find space in the vehicle to mount all this so it would work ergonomically for a 24 hour mobile contest. The vehicle in question is the pride and joy of Thomas VK6VCR, a twenty-odd year old Toyota Land Cruiser Ute with two seats, three if you count the middle of the bench, and neither of us would ever be described as petite, so space is strictly limited.

In playing this out and trying to determine what needed to go where, we discovered that this wasn't going to work and I made the bold proposal to go old school and use a paper log.

This would mean that we could use the existing radio, without needing to sort out CAT control, the need for any power adaptors, no space required for a laptop, no power for that, no extra wiring in the vehicle, and a whole lot more simplicity. So that's what we're doing, paper log and a headlamp to be able to see in the dark.

I must confess that I'm apprehensive of this whole caper, but I keep reminding myself that this too is an experience, good or bad, and at the end of the day, we're here to have fun. I

might learn that this was the worst idea I've ever had, or I might learn that this works great. It's not the first time I've used a paper-log, so I'm aware of plenty of pitfalls, not the least of which is deciphering my own handwriting, the ingenuous project of three, or was it four, different handwriting systems taught to me by subsequent teachers in different countries. There's the logistics of being able to read and write at an odd distance, trying to work out how to operate the microphone with the wrong hand, though we are trialling a headset and boom microphone with a push to talk button, and then there's the radio, one I've used before, but not in a contest setting and not whilst driving around on the seat of a 4WD hell-bent on rattling my teeth from their sockets.

On the plus side, I've done a contest with my friend before and he is familiar with my competitive streak and we're both up for a laugh, so I'm confident that despite the challenges that lie ahead, we're going to make fun and enjoy the adventure.

I can't wait to find out if simplifying things will result in a better experience and only trying it will tell. I'll let you know how it goes.

When was the last time you stepped out of your comfort zone and what did you do? How did it work out?

I'm Onno VK6FLAB

My Pet Peeves (or 80m Moans!)

"The operator's name would be ...", "The personal here is ...", "What is your personal?" Now, this sounds like nonsense to me and I have no idea of the origins of such inane comments and questions. If I am asked for my "personal", I would say I do not have one, but "are you asking for my name?" If anyone takes offence at this and decides not to continue with the contact, that is their choice. There is no place in the English language for such poor grammar and those who use it should be gently encouraged to use the correct terminology.

HACK (verb): *to cut into pieces in a rough and violent way, often without aiming exactly.* (Cambridge English Dictionary) With this definition in mind, if you hear someone say "*I have a couple of HACKS which may help with your project*", are they inferring that the recipient uses a hatchet or cleaver to destroy their project? Or are they trying to say "*I have a couple of TIPS which may help with your project*"? If the latter is the case, why not say TIPS? It's common sense!

And how many times can someone use the word LIKE in a sentence? Or why do people begin every sentence with the word SO? Which air-head began these trends?

And whilst we are at it, how about those sad people (male & female), who wear sunglasses on top of their heads. What is the point of this? They are not being cool or fashionable – they simply look daft. If I am not mistaken, sunglasses were designed to shade your eyes from the sun and not to be worn as a hat!

Do you have any thoughts on these comments? I feel certain that none of our members would do or say such silly things.

Off Centre Fed (OCF) Dipole Antennas (W I N D O M)

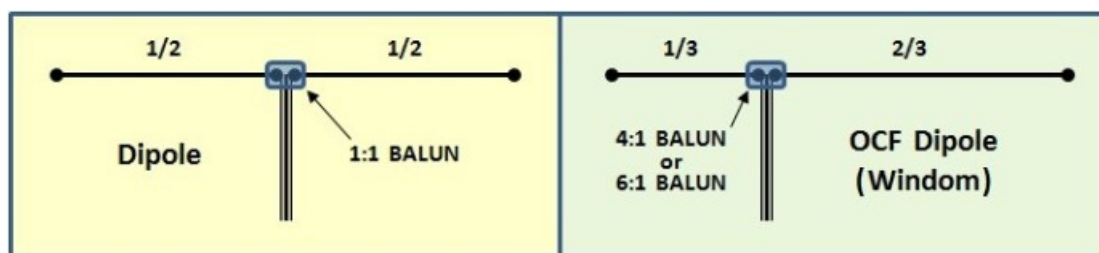
The most difficult subjects can be explained to the most slow-witted man if he has not formed any idea of them already; but the simplest thing cannot be made clear to the most intelligent man if he is firmly persuaded that he knows already, without a shadow of a doubt, what is laid before him... Leo Tolstoy, 1897.

THIS IS THE MAIN PROBLEM FACING THE WINDOM/OCFD! (DJ0IP, 2018)

Indeed, the biggest challenge we have in understanding these antennas is disregarding what we thought we already knew about them.

Although "OCF" is the more accurate term for these antennas, I like the name "WINDOM" much better and use it interchangeably throughout my writings on OCF antennas.

WHAT IS AN OFF-CENTER-FED DIPOLE ?



Whereas a Dipole is a half-wavelength long radiator, fed in the Centre of two equal length legs, the Off-centre Dipole (which I prefer to call a WINDOM) is a Dipole whose feed point is at a point removed from the centre of the antenna.

The picture above on the left shows the classical Dipole, which is usually fed with 50 Ohm coax, through a 1:1 balun.

The picture on the right above shows an OCF Dipole with the feed point positioned at the same feed point of the classical WINDOM antenna, fed with 50 Ohm coax through a 4:1 or 6:1 balun at a point 1/3 of the distance from one end.

Note: It is not imperative to feed the OCF antenna at the point shown. It is sometimes advantageous to choose a different point to feed it. Changing the location of the feed point will SIGNIFICANTLY change the characteristics of this antenna.

Why OCF?

The simple answer is: to be able to work more bands with one antenna.

A dipole is basically a mono-band antenna. It is sometimes used on its 3rd harmonic (i.e., a 40m dipole may also be used on 15m), but if it is fed with coax, it should not be used on its even harmonic frequencies. That's because the impedance of the dipole on its even harmonics is too high (typically >2K Ohms) and feed line losses are excessively high.

By moving the feed point away from the centre of the dipole, we enable the antenna to be used on more harmonic frequencies. We transform the mono-band antenna into a good multi-band antenna.

THE COST: You will need to use a 4:1 or 6:1 balun.

CAUTION: THIS IS NOT AN "ALL-BAND" ANTENNA, IT IS A "MULTI-BAND" ANTENNA.

In the past, I was a big fan of open wire fed antennas. Indeed, I used these for nearly 50 years, any time I wanted a single wire antenna to cover multiple bands.

I recently switched my multi-band antenna preference from open wire-fed/centre-fed dipoles to coax-fed OCF dipoles.

Some will argue that the 'open wire-fed/centre-fed' dipole is the most efficient antenna there is, when you are looking to cover 5, 6, 7, or even more bands with just one wire antenna. I don't dispute this point. However I do challenge the open wire-fed dipole's "perceived" position of being the "best" solution no matter what. I suggest we consider the following:

- "How much more efficient is it than other alternatives?"
- "What disadvantages does it have?"
- "For short feed line lengths, other solutions are more practical."

Open wire-Fed Dipoles REQUIRE a matchbox - on all bands, all the time.

AND that is their BIGGEST disadvantage. But it doesn't stop there . . .

In fact, the best way to match them is with a fully symmetrical matchbox, not just any old matchbox. These matchboxes are rare and very expensive compared to the more common asymmetrical matchboxes. It has taken me many years to realize that this method is not the only way to efficiently achieve multi-band performance. I have finally woken up!

INSTEAD of feeding the dipole in the middle with open wire, let's consider feeding it off-centre with coax, through a 4:1 balun. It certainly works! But what is the downside?

The downside is slightly higher losses.

HOWEVER, AS LONG AS THE FEEDLINE IS LESS THAN 100 FEET LONG, the difference remains **LESS THAN 1 dB*** "if" you build it right.

***Reality Check: Most people using open wire feed line today are not using the correct type of matchbox and as a result, incur MORE LOSS IN THEIR MATCHBOX than the loss incurred when using an OCF instead of an open wire-fed dipole.**

Done right, the performance and efficiency of the OCF approaches that of the 'open wire-fed/centre-fed dipole', without all the disadvantages.

So what can be done wrong with an OCF?

- Wrong type or poor quality of balun.
- Cheap, poor quality coax with excessive loss
- Wrong choice of design, and then compensating with a matchbox.
 - THIS is the most common thing people do wrong.

The problem with open wire-fed/centre-fed antennas like the double-Zepp is, antennas resonant on one band have a ridiculously high impedance on their 2nd harmonic. It is no different than a normal dipole, as described above. It can be difficult, sometimes even impossible to match the 2nd harmonic band without having to change the feed line length, unless you use monster matchboxes.

BTW, "monster matchboxes", especially those capable of handling high power, are very E-X-P-E-N-S-I-V-E !

Despite this fact, I owned and used monster matchboxes for many years and was completely satisfied . . . but I spent a lot of money on matchboxes !!!

Now that I am retired, I am no longer able to throw bundles of cash towards matchbox purchases. I have taken a more pragmatic look at the realities. Today the OCF is much more appealing to me than an open wire-fed dipole.

WHAT ABOUT PORTABLE OPERATIONS?

I have always been a great fan of portable operations, and when working portable, it is preferable to use antennas which require no matchbox at all, or if one is required, then it should suffice to use something tiny and low-cost.

I found this to be impossible with the traditional open wire-fed dipole.

I studied the impedance variance of dipoles as a relation of their feed point position and noticed that you don't have to move too far away from a worst case scenario to achieve a much more match-friendly impedance on most of the bands. I then sat about to find a combination of length and feed point position that enabled me to present a "civilized load" to the transceiver.

"Civilized" meaning here that the antenna has close to 50 Ohms, or at least that it can be matched efficiently by a low-cost asymmetrical matchbox.

I have used Ten-Tec transceivers for my home station for most of my 50 years on the air, because they have no problem to deliver full power, 100w all day long into a 3:1 SWR.

Many Japanese transceivers don't like this and fold back their output power in the presence of even moderate levels of SWR. These transceiver require a matchbox when others do not.

PEOPLE SHOULD ALSO CONSIDER THIS DOWNSIDE WHEN MAKING TRANSCEIVER PURCHASING DECISIONS.

I have also used JA transceivers with built-in ATUs that could match at least 5:1. This, together with an OCF has enabled me to work many bands without the need for an expensive symmetrical matchbox.

BUT IT MUST BE AN OCF WITH A GOOD DESIGN, NOT JUST ANY OCF!

Many hours of computer modelling were followed by 10x as many hours in the field, measuring, and then evaluating the OCF antenna results on my computer. Nothing seemed to work like I wanted it to.

I was almost ready to give up, when I got the idea to replace my MFJ-259B analyser with a RigExpert AA-54 analyser. The AA-54 can scan the entire HF spectrum within a few seconds, thus saving me loads of time spent taking multiple manual measurements on each band.

After I became familiar with this new analyser, I quickly came to a conclusion with my 7-band 80m OCF and soon afterwards developed a 5-band 40m OCF. Voila!

If you are serious about playing with the design of the OCF antenna on your own, do yourself a favour and invest in a good antenna analyser which can scan the HF spectrum.

I now have two OCF antennas in operation:

- a coax-fed 7-band [80m OCF](#) for home use
- a coax-fed 5-band [40m OCF](#) for portable use

I generally do not need to use a matchbox on any band; **EXCEPTION:** 80m of course.

I don't need a matchbox in the CW portion of the band - only when working in the higher SSB portion of the band. No dipole ever covers the entire 80m band without the use of a matchbox, unless you build something very exotic such as cage dipoles, etc.

DJ0IP – *Home Of Amateur Radio Practical Solutions*

International Air Ambulance Week 2021

This year's **International Air Ambulance Week** will take place between 6th - 14th September 2021, with the focus on supporting and generating donations for flying medical services around the world.

The event covers two weekends, giving amateurs a great chance to get involved and support the event.

Whilst Amateur Radio Operators / Stations are encouraged to promote the donation causes, it is requested that any donations generated go to the stations chosen local or national cause.



International Air Ambulance Week

Registration will be mandatory and all stations taking part will be issued a registration number which will be listed on this website. The registered number needs to be quoted by each station regularly. Included in the list alongside each registered station will be a clickable link enabling those wishing to donate, to donate directly to the charity of the service they wish to support.

The event is primarily intended to help support public donation funded flying medical services, whether part or entirely donation funded, though not restricted entirely to those. The location of the special event station can be anywhere you choose to set it up – club, home or if you can manage the permissions to do it, a public place.

No costs will be involved in registering or taking part and a free series of Awards will be available for those who support the event as detailed below..

An award for having registered and taken part in the event.

A Bronze award for having logged a minimum of 5 IAW station.

A Silver award for having logged a minimum of 10 IAW station.

A Gold award for having logged a minimum of 15 IAW station.

Awards for SWL will follow the the above requirements

More than one award may claimed.

Claims for the awards will need to be made to the IAW's Award Manager including an excerpt from the log as proof of a valid claim.

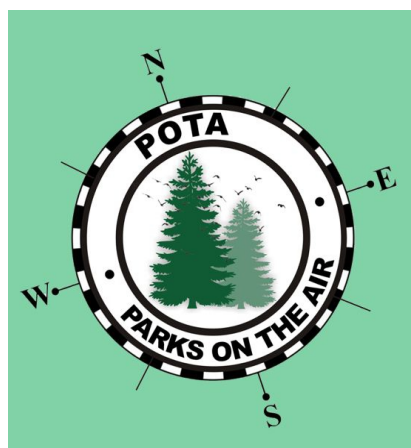
The event's date has been set to coincide with the UK's own funding drive week for its own helicopter ambulance services. Almost all of these, around 30 in number, are entirely public donation funded.

The event is intended to commence on the fourth weekend of September annually and is to be run by the same team which operates the well established International Museum Weekends.

Event Website- <http://www.radio-amateur-events.org/IAW/Registration.htm>

It doesn't matter who you are in life, it matters that the person in the street that you might not know saves lives. UK Air Ambulance Charities save countless lives every single day of the year!

PARKS ON THE AIR (POTA): WHAT IT'S ALL ABOUT



Last night I went to a cracking talk on Parks on the Air or POTA. I knew very little about POTA, most of my information coming from my Amateur Radio friends in the USA.

As I understand this scheme started out from an ARRL event to activate all the National Parks in the USA, during a year. So many Radio Amateurs became involved that following the year there was a high level of interest in working from National Parks. As a result Parks on the Air was born.

In some ways it is similar to SOTA (summits on the Air), with parks being a lot more accessible, and with POTA you can I understand work from a motor vehicle.

POTAs main website is at <https://parksontheair.com/> everything you might expect is there, however there is currently very little information on what is happening from a point of view of England, this I am sure will be resolved by Andy 2E0UAW who is the English Administrator. Scotland and Wales being separate, so there are at least a couple of Job opportunities.

As with SOTA you have activators and chasers (hunters in POTA terms), you are required to make at least 10 QSOs in any mode you like, however as you would expect you can not use a land based repeater, however you can make contact via a satellite (this could be useful if you park you are operating is down in a valley).

You can't just operate any old park it has to be on the POTA database, and this mainly applies to National Parks, Country Parks and AONB like the Lincolnshire wolds for example. I did check on the POTA database this morning but I could find details of any sites in the UK, however this may be operator error! – I will drop Andy a message and I am sure he will be able to help.

In my current poor state of health this could be something that I can both enjoy and do, I do love SOTA, but major mobility problems at the moment mean that activating is not currently an option. However it could be with POTA.

Parks on the Air, have as you would expect a facebook site and there is some activity on twitter, surprisingly they also use slack and once you have registered on the POTA site you can get details on how to join the slack channels.

All being well I will be able to try an activation soon and will report back.

UPDATE: I was correct user error the English Location details can be found at <https://stats.parksontheair.com/reports/park-info-select.php?entity=England>

Which from the Main screen at <https://parksontheair.com/> take the link click here for details of other countries and select England.

Posted 1 July 2019 by M0PJA on Amateur Ham <https://www.amateurham.org.uk/parks-on-the-air-pota-what-it-all-about/>

Morse Tutor. Fully Built with case. NEW Version T20 V2

This is the new version of the T20ver2 Morse tutor, now with a complete rebuild internally. More powerful and many more features for the same price! Most of the features have been imported from its big brother the FMT Tutor (just no screen).

Now 7 Tutor Modes:

Works as practice oscillator for Straight AND Paddle keys (user selectable Iambic A or B modes)

This is a Fully Built version of my new Morse tutor the T20, designed to be very easy to operate (no menus), just push the button to change between the 7 modes and adjust the gap, speed, and volume to suit.

(If you're of a certain age, it's very much like the old Datong D70 of the 80's, but with extra modes and more features)

Modes are:

Random Letters (5 fig groups)

Random Numbers (5 fig groups)

Mixed Letters and Numbers

Random Prosigns

International Callsign mode

Common words and abbreviations

Contest Mode (Callsign, Serial Number, and short QSO ending), in this mode the speed and pitch of each callsign will change by up to 15%

Fixed Low level Audio output that can be connect to a PC and used with free CW decoding software to see what the tutor is sending or to check your own sending! Also can be used with Zoom or MS teams for over the internet Morse classes.

Also if a straight key OR a paddle key is plugged in you can use it as a practice oscillator too. (adjustable speed for Iambic practice).

A DC power socket is on the rear for 7-14 volts input, although it can be powered by an internal PP3 9 volt battery for portability.

Great little tutor, great price and value.

Finally, the last addition to the tutor is a session timer, the little red power LED is in fact processor controlled, if the processor is happy then the LED will be on. But every 10 Mins the LED will light bright green. This is warning to you to take a break. Practising too long at a time is not advised. Try 2 (or 3) 10 min sessions a day to really help your receiving skills.

Thanks Paul M0BMN www.phoenixkitsonline.co.uk



Revised prediction for Solar Cycle 25

A revised prediction from the NASA High Altitude Observatory based at the University Of Colorado.

NASA Heliophysicists have released a revised prediction for Solar Cycle 25. The report generated by Ricky Egeland a Solar Physicist working in the NASA Space Radiation Analysis Group now calls for the peak of Solar Cycle 25 to top out at a value of 195 ± 17 based upon the new scale for calculating Smoothed Sun Spot Number. For reference Solar Cycle 21 peaked at an SSN 233 (new scale) while Solarcycle 23 peaked at an SSN of 180 (new scale). If this predictions holds up Ham Radio will see Excellent Worldwide F Layer Conditions on 10 Meters for several years around Solar Max. 6 Meters conditions should be good in the Equinox Periods before and after Solar Max with consistent openings on Medium Haul Polar Routes. 6 Meter routes traversing the equator should experience consistent openings ± 9 months from Solar Max.

Ricky Egeland is a participating member in the group headed up by Scott McIntosh and Bob Leamon that published a paper 9 months ago outlining the existance magnetic bands within the Sun that govern the Sunspot and Hale Cycles. At the time of its publishing the paper went on to predict the peak of Solar Cycle 25 could be as high Solarcycle 21. Today's released is a revised prediction based upon data observed since the original paper was published. To be sure we are still in early days.

The Solar Rotation Cycle as marked by Sunspot Activity was established on April 19, 2021 so we are only 90 Days into actually observing Cycle 25 Activity. It is now agreed the dramactic run-up in Sunspot Activity we experienced late Last Fall while tied to Cycle 25 was an outlier. When asked directly about whether they can declare if the Terminator Event they wrote about in the Fall 2020 Paper has occurred Scott McIntosh stated "We can't be sure just yet but we are very very close". It also should be noted that while it has been over a year since the sun produced a Cycle 24 Region with a Sunspot worthy of a NASA Classification the Sun has been steadily producing Spotless SC 24 Active Regions the last of which formed right on the Solar Equator at N00-W54 on July 24,2021 as recorded by Jan Alvestad's Solar Terrestrial Activity Report Website. These Active Regions being part of a Solarcycle in its final stages of existence produce no spots and only last for a few hours before they dissipate away. The previous SC24 Active Region formed on June 28, 2021. Once the SC24 active regions cease forming Solar Cycle 25 will take off in earnest.

Bob Marston AA6XE

HF radars continue to be troublemakers, IARU Region 1 Monitoring Service says

SARL News reports the biggest headache for International Amateur Radio Union Region 1 Monitoring Service participants continues to be HF over-the-horizon radars (OTH-Rs). Already an interference issue for several years, OTH-R activity seems to be multiplying exponentially.

Most of the stations are located in China and Russia. "The same troublemakers every month, the OTH-Rs are by far the most troublesome!" said IARUMS Coordinator Peter Jost, HB9CET, in the April edition of the IARUMS Monthly Newsletter.

Monitor reports from Europe and Africa showed OTH-R signals littering the 20-metre phone band, with some also showing up as high as 15 metres, as well as down on 40 metres and lower. These include the infamous "Foghorn" OTH-R, so-called because of the sound of the approximately 10 kHz wide transmissions, mostly in short bursts. The Russian Kontayner OTH-R has also been spotted on 20 metres and elsewhere, generating an approximately 12 kHz bandwidth signal. "What is always surprising is how strongly intruders from the Far East can be heard in IARU Region 1, sometimes even during the day in the 40-metre band, e.g., the 160 kHz wideband radar or also some other radars like the 'Foghorn' or similar," Jost said.

A newcomer of sorts has been Super Dual Auroral Radar Network (SuperDARN) HF radar signals causing interference to radio amateurs on 14,210 MHz and possibly elsewhere. The SuperDARN system is an international scientific radar network consisting of 35 HF radars in both the Northern and Southern Hemispheres. These radars are primarily used to map high-latitude plasma convection in the F region of the ionosphere, but they are also used to study a wider range of geospace phenomena, including geomagnetic storms.

SuperDARN network radars look into Earth's upper atmosphere and operate continuously to observe the motion of charged particles (plasma) in the ionosphere and other effects that provide scientists with information on Earth's space environment. Knowledge gained from this work provides insight into space weather hazards, including radiation exposure for high-altitude travellers and disruptions to communication networks, navigation systems (GPS) and electrical power grids.

AM1SAT International Award

From September 13-19 **AM1SAT** will be active on the amateur radio satellites from a number of locations in Spain, diplomas will be available for contacting the stations

A translation of the URE post reads:

AMSAT-EA will celebrate in September, coinciding with the IberRadio Fair organized by URE in Ávila and which is the largest meeting point for radio amateurs in Spain and Portugal, the third edition of its International Competition and AM1SAT Award.

To do this, AMSAT-EA operators will be in the air on all available satellites with the callsign AM1SAT between the 13th and 19th of that month, activating a minimum of 14 different locations.

As part of this activity and to encourage participation, the SILVER and GOLD classifications will be available, as well as a trophy for the one who achieves the greatest

number of grids and for the one who manages to work the greatest number of different satellites.

In the last edition of the contest held in 2019, 727 QSOs were made, awarding 10 gold and 28 silver diplomas. The trophies for the best grid and satellite 'hunter' were awarded to F4DXV and EA3CAZ.

The rules in English for this year's contest can be found at

<https://www.amsat-ea.org/app/download/12828633/AMSAT+EA+-+AM1SAT+2021+-+English.pdf>

Source URE <https://tinyurl.com/IARU-Spain>

AMSAT-EA GENESIS satellites may launch September

Spain's national amateur radio society, the URE, report two AMSAT-EA GENESIS satellites are expected to be launched on September 2

A translation of the URE post reads:

The GENESIS-L and GENESIS-N satellites, designed and built by AMSAT-EA in collaboration with students from the European University and ICAI, will be launched, in a first attempt, on September 2, once the American company Firefly has carried out the static test of the Alpha launcher, this being the last step before its launch. The vehicle is ready for takeoff on its platform from Vandenberg Air Force Base in California and carries, for this inaugural flight, many other satellites from various organizations and universities.

The GENESIS are digital repeating satellites of ASK and CW and also carry Applied Ion Systems' AIS-gPPT3-1C experimental ion thrusters.

The working frequencies of the satellites are as follows:

GENESIS-L

145.875 MHz uplink, Modes: CW, ASK 50 bps

436.875 MHz downlink CW, ASK 50 bps, am2sat callsign

GENESIS-N

145.888 MHz uplink, Modes: CW and ASK 50 bps

436.888 MHz downlink CW ASK 50 bps, am3sat callsign

The description of the telemetry and the mode of operation of its repeaters can be found in the following links:

Link to telemetry transmissions description (in English)

<https://www.amsat-ea.org/app/download/12293076/AMSAT+EA+-+GENESIS+transmissions+description.pdf>

Source URE

<https://www.ure.es/satelites-genesis-de-amsat-ea-2/>

The Magic Fluid

[Written by W.E.T. for the Southern Star, Bega, Australia. January 18th 1911.]

"ANY person or persons who shall erect, instal, or operate any wireless plant or apparatus, or proven guilty of coveting possession of the same without the written permission of the P M General, shall be hanged, drawn and quartered, or mulct of a sum not exceeding £500, and all apparatus, goods, and chattels found upon such premises shall be confiscated."

The former penalty has fallen into disuse in these busy days, but the 500 golden thick 'uns there's no forgetting; and the confiscation clause doesn't even except the old boots, hats, and the togs which proclaim the man — mind you.

The writer and another conspirator stole through the darkness to a certain wash-house, and from the pole lowered the family washing as they do in Rodd and Cheg's yard. To the top we hoisted one end of an 'aerial.' A long bamboo pole, lashed to a bedpost, was thrust out from an upstairs window over the back yard. To its end was fastened the other end of the "aerial," which was nothing more than two copper wires about 30ft long attached to the end of two bamboo spreaders about 2ft long. A piece of wire like a single ladder rung led the vibrations from the aerial to the instruments, which could be shoved into an ordinary writing case. In day time the aerial, as it lies along the vine covered fence for the gentle bottle oh to see the creepers creeping on it and the bashful underwear drying out of the gaze of prying eyes, serves a useful and lawful purpose — but were its unlawful purpose known!

Every electrical discharge into the air (or ether) in the vicinity is gathered by these stretched wires. They respond under the pressure or vibrations just as a piano wire does when it is struck by the hammer, or the wind on the strings of a harp, and then conduct those tremblings to probably the crudest set of wireless extant in Australia. Conceive the "potentiometer" — it's a technical name. This wonderful high-sounding contraption translates the vibrations into sounds. It's the tuner, and is nothing more or less than a quart ink jar with fine copper wire covered surface, touching which is an old brass ring soldered to the end of a bike pump piston, with the rubber sucker doing good service as an insulated handle. The current flows around the wires and is taken off the bottle by the brass ring. The raising or depressing of the piston attachment is the famous tuning process.

You've heard the buzz of the condenser line, Mr. Editor, as you've called up our old friend, Mick O'Grady, to wish him the compliments, and to ask what temper his pegasus is in? The sound you heard is similar to wireless. That ingenious old bike pump handle is moved up slowly, and the grating blurred sound grows distinct and more evenly pitched till it sounds a clear, musical, high-pitched hum, like a note from a violin. Then the telegraphist hears dot dot dot dash, dot dot dot dash fast recurring every half second. Someone somewhere beyond the myriad of lights, that gleam in the night, perhaps away out to sea, some operator in his little cabin is perched, flashing his signals into the darkness calling V.V.V. for that letter is the universal invitation for some listener to tune up and respond C.Q., which means I'm here and will speak. He grasps his key as does the operator at the P.O. and sends his dots and dashes on their mysterious track, through brick walls or anywhere, till aerials everywhere catch the sounds, and instruments respond as if they were so many yards away instead of leagues or centuries of miles. Sparks fly between the sparking points, in this case two small brass knobs unscrewed from the top of the bed

curtain hangers! Ye gods, to what extreme will lack of funds, necessity and enthusiasm carry one? What perseverance and ingenuity. Nothing too trivial for its purpose.

An ink bottle and a bike pump make the singing spark possible, the old brooms are dismantled for their wire, the bed robbed of its ornamentations, old photographic plates and tinfoil from tobacco boxes and cigarette packets all serve useful purposes in the wonderful scheme of things. Some telephone cells and some jam bottles supply what a Bega boy truly described as the "magic fluid."

The receiver is two small telephone ear pieces wired into a leather razor strop; one fits over each ear. Pieces of clock spring are wired onto the strop and keep the heavy ear pieces pressed tightly over the ears. I inadvertently grasped the wire instead of the leather end to make its position more comfortable — — — x x x ! ! Is my head split open or did the singing spark strike me by accident? The operator laughed and said, "*It's a merry Xmas with a vengeance when it hits you, eh?*"

Gentle reader, when bored with picking winners, and the pictures don't pick you up as they used, take the receiver off the 'phone hook, hold the hook in the hand, and turn the handle with the other hand, and feel a gentle flow of energy oozing through your system. Wind hard enough and you'll leap from the effects; multiply the effect of two cells by six (at top pressure) and the lifting effect is nothing short of marvellous. The hums of the differently powered sets sounded fantastic. The Powerful's strong, booming buzz is easily distinguished. They're pitched in all keys, and every ship and station has its combination of letters to denote its name — A. W., for instance, is "Australian Wireless Office."

Listening, we read the chatter of idle operators yarning above the noise of the city — space is nothing and time is ditto. The answers are as quick as if the words were spoken. It's the same as the telegraphist or public hears over the P.O. Counter every day, but instead of the rattling and clicking, it's humming dots and dashes. You grasp the key and "send." Some fellow conspirator over the street reads your words, and so also did ships upon the high seas. When its silent one listens and hears the aerial collecting the faint electrical discharges generated by the pressing atoms of the earth's surface as it contracts in the cool night air. Crude as is the arrangement, its utility is astonishing. Wireless men who use a dynamo don't often tune down delicate enough to catch the tyro's whisper from a dozen cells, and perforce we are listeners, and not anxious to announce our business address.

But we listened to the cricket and press matter being transmitted, coded spelling from His Majesty's ships, or it may be the "Bulletin" operator calling Andy Fisher to ask what are his intentions. Notwithstanding the £500 I think there are a few little pigs with long ears listening through the night. Some day, among the chatter, they'll catch the meaningless words which may be the instant order for the Australian battleship squadron at sea to take up its position for the conflict on which hangs the destiny of the nation, whose starry sign flutters from the top of the bamboo pole on State occasions. We lowered the aerial, and hung the washing on it in the dark.

I said, "*£500 if we're caught!*"

"Yes," he replied, "*have yer got it on yer?*"

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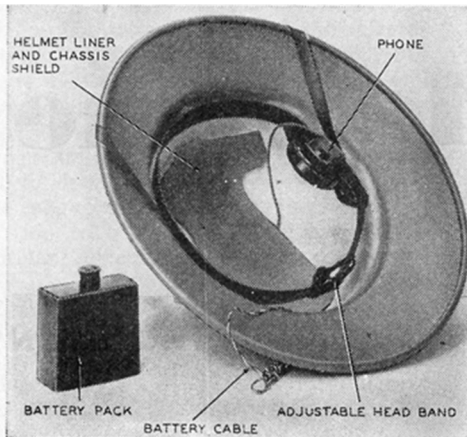
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The story of the Radio Hat, 1949

In 1949, Victor Hoefflich held a press conference to introduce the “**Man from Mars, Radio Hat**”. Hoefflich knew a picture would tell the story so he had several teenagers modeling the radio hats for the reporters and photographers. Soon pictures and news stories appeared in newspapers coast to coast. The

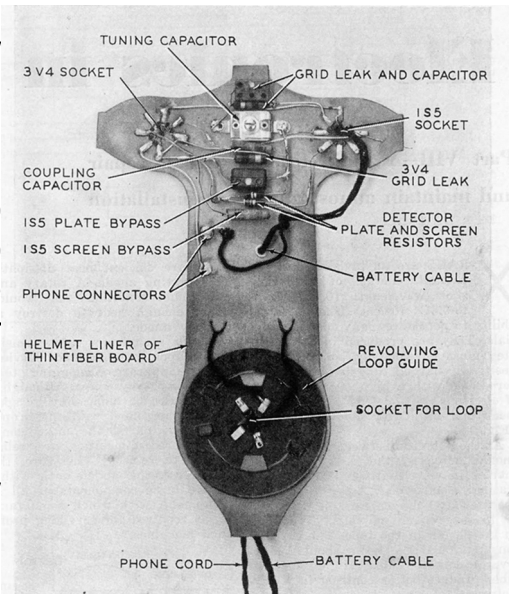
articles typically included a photo of a young lady wearing the hat and a six-paragraph story.

Although the radio hat had a futuristic appearance at the time, this was in fact due to technical limitations. While the transistor had been invented in 1947, it was still experimental and not widely available. The hat's radio relied on vacuum tube technology, and Hoefflich made the tubes a prominent feature, as well as the loop aerial. The tuning knob sat between the two valves. The battery was carried in the user's pocket.



Within the hat. Interior is perfectly smooth.

The radio hat was sold in department stores and by mail order. A Van Nuys, California service station chain sold the hats as a promotion item to customers who purchased gasoline. The radio hat retailed for \$7.95. Designed after a pith helmet, it could be ordered in eight colors: Lipstick Red, Canary Yellow, Blush Pink, Rose Pink, Tangerine, Flamingo, Chartreuse and Tan. Later seven more color options were added.



This "chassis" is covered and shielded with foil-coated liner seen in photo at left.

The massive publicity did not lead to lasting sales. Advertisements for the radio hat stopped in early 1950. Its failure was primarily due to technical limitations. It had only two valves, while household radios featured five or six, and thus, performed better. The loop antenna was directional and signal could be lost as the user turned his or her head. The Radio Hat had an advertised range of 20 miles; sometimes when tuning, it picked up stations further away, but these would be received as an annoying squeal, as the hat did not have the necessary circuitry. In a 1956 interview, Hoefflich said the company still got orders for the hat even though it was long out of production.

To see the full online article and photos, go here: <https://rarehistoricalphotos.com/radio-hat-pictures-history-1949/>

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