

FebMtg: Fri 6:30 Feb.22 at the
MCL Cafeteria in Kettering

02/22/19

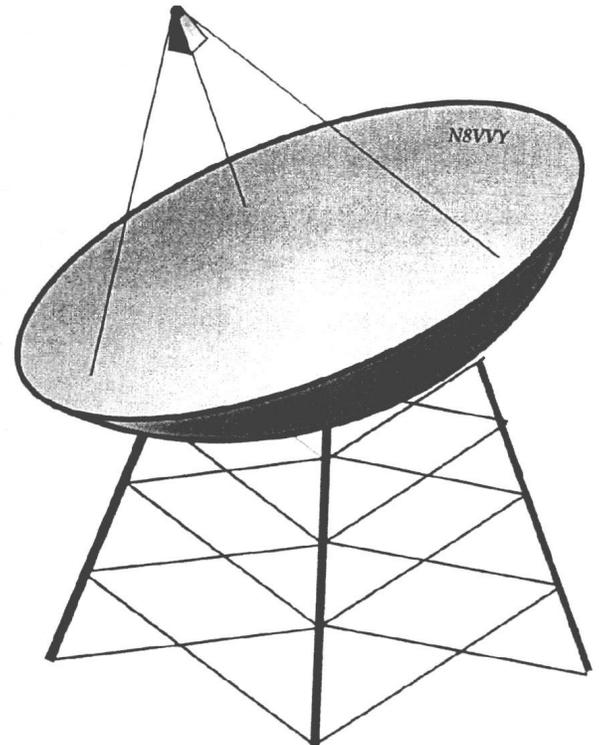
ANOMALOUS PROPAGATION

Newsletter: *The Midwest VHF/UHF
Society*

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Annual Society membership is \$ 12.00. Please
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Beacons: 1296.079 **W8KSE** EM79ur Dayton, OH---- 2W to Big Wheel at 800' AGL.

Listen for the **K9AYA Beacons** at EM79qk, 2W @ 10,368.000 MHz
 both are copied by K4TO daily. 1W @ 5,760.000 MHz

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Make plans: Hamvention May 17,18,19 2019

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DE N8ZM: I assume by now that most of you are quite tired of being cold and wet. Well, except for those of you living in southerly areas which are supposed to be warm. But which got a few cold shocks too. Makes it tough to work on antennas! Ah, but Spring is not far away, in theory, at least. Let's hope!

And in Spring, every hams fantasies turn to Hamvention, right? I hope so, anyway. MVUS will have a booth there again, in pretty much the same spot, I'm told. As I write this, the exhibitors website is not up yet, so I don't have things locked down in electronic concrete, but I have talked with the Exhibits chair and he assured me that we would be OK.

As always, I am looking to confirm volunteers to help with setup and staffing the booth, as well as teardown. Further, I'd love for us to have some things to display to attract newbies to VHF/UHF hamming, as well as making it a meeting place for MVUS members. And if things go well over the next few weeks, we might have calibrated noise sources to sell again!

In other news, there are a couple of ham related conferences coming up before May that you might find interesting. The HamSCI workshop will be in Cleveland, at Case Western in March.

<http://hamsci.org/article/hamsci-workshop-2019-registration-and-call-papers>. This group was formed by professionals in space weather studies, and did some marvelous work using radio propagation studies during the 2017 eclipse, which they are expanding on for future eclipses (whatever is the plural of eclipse anyway?).

In April is the SUPER VHF Conference near Dulles airport in the DC area. I know several MVUS folks will be there. <https://vhfsuperconference.com/>. This event will have all of the latest scoop on operating on our favorite bands and you can meet the people who are the movers and shakers, as they say.

Try not to miss either one of these events! And get registered soon! Rooms tend to be in short supply for both.

With that, I will wind up for this month, but I hope to see you on the 22nd at the MCL!

73, Tom, N8ZM.

Does fast charging reduce Batterie Life ?

It is not the speed of charging that degrades the battery. It is the heat that may build up

(compared to slower charging where heat can escape during few hours). If temperatur of the chemistry is below 40C/100F then degradation is not that noticeable. Charging itself degrades, especially charging over 4V per cell (about 80% charge state) no matter slow or fast!

Slow or fast upper voltage is always limited to ~4.2V. So fast charging will always start to slow down at a charge state of ~60-65%. Slow charging usually starts to slow down at 90% charge state, fast charging is at that same speed at 90 % (voltage 4.2V, no current flowing).

Electric vehiclesthat are rapid charged hundred of times do not show extra degradation (except at higher temperature climates).

Arniss Tarassu / Mechanical Engineering Graduate , Comment: Sep 11, 2015

This And That 2-19

Fahrenheit: Daniel Gabriel Fahrenheit began training as a merchant in Amsterdam after his **parents died** on 14 August 1701 from eating poisonous mushrooms. ... In 1717, **Fahrenheit** settled in The Hague as a glassblower, making barometers, altimeters, and **thermometers**. From 1718 onwards, he lectured in chemistry in Amsterdam. [Web]

Education. If you think education is expensive, try ignorance. [Derek Bok]

Parenting: Many parents today imitate the kids and try the best to accommodate them, while the kids look at them and imitate them as they always did! [Gerd]

Mars: As we concentrate on Mars we keep messing up Earth; that is particularly true about the space just around us, which is cluttered with Space Junk. We are now thinking of satellites that get up there collecting like the garbage trucks that come along your street once a week!. [Gerd]

Degrees by Color: A heated iron bar is dark red at 1000 F, blood red at 1200, cherry red at 1400, bright cherry red 1600, yellow straw at 2000, white at 2500 and melts at 2800 F.

How Super Conductors work: Electrons therein pair up and synchronize their movement, thus to avoid bumping into each other. [L.M. Boyd]

Fashion... is a form of ugliness so unbearable that we are compelled to alter it every 6 months. [Oscar Wilde]

Deceit. In a time of deceit telling the truth is a revolutionary act! [Oscar Wilde]

Fear. I tremble for my country when I reflect that God is just. [Thomas Jefferson]

Until I was thirteen, I thought my name was “Shut-Up”. [Joe Namath]

Aging Process. We could certainly slow the aging process down if it had to work its way through Congress. [Will Rogers]

Drinking Water. ‘I never drink water because of the disgusting things that fish do in it... [W.C. Fields]

Love. To fear love is to fear life, and those who fear life are already three parts dead. [Bertrand Russel]

Techfest Feb 16/17-2019 at Sinclair College in Downtown Dayton.

Attendance was very good this year and especially Sunday was busy with parents and their kids in tow. In general the show addresses 5 to 15 year olds, but, of course, there is one thing or another for everybody that he hasn't seen before and learns something from! I was practically all day at our two table display (No.51) in the main hall close to the East door facing Perry Str. Through the windows behind us , the club's bus with the mobile radio station was visible and ready for visitors.

In a classroom (No. 118) nearby Steve, K8UD, and approximately 20 helpers were offering 2 different radio kits: a shortwave receiver and an FM-receiver. These were meant to be put together by young kids with the help and supervision of hams. Approximately 300 kits were completed. Once finished the receivers could be turned on, and voila: there was a station to be heard... happy faces were abound and ,of course, the radio was theirs to keep.

Finally, on Sunday Steve did help out at our tables and urged me to go and take a look for myself. What I found was amazing, even though it was in my professional realm and like I hinted: I learned a thing or two.

Although there were computers and robots, rocketeers and Mars enthusiasts, firemen and weathermen, there were also a number of displays showing electromagnetism.

I had brought a book about Edison and Tesla, I had just gotten as a birthday present from my daughter Kathrin. There were many pictures in it which I like in a book! And there was one showing Tesla's famous experiment with high voltage (and low current) that he would demonstrate at parties, banquets etc!

I noticed a semi circle of little hands, mostly from girls, and the experimenter moving a probe around and touch the back of one hand at a time and had the girls each confirm and offer a comment on how it felt. I asked whether I could add my big hand at the end of the semi circle. "Sure" he said, "older people's skin usually has more resistance and you might not feel much." Well, I did feel a little tickle alright! I never thought about it much before.

We learned, every person measures a little different from the next and it matters when skin is wet and that horses are especially sensitive!...

Later that night, I guess still thinking about the high voltage, my memory dug up an episode long long ago! Going back to the years after WW2, I was about 14 to 15 years old at the time, some of my friends got interested in model airplanes, even to the point of adding a small gasoline powered motor (they used a special mix including ether). However, one of the electric things used was the single spark plug! I remember there were often problems getting a consistent spark. There was an old man who was looking on and when there was a problem with the spark he would put his index finger on the top of the spark plug and the thumb on the housing of the little single piston motor. He was functioning as our volt meter. At the time it was mysterious to us how he did it without hurting. Obviously my brain remembered it, so I thought about it now, so many years later as an unanswered question. And now I know! He certainly felt a little tickle , but his skin had through aging developed enough resistance to be perfect for a human high voltage meter. As I recall he would give the following answers: "no spark", "weak spark", or: "good spark".

Gerd, WB8iFM

Old Rotor Upgrade to USB

Jim, WB8VSU

Back about 1984 I bought a HyGain Ham IV rotor that was installed for a number of years. Then my XYL demanded we move, so it came down and moved with us. As I am starting to think about a new tower, so I thought it would be nice to have a USB based control for the rotor. The ones with that ability are fairly expensive. A few years ago I noticed a little board for \$99 unassembled or \$129 assembled, that would install in pretty much any rotor control box and provide a USB connection. At last Hamvention I bought one from Vibroplex and recently I built it and installed it into my HyGain controller. See: <http://www.vibroplex.com/contents/en-us/d75.html>

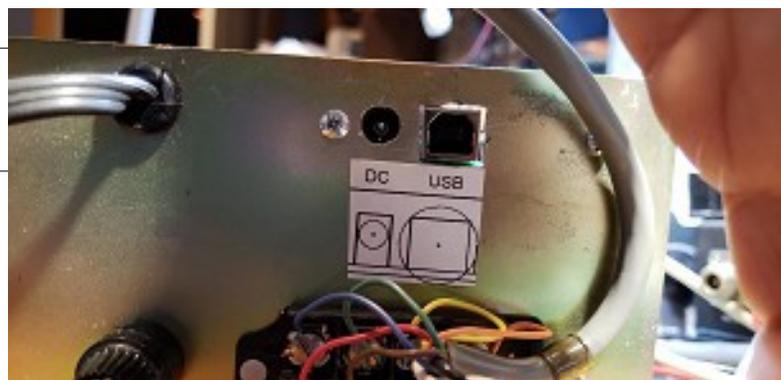
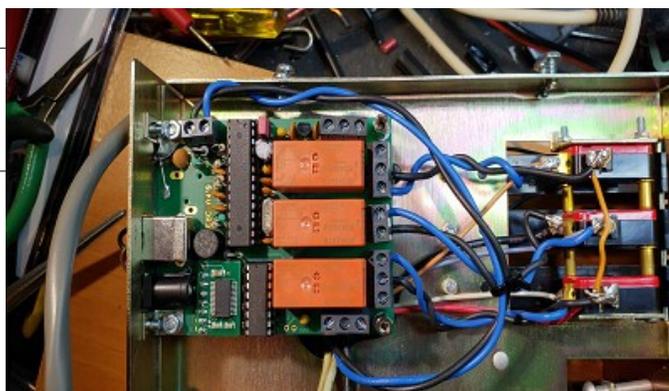
It comes with a software tool to configure the board as well as a program to control the direction the rotor is pointed if you do not have software that can do that. The software tool can set what type of rotor to emulate and the degrees of rotation verse DC position voltage.

In my case I set it for a Yaesu GS-232B instead of HyGain as it seemed to work better. Then within Ham Radio Deluxe I set it for a "Portable Rotor AZ". Once set I can give HRD a call sign, state, country or degrees and it will command the rotor to point in the correct direction. Selection of type of rotor is dependent on whether North or South is Zero Degrees. The controller can still be used manually with the board installed.

It had no issues controlling the Ham IV rotor. It has 3 DPDT relays that basically get wired across the switches in the controller along with two sense wires to go across the pot that provides a DC voltage that is relative to the rotors position. Below are the photos after it was installed. The instruction are very weak on how to build and install the board.

Pictures: Top: 1) Installed in Rotor Control Box 2) New Connections to Rotator

Bottom: 3) Connections to Position Indicator



Ansbach---Germany

By Gerd, WB8IFM

We'd been coming to Ansbach near Nuremberg for brief stays on just about every trip we made to Germany, lately about every 3 years or so, to visit with my xyl's older sister, who lives and has family in the area. We stay on the uppermost floor of the house, the attic. There are 3 rooms and a bath. They have slanted dormer windows, which you see a lot in Germany. This top floor is finished and serves as additional space for the family or for guests.

This time, by chance, I looked out a window to the north: what did I see? It looked like some strange antennas, but they were a distance away and hard to see. I forgot to bring binoculars, but had the idea of using my little camera to shoot a picture at the longest focal length taking advantage of the magnification. I still saw some interesting antennas, or better parts of antennas. It was definitely something to keep in mind. Unfortunately, for an excursion on foot it was a little bit too far, and it was not such a priority..

We spent the last period of our trip at the xyl's home turf, where her class reunion took place with some related sight seeing and the visit to a famous outdoor theater. Just one more item: we came close to the Czechs border, Actually, the markings were by the side of the road. Just an indication how united the EU is: A few years before we were coming from Switzerland to the German Ham Radio and completely missed where the border was...Suddenly, we were in Germany!

On our last Sunday we were returning to Ansbach, where we would meet our relatives again, stay overnight to leave the next morning by train to Frankfurt and the flight back to the States. This time we had a rental car and the traffic on the Autobahn was manageable, we stayed in the right lane and let everybody pass. We made it in good time.

My sister-in-law had just read the Sunday paper and showed me an article that had caught her attention, titled "A Weekend for Radio Enthusiasts". It referred to field day and mentioned the local radio club was involved and had declared Sunday "Open House". All interested parties were invited to visit, from 2 PM on there was coffee and cake, you could inspect the club station, there was even a radio flea market tent.

So we decided to go there right after we had our mid day rest.

Sister in law Hadi was driving and she obviously knew exactly where she was going. First zigzagging through town and then up the hill we made it to a presently defunct hotel. Looking across the street, there was a smaller building and a huge banner announcing: DARC (German Amateur Radio Club). It was the location of Ansbach's club field day. So we parked the car and headed out to a field where we spotted a few tents and some action. My first impression was, they've got antennas all over the place. There is obviously a long history to the club and the location of the site. Asking where the F. D. station was, we were directed to the small building, where upon entering, we could indeed hear the activity.

Before I could even ask any questions somebody put a mike in my hand and made me help collect another point for Field Day! We met Fred, DJ7MB, who took time to show us around the facility, explained and answered questions. We found that their station was operational for remote control. This was implemented after one of their members entered an old folks home in town and all he could use was a Walky Talky. This is an excellent way to stay in touch.

I make sure, the next time we visit Ansbach, I take the proper "radio" with me and ask the Ansbach group to grant me temporary access to their station.

As with many club stations some are more lucky than others to have a permanent clubhouse and very suitable location on top of a hill. Let's hope the Ansbach group can keep it so. Commercial interest is always looking for more places to put up new cellphone, sri smartphone towers!
(29July 2018)

50 MHz Magnetic Loop Antenna

A magnetic loop antenna is now available for six meters. It is CNC manufactured, using a laser to cut the main loop and corresponding parts from 0.125" thick aluminum.

One should be able to achieve acceptable SWR values over an approximate 200 kHz range. It uses a fixed tuned capacitor, so that you set the capacitor for your center frequency of interest, such as 50.125 MHz for SSB/CW, 50.300 MHz for Data, and 52.525 MHz for FM, or wherever you choose. From this center frequency, you will likely be able to QSY up or down by about 100 kHz in each direction, making this a set it and forget it mono band magnetic loop antenna.

A smaller two meter version is also available. For more information, see: <https://www.vhfloop.com/product/6m-f-magnetic-loop/>

Technology Advancements in Communication

Remember the phone patch or auto patch days of two meters years ago? What was your first handheld with a touch-tone pad? When?

My first 2-meter handheld was a kit advertised in 73 magazine that I assembled and mounted, adding a touch-tone pad on the front. I used it frequently on K4JBV's Northern KY repeater, on .86/.26 I think. I sold that at the Northern KY hamfest in Burlington, and upgraded to a Wilson handheld with a touch-tone pad.

On Super Bowl weekend, a network to support thousands of people wanting internet & cell phone coverage within a few square miles will be needed. Here's just part of the cell phone communication technology investment for the Super Bowl:

AT&T has invested \$40 million. Here are the highlights:

- 22 new or enhanced cell sites in Minneapolis and the surrounding cities
- Upgrades to its Distributed Antenna System (DAS), a network of 800-plus antennas at the stadium, providing 220 percent more LTE capacity
- Upgraded and new DASes at 16 hotels, airports, arenas and so on throughout the Minneapolis area
- 10 temporary Cell on Wheels (COWs) throughout Minneapolis for additional coverage

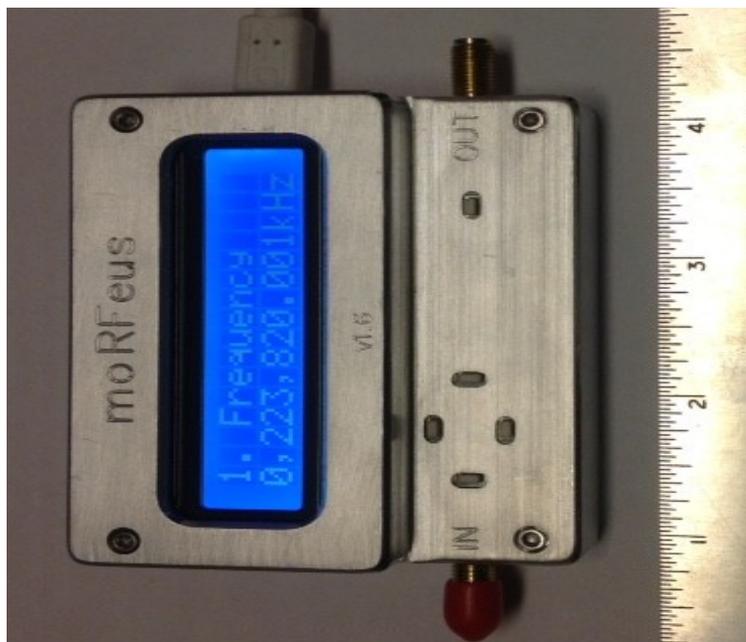
Here's the source of above:

Super Bowl sets stage for best mobile carrier network

<https://www.cnet.com/news/super-bowl-sets-stage-among-carriers-for-top-mobile-coverage/>

Joe - WA8OGS

moRFeus: *A Low-Cost Wideband Frequency Converter and Signal Generator*



moRFeus is a 30MHz-6GHz programmable wideband frequency converter and generator. It has SMA connectors for both input (when used as a mixer/converter) and output, and is powered using an external micro-USB 5V supply.

The frequency can be programmed using the buttons seen in the picture. You can toggle through the menu - see the "Frequency" menu selected in the picture. Do you recognize the frequency shown in the picture?

Once the Frequency menu is selected, you can change each numeric position up/down, or move right or left to toggle/change that digit, continuing until you have the correct frequency. It can also be programmed via USB using Windows or Linux.

Specifications & purchase:



<https://www.crowdsupply.com/outernet/morfeus>. Cost is \$125 with free shipping.

Joe - WA8OGS

ARLP008 Propagation de K7RA Feb 22-2019

No sunspots are visible since January 30. The lack of sunspot activity has persisted for over 3 weeks, as of February 21.

This past week (February 14 to 20) the average daily solar flux was only marginally higher, rising just barely from 70.4 to 70.6.

Geomagnetic indicators were lower, with average daily planetary A index declining from 8.1 to 4.9, and average daily mid-latitude A index (measured at a single magnetometer in Virginia) dropping from 6.1 to 3.9.

One advantage at the bottom of the solar cycle is there is less geomagnetic activity, which is a benefit for propagation on 160, 80 and 60 meters. The recent issue of ARRL Contest Update mentioned this, when they talked about the CW weekend last week of the ARRL International DX Contest: "There are many reports that 160 and 80 meters experienced exceptional propagation. The phone version of this contest is coming up on March 2."

Also in the same Contest Update is a link to K0NR and his piece about how VHF has propagation opportunities beyond line-of-sight:

<http://www.k0nr.com/wordpress/2019/02/the-myth-of-vhf-line-of-sight/>

In Eigener Sache (Personnel Matters)

I've been putting together this newsletter now for many years and I am thinking about retiring and letting a younger generation take over this task.---Digital technology has now advanced to the point where it dominates the discussion, replacing older analog technology and adding new possibilities that challenge and excite the young ones.

When we first tried to introduce Digital Technology, all we had was the sound card, today there are converters available that go up to 6GHz (see article on the previous page).

Steve, K8UD, remains in his co-editor position. He was of great help, keeping our computers running and contributing articles of his own. He wrote this month an article on Techfest, which is in the March issue of DARA's RF Carrier. My article is in this AP.

We send most of our copies per e-mail and the Internet, distance is no problem there even overseas. We have presently over 117 members and only 39 get a paper copy. Paying the 10z 1st class postage, we could actually add 4 more pages, due to the reduced weight of copy paper.

Gerd Schrick, WB8IFM.