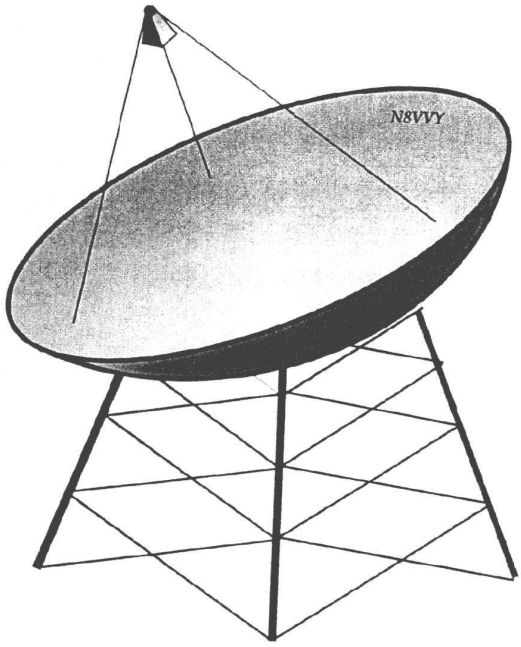
January Meeting Fri 27th at the MCL Cafeteria in Kettering Jan. 2012

ANOMALOUS PROPAGATION

Newsletter: ***The Midwest VHF/UHF Society***



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MIDWEST VHF-UHF SOCIETY

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Mtg Fri 27th of Jan. (6:30PM) MCL Cafeteria on 4485 Far Hills Av (Rt. 48) in Kettering. Going South from Dayton drive past the Town and Country Shopping Center on your left. At the next light turn right, then left into a small shopping center. MCL is at the end on the right

Contents

Upcoming Events

SVHF Society Conference April 20th and 21st, Charlotte, NC.

Hamvention May 18-20

Hello!
We hope you all made it ok into the new year!

We received a number of dues payments with some nice comments. This warms the heart of the editors and of course of treasurer as well. Keep the comments and suggestions coming, better yet: write something we could all appreaciate and learn from. Whatever your style, format, etc, we can probably pollish it up for the newsletter. So give it a try

The Editors, Steve, K8UD & Gerd, WB8IFM

DE N8ZM

Ah, Winter! The beauty of fallen snow, the invigorating cold air…who the heck am I kidding? It's a pain.

Now I have to admit that I am writing this on Saturday morning following a cold and miserable night of snow and freezing rain which has made the roads quite tricky. Now any other weekend I might not be so easily annoyed, but this particular weekend is the ARRL's January VHF contest, and the road conditions threaten to keep us from making the drive to our contest station north of Urbana to participate. We have been working since September to get the new facility ready for this event, and having to wait for the next contest in June would just be too much to take. We missed the September contest because we weren't able to get the work needed on the new building completed in time. But throughout the fall, we have been making monthly trips to the site to caulk, paint, panel, wire, and decorate (?).

In about an hour we will make a decision about whether to make the trek out today. We have to consider both the road conditions and the snow depth there, as getting up the last hill is an off-road exercise that can be a challenge for non-4WD vehicles. Also part of the consideration is that there was a major solar flare a few days ago that aimed straight at this little rock and it could provide some propagation that shouldn't be missed. But being clear thinking adults (?), we do have to apply some common sense to the decision. Hogwash! We'll probably go with our emotions and opt to give it a shot. Nobody ever said hams were ALWAYS rational.

OK, now that I have that out of my system (more hogwash), I need to at least mention that it won't be long until May rolls around, and we have already started plans for our participation at Hamvention, including the booth, the VHF-microwave forum, and the balloon launch. More on that later.

The meeting this month will be on January 27 at the MCL Cafeteria, starting at 6:30. See you there!

Tom, N8ZM

17 Jan 2012 De Robin Midgett <K4IDC@Comcast.net>

Call for Papers for the

16th Annual S E VHF Society Conference

April 20th and 21st, 2012 in Charlotte, NC.

Deadline is Feb 17.

Call for the submission of papers in the area
on both the technical and operational aspects of VHF, UHF and Microwave weak signal amateur radio.

Suggested areas of interest are:
Transmitters
Receivers
Transverters
RF Power Amplifiers
RF Low Noise Pre Amplifiers
Antennas
Construction Projects
Test Equipment And Station Accessories
Station Design And Construction
Contesting
Roving
Dxpeditions EME
Propagation (Sporadic E, Meteor Scatter, Tropo Ducting, etc.)
Digital Modes (WSJT, etc.)
Digital Signal Processing (DSP)
Software Defined Radio (SDR)
Amateur Satellites
Amateur Television

In general papers and presentations on **non** weak signal related topics such as FM repeaters and packet will not be accepted but exceptions may be made if the topic is related to weak signal. For example, a paper or presentation on the use of PAPRS to track rovers during contests would be considered.

The deadline for the submission of papers and presentations is February 17, 2012. All
submissions for the proceedings should be in Microsoft Word (.doc). Submissions for
presentation at the conference should be in PowerPoint (.ppt) format, and delivered on either a USB memory stick or CDROM or posted for download on a web site of your choice.

Pages are 8 and 1/2 by 11 inches with a 1 inch margin on the bottom and ? inch margin on the other three sides. All text, drawings, photos, etc. should be black and white only (no color).

Please indicate when you submit your paper or presentation if you plan to attend the conference and present your paper in person, or if you are submitting solely for publication. The technical program is being handled by Robin Midgett K4IDC. Send all questions & comments to Robin Midgett K4IDC via K4IDC at comcast dot net.

This and That 1-12

FCC Dreams of a White (Space) Christmas for Wireless Gadgets
The Federal Communications Commission took a step toward meeting the growing demand for mobile streaming video and other wireless content by approving tech to let wireless users access content via unused airwaves on the broadcast spectrum known as "white spaces." [By Larry Greenemeier (Scientific American, Jan -2012)]

Stealing Time. In the days of radio toys such as the erector sets were the kids favorites. Then came TV. "You could listen to the radio and spend all 19 hours that it takes to build the Ferris wheel" Once television sets made it into people's homes, that time went away. [William Brown,Dir. Eli Whitney Museum]

Big Decision. "The service contract on my creaky old Blackberry expires next week and I have to make a decision about replacing it. --- After considerable research I've narrowed down my choices to an iPhone, a Droid or a tomato soup can attached to a string. [D.L. Stewart]

Glamorous. "Any girl can be glamorous, all you have to do is stand still and look stupid." [Hedy Lamarr]

Fun and Funds. "We don't always have fund raisers, we also raise a lot of fun."
[Patty Rose, co-owner: Leaf and Vine – Bar and Cigar Room, Troy, Ohio]

Balance. In 1950, the average U.S. household spent 3% of its income on health care, and 22% on food. By 2010 health care cost went up to 16% while food cost dropped to 7 %. [Time]

Or a New Economy. In 2010 Americans spent $ 2.6 trillion on health care, slightly more than the French spent on everything – education, defense, health care, food, housing and more- making US healthcare spending alone equivalent to the fifth largest economy in the world. [The New York Times]

Only Two. "You only need two tools in life - WD40 and Duct Tape. If it doesn't move and should, use the WD40. If it shouldn't move and does, use the duct tape." [quoted by Dave, KD8GCR]

Difference. "The difference between genius and stupidity is that genius has its limits." [Albert Einstein]

Stay up past your bedtime. Eventually, you'll close the doors to your First Class Private Suite, slip on the complimentary pajamas, and drift off to sleep. But when you can chat in the First and Business Class onboard lounge, or visit the First Class shower Spa, what's the hurry? Discover more at emirates.com/choices [Ad for the Emirates A380]

Good Advice. "Be yourself; everyone else is taken." [Oscar Wilde]

About Traveling. "People travel to faraway places to watch , in fascination, the kind of people they ignore at home.
[Dagobert D. Runes]

Distraction. "Multitasking is a myth." If you think you can talk, text, tweet, or play Angry Birds while safely driving a 2 ton SUV, you are deluding yourself. So don't wait for the government to pass laws to protect you from yourself, because "you might not live that long". [Steve Chapman in "The Week, Dec 30-2011]

What did I miss? For seven days I didn't have salt, meat or CNN. My mornings began without *Morning Joe* or *Morning Edition*; I saw sunrise on a mountain hike, not with a clicker in my hand. My daily hour devoted to the *New York Times* was given over to stretching. Pilates replaced *Politico*. I struggled with steel dumbbells, not Fox News dumbbells. Instead of a tablet, a hammock; instead of a BlackBerry, a blackberry. The only tweets came from birds**.** [Marty Kaplan]

Car Repair Business. Today if you have a power window motor that has stopped working, you can't replace the motor, you have to replace the whole window regulator assembly. Probably the same story with a power door lock actuator problem, you have to replace the whole lock assembly. Just think in a few years, you go in for a tire leaking air and the repair is replace the whole car! [Bruce- K8EDE]

Features. "The more features you have on your gadget the harder it will be to use." [Steve Fax, PC-World]

"Time" New Year Thoughts. About Money: Research shows that touching money helps alleviate pain. Hugs release oxytocin, the "love hormone" that quells anxiety.

Our New Contest Shack..

By Tom, N8ZM

The pictures below show a few views of the new shack of the **N8ZM VHF Contest Team.** Located in the SW corner of EN80, the building is a 12′ x 20′ wooden utility shed built with 8′ high walls, a 2′ x 3′ window at each end, and a people sized door instead of the standard garage door. The building has a 2 x 4 floor frame which sits above ground on 4 x 4's, which in turn rest on a chips and dust gravel bed. Hopefully this will keep moisture away from the flooring to assure a long life. We also covered the open ends where the 4 x 4's end with window screening to allow moisture to move freely, but keep the critters from making homes underneath.

We have caulked the joints between the floor panels, as well as all of the outside openings we could find even behind the window and door trim to keep moisture and bugs out. Of course, we then primed and painted the outside to protect it from the weather. We also painted the floor after caulking to protect it from wet shoes and to help keep the dust down. Over that we have installed some rubber-backed carpet runners to help with insulating and noise reduction.

Inside, we installed 3" thick fiberglass bats on the walls and ceiling to make it easier to heat and cool. It gets cold in January and hot in June and September, so we have learned to be prepared with electric heaters and a couple of tons of A/C to make it through the contest weekends. To run all of the equipment, we have installed 200A, 220V AC service, which was in place in our previous shack, a 7′ x 18′ travel trailer which had seen much better days long before we got it. The new building gives us more space, a roof that does not leak, and hopefully will be impervious to the residential needs of the local rodents.

The electric service is distributed around the room to quad outlet boxes, each on its own 20A breaker, and there is a pair of 220V, 30A outlets for the 6m and 2m stations to run the KW class amplifiers. We also recycled some track lighting leftover from remodeling my kitchen, and have hung some of those rope type LED Christmas light strings above the 2m and 6m stations to provide low level lighting at night when it might be desirable to have the track lights turned off. We found this useful in the summer when the bugs are attracted by the lights. Apparently they don't cluster so much around a distributed light source.

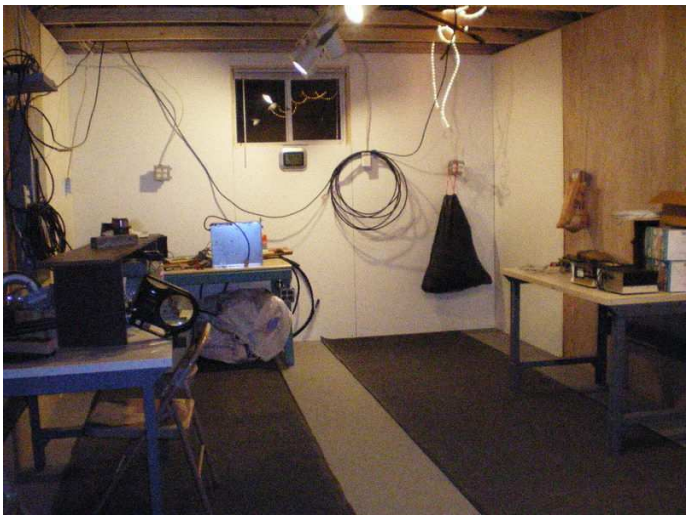
Over the wall insulation we have installed paneling. At the end where the operating positions are located, we paneled the end wall and the first 4′ of each sidewall with ½" white melamine laminated panels, and the rest are done in the cheapest ¼" bare wood we cold find. We used the white paneling to improve the lighting in that area, as well as providing a hard surface for mounting shelves and lights, or for taping grid square maps to the walls.

In the other end of the room we have set aside an area for cooking and dining, with a table for the microwave oven and whatever else we may haul up for the weekend. Opposite each other on the sidewalls are the 220/432-station bench and the workbench. We've learned that there is always something that needs to be fixed.

Since our shakedown cruise is starting just as I am writing this, there will no doubt be a few modifications made and improvements added this spring.

The original trailer is in such miserable shape that it will be scrapped, with probably just the frame salvageable. The other somewhat newer trailer is in good enough shape that we can use it to store items that we don't want to keep in the building for space or neatness reasons.

This project has taken quite a bit of time and has been a team effort by N8IDS, WB8TDG, KB8ZR, W8PLZ, WB8UCD, KD8JZR, and N8ZM. These guys have all worked hard and put in a lot of time since September to get this project ready for the January VHF contest. Naturally, we expect to see a significant jump in our contest scores from our new digs.



A few pictures from the New
N8ZM Contest Team Shack

Band conditions and CQ

We all know how unpredictable band conditions on VHF/ UHF and beyond can be. Wx and the Ionosphere play a role. The ultimate check, of course, is getting on and checking it out for yourself. We have beacons to give us some idea and we have calling frequencies. But it is not enough. You got to be pro active and call CQ yourself. Calls should be brief maybe 2 to 3 times “CQ CQ de (from) call call K K (standing by). Then listen and tune carefully either side of your selected frequency. Tune across the band then make another CQ. If you rag chew with a local, keep you transmission short maybe 2 to 3 minutes, then when you turn over the mike identify yourself like in a CQ call then both of you listen. Nothing more frustrating to hear a “dx” doing local contacts. Just some thoughts

To the Mountain Top

(16 Jan- 2012)

By Gerd, WB8IFM

Our mid winter and first trip to Costa Rica (the "Rich Cost") was getting to the end and we still had a few points on our checklist. The main reason of our visit was the baptism of our second grandson and the getting to know of our son's new family in Costa Rica. (BTW he is interested in Hamradio, looked intensely through the Jan QST issue and might soon take his test).

Of course, we absolutely wanted to pay a visit to the famous Keko, TI5KD, the Costa Rica DX-King and home of numerous yearly DX-peditions. Our son does not have a car and does not really need one because CR has an excellent bus system and he knows how to use it. Driving in CR is hair rising for a visitor from the US, but Americans that live there tell me you get used to it and it is quite efficient for the road system they presently have.

For the occasion though our son had gotten a rental car, so we would be more flexible and a visit to Keko a piece of cake. Keko lives close to the airport in the capital San Jose and had given us some directions and landmarks. We passed the first one, an old abandoned radar but subsequently got lost and had to make two telephone calls to finally get to the last landmark: Otto's Bar. Once you turn the corner there, Keko's immense antenna farm came finally into view, and soon we banged on his door (or rang his bell).

Right away I noticed that he had several 6m yagis and a 6m vertical. He is the 6m king of Costa Rica if not of Central America. When I told him that we sometimes hear Costa Rica on 6 during field day, he commented it most likely came from him.

Showing me his station he offered me to try a qso and get the "Feel" of "rare dx" So we tuned up on 15 m and I called CQ. It took a few minutes but then I had a nice QSO with a station in Michigan and was told Dayton had just gotten a few inches of snow! Well it was nice, sunny and 75F in C/R.

When I rejoined Keko, the XYL and son Martin, they had been discussing our plans for the rest of our stay and Keko had offered to be "our tour guide". Well how lucky can you get? Keko grew up in San Jose, spent years in the US, speaks perfect Spanish and English AND he is a Ham. And he is into Vhf /Uhf and Microwaves!

Time was running short, a family picnic and goodbye party was scheduled for Sunday and our flight was Tuesday. So we arranged for Monday to be the great Day: Coffee tour and Volcano Visit.

Promptly at 7:30 Keko picked us up with his 4-WD vehicle and we were heading for the mountains (coffee grows best at higher altitudes). Keko uses a GPS, the best way to drive around in Costa Rica, and had no trouble finding our son's apartment. We had to fight some rush-hour traffic but eventually got out of the congestion and soon found the Britt coffee tour place and went on the first tour of the day. There was only another young couple from France. So we got first-rate attention from the tour guide!

Keko had been keeping an eye on the Volcano mountains, one of our destinations and clouds had started to move in. Bad news. A few more stops, then time for lunch. The clouds started to clear, according to Keko, an unusual development. But, of course a lucky break for us. I have to mention that Keko had a certain interest in getting up there as well! On the highest of these volcanos, Irazu, the San Jose club (Keko is the Pres.) has a repeater (70cm) and a 6m beacon. Keko had made some repairs and was lugging that equipment in the back of his car waiting for a chance to bring it up the mountain and put it back on the air.

During lunch we made plans for the afternoon in case the clouds would reappear. But fortunately, when we checked, the sky was clear and off we went towards the mountaintop.

We did not take the main road but a secondary one. That way we would see more of the scenic countryside and the non-tourist CR. As you go higher you go through different growing zones and this being a volcano the ground is extremely fertile. It's where flowers and vegetables are grown commercially. Keko handed me his wristwatch "altimeter" as we passed the 2000m altitude. Costa Rica is entirely metric, no miles, ounces, Gallons etc. So that would be 6,500 feet.

The GPS worked fine, except it cannot tell you in what shape the road is in (or whether it might just lead to a few farms. So at one point at a fork in the road we took the wrong turn. The road turned pretty bad. To describe the situation: if you closed the eyes for a few seconds, then opened it you could imagine you had been temporarily dropped off on the surface of the moon and were navigating around these numerous craterlets. (On earth known as pot holes). Even for Keko that was too much of a bad thing. We tried to ask some locals for directions but there was nobody home. So we turned around and tried the other direction.

Soon we could join the main road and climbing the next 3000 feet was a peace of cake. In the meantime (Traudl, the xyl) had checked the guidebook to find out the closing time for the Volcano Park, which is a national park. It was 3:30 PM. Well, Keko figured getting there by that time was ok, because, once they let you in, they would have to let you out.

This being the highest of the mountains you find most of the Central Highland's Radio and TV towers there located within the National Volcan Irazu Park. The tower sites were all within the park. This was the plan, we would split: Keko would drop as off near the crater and we would walk the short distance to the rim of the volcano, he would drive to the repeater site exchange the equipment then pick us up and leave for the drive back.

Now close to 10,000 feet elevation the temperature was close to freezing and it was windy. We put on all the warm clothing we brought but for my head a baseball cap would have to do—left my woolen cap back in the valley!

We will tell you the rest of the story next month!

1296 MVUS Beacon

A few Photos by Mike, W8RKO

A detailed report was in the previous newsletter, AP 11+12-11

Beacon frequency: 1296.080 MHz +/– 1kHz
Power: ~2-watts at the antenna
Antenna: 800-feet AGL, single halo
PBS Ch16 Twr, Guthrie Road, W. of Dayton

Coordinates 39-43-16 Lat. & 84-15-00 Lon.

Mode: CW- Beacon call: W8KSE/B

The beacon sends the following message:
W8KSE/B EM79UR 2 WATTS 800 AGL
<key down for 20 seconds>
message repeats

Temporary Beacon setup includes an FT-817 keyed by a PIC keyer to generate a two-meter signal. That signal is feed into a Down East Microwave 1296 20W transverter. There is 900 feet of 7/8" feedline going to the antenna so we don't get much power at the antenna. Maybe 1 to 2 watts at best.

1296 Beacon Antenna after painting. Note the antenna will hang upside down in the white fiberglass cylinder on the bottom.

The arrow shows the beacon antenna hanging under one the repeater antennas at 80 feet up the tower.

About Laptops and their Lithium Batteries

I noticed that people with laptops, if they are close to an outlet, often get their charger out and plug it in causing the battery to quickly get in the full charge status. My feeling tells me that this is not good for the lithium batteries.

Here is what an expert has to say about this:
"Consumers often plug in an almost fully charged device into the power outlet and leave it connected all day long: a worst case scenario of high temperature with 100% SOC (State Of Charge)." [Marc Juzkow, Leyden Energy Inc.]

Of course, his company has a patent on a new chemistry, but often you get the real dope on a device from the competition that offers an alternative. [Ed]

It’s a Miracle

After the **Ft Wayne Hamfest** in November 2011 I transferred the pictures I had taken from the camera to the computer and then erased the pictures in the camera to make room for new ones. Days later, when I needed a few pictures I couldn’t locate them no matter what I tried. Well Google desktop has done wonders in that kind of situation. Well not this time. I looked up the picture numbers the camera assignes and found out that I had some of these numbers, but the were not my pictures. Seems like a lot of cameras use the same unimaginative system. So I gave up assuming the pictures were expired and in computer heaven.

Guess what happened, weeks later I was looking for something else and suddenly there was the folder with all my pictures from the Hamfest. How did that happen? Beats me!

LTA-Projects demonstrated their blimplike “blow-up” towers at the Fort Wayne Hamfest last November

The larger one on the right is 33 feet. A nice antenna support for Ham antennas during an emergency. It only takes minutes with a blower to erect.

Cost ~ $ 900.

The 70cm/in 13cm/out Linear Transponder
the white cylinder contains a Yagi pointed straight up

Station set-up

using
2 HTs &
a Drake
2.4 GHz
converter

λ/4 stick as antenna (red)

Getting to experiment with the U/S* transponder

By Steve, K8UD

In order to receive the 2.4GHz band, the most economical way is to use a (TV) downconverter. By modifying the LO of the converter, you might be able to use standard VHF/UHF (dual band) equipment.

I have taken a Drake downconverter and converted it for use with my Yaesu 736 on the VHF band. Most satellites use 2401MHz as center frequency, so I selected an LO frequency of 2257.5 MHz, which translates to 142.5 Mhz with an output of -42dBm and the LO is at. I did cut some of the traces as per an article to help the filter, which I believe gave me a little higher output.

I have a unmodified California Downconverter, which translates to a higher frequency. The LO is at 2139.6 MHz which converts 2.48GHz to 337.5 with an output of -60dBM.

Daun, N8ASB, modified a California Downconverter and his LO is at 2278. At 2.4GHz, this translates to 120MHz with an output of -66 dBM.

Of course, the Yaesu 736 is hard to lug around, so Gerd, WB8IFM, and I have rigged a station that uses two HTs. One on 70cm for transmit, the other to follow the downconverter as the (IF) receiver on VHF (2m).

Since now most HTs cover much more than just the standard ham bands many possibilities exist in selecting a suitable LO frequency. To be completely portable, all you have to do is supply the downconverter with battery power. Unfortunately the recommended downconverters demand a minimum of 15VDC. That would require 13 or more 1.2V NiMH cells.

Going the downconverter route it looks like one could get started with less than $50.

- UHF uplink, S band downlink