



# FEEDBACK

September 2015

### Your Story:

Do you have a story, humorous or otherwise about amateur radio? If so, please contact the newsletter editor ([ac8ps@arrl.net](mailto:ac8ps@arrl.net)) and get it published in FEEDBACK.

If you would like to place a classified ad to sell or purchase amateur radio related items, please contact the editor.

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### Inside this issue:

- KB6NU Article
- Meeting Minutes
- Treasurer's Report
- Antenna Party
- Club Repeaters
- Upcoming events and local nets

### Antenna Analyzers You Can Hack

By Dan Romanchik, KB6NU

I'm a nut for antenna analyzers. I think that they are one of the most useful things a ham can own.

I've often wondered why there aren't more DIY antenna analyzer projects, though. Perhaps it's because designing measurement circuits isn't easy. An antenna analyzer has to have a signal source as well. Even so, an antenna analyzer doesn't need a whole lot of accuracy to be useful, so you would think that more builders/hackers would tackle a project like this.

I do know of one antenna analyzer kit on the market. The VK5JST Antenna Analyzer Kit (<http://www.ahars.com.au/>) costs about \$110 USD. I actually purchased this kit a year or so ago, and it looks like a great unit. The unit seems well-designed, and it comes with a plastic case, unlike many projects these days, but I haven't yet gotten around to building it.

I've also recently found out about an Arduino-based antenna analyzer project (<http://hackaday.com/2015/08/>). It uses an AD9850 module as the signal source. The approximate cost for all the parts is about \$40, and you can experiment with the code, if you like. If you have the time and inclination, this project might be worth taking a hack at. [[A photo of this project can be found at <http://www.kb6nu.com/wp->]]

Another antenna analyzer project from Australia is the VK3YY antenna analyzer (or "analyser" as they spell it there). It uses an Arduino Nano. The interesting thing about the blog post in which VK3YY describes the project (<https://vk3yy.wordpress.com/>) is that you can follow his design and experimentation process.

### Yet another analyzer

While I'm talking about antenna analyzers, let me mention another one that I've just found out about: the IW2NDH Antenna Analyzer

- 1 (<http://www.iw2ndh.com/>). This antenna analyzer isn't a kit, but at \$175
- 2 seems to be a good deal. This unit has a frequency coverage of 2 – 160
- 3 MHz, and can be used as an antenna analyzer, signal generator, and a
- 3 scalar network analyzer.
- 4

Apparently, this started out as an Arduino project. As Maximo, EA1DDO, pointed out on the radioartisan Yahoo Group, there is source code for this project on GitHub (<https://gist.github.com/>), and a schematic is available on the Union de Radioaficionados Espanoles (URE) website (<http://www.ure.es/media/>).

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When not writing about antenna analyzers, Dan, KB6NU, actually builds an antenna now and then. You can often find him on the HF bands (mostly 40m and 30m), working CW. His #1-rated amateur radio blog can be found at KB6NU.com, and you can e-mail questions, comments, or complaints to [cwgeek@kb6nu.com](mailto:cwgeek@kb6nu.com).

**SMARS Meeting Minutes 08/20/15**

Meeting called to order at 19:00 p.m.

Pledge of Allegiance

Introductions

Officers present – Gary N8QC, Steph W8AEZ, Brian W8BDM, John W8JRD, Tom WR8G

16 members in attendance

Secretary’s report accepted as published in the "Feedback"

Treasurer’s report was circulated and accepted

Committee reports:

- Hamfest 2015 – Need to print flyers.
- SKYWARN – Several Ham-n-Day requests for support (Sept 26 - Emmett Township Building, Nov 7 - Hastings (Barry Co. EOC), Nov 20 – City)
- Field Day 2015 – No News (Skipped)
- Tech Committee – No News
- VE session – Next month’s testing session will be on Thursday August 27th at 7pm.

Old Business:

- Scott did a great job on the News Letter !!!
- Doc is still at Battle Creek Health System - Room 630
- Tom attempted to take Louis' tower down but ran into some challenges. He may make another attempt.

·Will make an attempt tomorrow evening to replace 2 Meter antenna on repeater.

·Installed Magic Jack+ Phone Line for Repeater Controller. Seems to be working well.

·Board proposed change that would move nominations from November to September and elections from December to October. Vote for change on September 17, 2015

New Business:

·Potential expedition forming to North or South Manitou. More to come!

Silent Key: Paul Goodin WD8JOM

Presentation:

·None

Quote of the Meeting: "I'm Boiling Rabbits"

Closed: 19:46

Respectfully submitted,  
Brian Marsh W8BDM, secretary

**Treasurer's Report**

Income and Expense Statement		
8/1/2015 Through 8/31/2015 (Accrual Basis)		
8/31/2015		Page 1
Category Description		8/1/2015-8/31/2015
INCOME		
Uncategorized		21.69
TOTAL INCOME		21.69
EXPENSES		
Meetings		20.00
Refreshments		20.00
TOTAL Meetings		22.64
Memorial Fund		20.00
TOTAL EXPENSES		42.64
OVERALL TOTAL		-20.95

**ANTENNA PARTY  
AUGUST 21, 2015**

The party-goers assembled at 5:30 pm at the repeater site with the intent of replacing the crippled VHF/UHF dual band antenna. AT 6:00, Dave-ABHK left the ground and climbed to 245 feet where he attached the pulley we used to lower the old antenna and raise the replacement. At 9:00, his feet were back on the ground.

This new antenna is a Comet GP9 and has performance specification similar to the one that failed. The bad antenna will be analyzed to see if it can be repaired, but we did discover water inside the fiberglass radome.

I want to acknowledge the fine assistance of:  
Dave-AB8HK especially for his climb to 245 feet!  
Tom-WR8G  
Eric-KD8UJT  
Steve-W8AAK

I am especially pleased that the task was performed as planned with no glitches. Initial reports indicate that the VHF and UHF repeaters are performing as well as they ever have.

Over the weekend, I disassembled the failed antenna. When it came down, it was discovered the top end cap was missing which allowed some rain water to enter. Due to the amount of water in the antenna, it was probably off for no more than three weeks. The antenna was dried and there is no indication of corrosion or other damage. I am confident I determined the cause of failure. The impedance matching device is a coil which is soldered to the outer conductor of the coax connector and the inner conductor has a capacitor solder to the 50 ohm point on the coil. This coil had a failed solder connection at the outer connector connection. This joint was re-soldered to my satisfaction. I reassembled the antenna, attached a new top cap and the antenna performs like new.

Don-W8RVT

**Larry Camp to present at October club meeting!**

Larry Camp, WB8R, ARRL Michigan Section Manager will be joining us to give a presentation during the October club meeting!

His presentation would be on current legislation relevant to Amateur Radio. He plans to arrive at 7pm, and would like to give his presentation after the business portion of the meeting and refreshment break.

**S.M.A.R.S. W8DF Club Repeaters**

- 2M Repeater 146.66MHz, -600KHz offset, CTCSS 94.8Hz
- 2M DStar 146.79MHz, -600KHz offset
- 70cm Repeater 443.59MHz, +5MHz offset, CTCSS 94.8Hz
- 1.25M Repeater 224.24MHz, -1.6MHz offset
- APRS Digipeater/Igate, 144.39MHz

70cm & 1.25 meter repeaters are linked, and also available via echolink.

**Other Repeaters**

- 2M Repeater 147.12MHz, +600KHz offset, CTCSS 186.2Hz
- 70cm Repeater 442.35MHz, +5MHz offset, CTCSS 94.8Hz

# SOUTHERN MICHIGAN AMATEUR RADIO SOCIETY FEEDBACK

<p><b>Club Meeting</b> 3rd Thursday of every month Maple United Methodist Church 342 Capital Avenue NE Battle Creek, MI 49017</p>	<p><b>SKYWARN Coffee</b> 1st Saturday of every month Immediately after Siren Test Coney Island, N.E. Capital Battle Creek, MI</p>	<p><b>BLB Luncheon</b> 2nd Thursday of every month Coney Island, N.E. Capital Battle Creek, MI</p>	<p><b>SMARS Breakfast</b> 2nd Saturday of every month Coney Island, N.E. Capital Battle Creek, MI</p>
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<p><b>SMARS Nets:</b> Before Lunch Bunch Monday—Friday 11:30 AM, 146.66 Sunday Evening 8:00 PM, 146.66 Monday 7:00 PM, 147.12 (Skywarn) Monday 8:00 PM, 224.24 / 443.95 Wednesday 7:00 PM, 224.24 / 443.95 Wednesday 8:00 PM, 28.365 Saturday 8:00 PM, 224.24 / 443.95</p> <p>Please see page 3 for offsets and PL tones</p>	<p><b>Upcoming Events:</b> Club Meeting: September 17<sup>th</sup> @ 7:00pm BLB Luncheon: September 10<sup>th</sup> @ 11:30am Siren Test: September 5<sup>th</sup> @ 1:00pm Skywarn Coffee: Immediately after Siren Test SMARS Breakfast: September 12<sup>th</sup> @ 8:30am</p>
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