Mt. AIRY V.H.F. RADIO CLUB, INC.

CHEESE BITS

W3CCX
CLUB MEMORIAL CALL

ARRL Affiliated Club

Volume LXIII | January 2020 | Number 1

PREZ SEZ:

Happy New Year!
I hope everyone enjoyed the Holidays and had an opportunity to visit with family and friends. A couple of us fellow Hams and wives got together for dinner at a local restaurant between Christmas and New Years. This was followed up with desert at someone's house where we got a chance to remember the good times and friends of the past year. As you can imagine we keep the radio related conversation to a minimum. Our wives are long suffering and we'd rather not push it.

The Packrats had a busy 2019 including the addition of a DMR Packrat Talk group thanks to the work of Nick N3YMS, Jeff WN3A, and John KA3LOA . One of the limitations of many analog repeater systems is the coverage area. DMR networks already have the computer network "base" that allows the "build out" of a network to give better coverage. The Packrat DMR network already exceeds the coverage area of our FM repeater.

There are new challenges this year including increasing participation in contests, especially the Packrat effort at Camelback. As the club continues to age the enthusiasm seems to decrease for this "contest in the field". I encourage our members to think about how they can add to a successful July contest either through direct participation at Camelback or help with the planning and construction needed before we get to the mountain. One of the reasons for Camelback is the opportunity for any Packrat to operate from a great station from a great location! The friendships built, the fellowship and good times experienced by setting up, operating a super station and helping take down the equipment is hard to duplicate any other way.

The December meeting, our Holiday Social was a great success with 44 members and 5 guests attending. Again, if you have suggestions for making this annual event even better please speak to one of the BOD members about your ideas.

The January general meeting is only 2 days prior to the contest. Our Contest Chair Mike, N2DEQ has done a great job of getting a lot of proprietary information down in writing and posted to the Packrat web site. You must sign in to read this material which includes info on the Packrat Finder, the SLACK Chat Room, the latest FT 8 info, N1MM and much much more! All this information is under the TAB **Contest Info**. Our Web Master, Bill WS3O [snowman@sem-co.com] can help you if you're having trouble signing in. Don't forget, now is NOT the time to update your software or your OS just before contest.

At the November general meeting Mike and several others laid out a strategy for maximizing the overall Packrat score. One of the most overlooked ideas is "Time in the Seat". Try to spend as much time as possible operating especially during peak times. Put your expected operating times on the Family calendar. Post them to Packrats to look for. The contest starts 2:00pm EST, January 18th. The first 4 hours are very popular. Look for those you missed during the last few hours Sunday evening.

The Contest wrap up meeting is the following

Pack Rats **CHEESE BITS** is a monthly publication of the **Mt. AIRY VHF RADIO CLUB, INC. –**Abington, PA.

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PACKRAT BEACONS - W3CCX/B
Located at FN21be except 2304 which is at FN20dh
50.080 144.300 222.062 432.290 903.072 903.3 1296.264 2304.3 3456.200 5760.3 10,368.3 MHz (red = temporarily off the air see https://www.packratvhf.com/index.php/on-air for details)

MONDAY / TUESDAY NIGHT NETS
VHF/UHF Monday:

TIME	FREQUENCY	NET CONTROL
7:00 PM	224.58R MHz	WR3P FN20kb Ralph
7:30 PM	50.145 MHz	N3RG FM29ki Ray
8:00 PM	144.150 MHz	K3GNC FN20ja Jerome
8:30 PM	222.125 MHz	KB1JEY FN20je Michael
9:00 PM	432.110 MHz	WB2RVX FM29mt Mike

Microwave Tuesday:
7:30 Coordinate QSO's on 144.260 for all Microwave bands you'd like to work. Also setup Q's at w4dex.com/uhfqso or **Packrat Chat Page W3SZ.COM**
Visit the Mt Airy VHF Radio Club at: www.packratvhf.com or www.w3ccx.com

Saturday at the QTH of George, KA3WXV. Meeting starts at 10:00 AM

The February general meeting is the annual Crying towel session. Will your station continue to work the entire contest? What could possibly go wrong ? Feel free to bring pictures and other incriminating information to the meeting on a thumb drive!

March meeting is Homebrew and Vintage equipment night. Be ready to talk about you latest project even if it wasn't the success you had hoped for. Many of us learn more from our failures then our success! This is also the night to bring in your most memorable piece of HAM radio equipment. Is that Boat Anchor too heavy to carry in? You can bring in a picture and documentation on a thumb drive to be displayed by the club PC/projector. This year there will not be a test equipment bench.

In April we'll have ARRL night and awards. May's general meeting is the same week as Dayton but our VP Doc, W3GAD has arranged for a great presentation anyway!

Mark your calendar for the June contest at Camelback. June 12,13,14,and 15th . The 12th is setup and the 15th is tear down. Additional help is always appreciated those two days. This year we should have the Halo antennas operational for the bottom four.

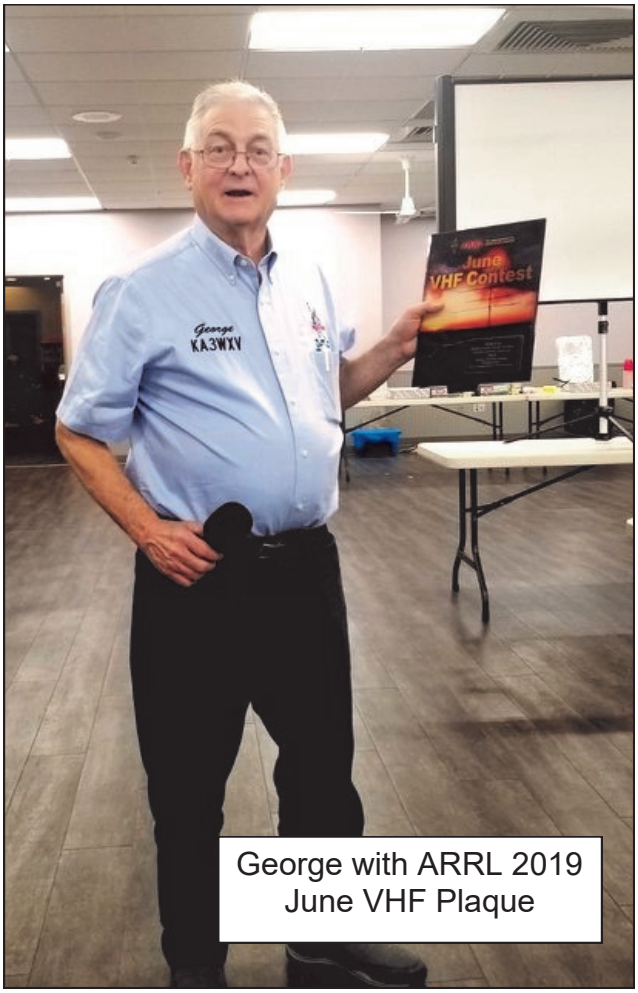
Ed WA3DRC and Paul WA3GFZ are looking for Packrats to take up the mantel of Band Captains for the micros and the 903/1296 stations. More on this at the next general meeting.

Last but not least, you will be contacted by our Election Committee soon. Please consider running for a position on the BOD. This is your chance to help set the direction the Packrats will take in the next few years. Also remember you can attend a BOD meeting from the comfort of your QTH if it is difficult to attend meeting in person.

I can see by looking at some of your work benches there's been a lot of preparation for the contest. This is good! Bottom line, have some fun, learn more. Build something.

73, George KA3WXV

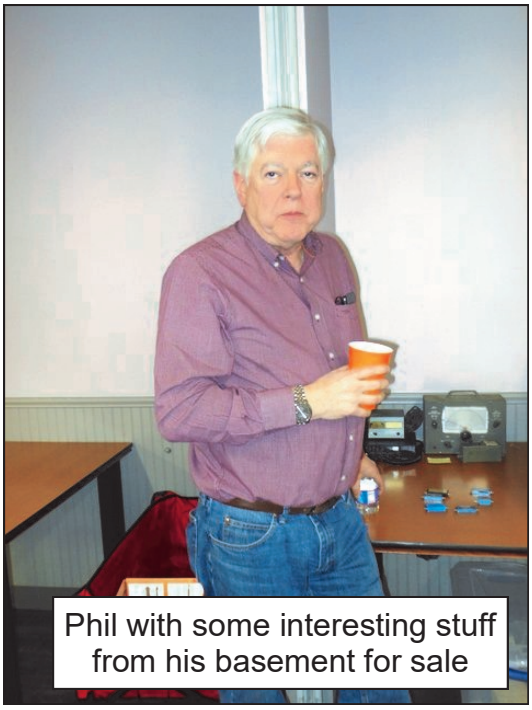
December Meeting Pics



George with ARRL 2019 June VHF Plaque

El makes it into a picture! He and Doc shared picture taking duties in December.

Programming a few more DMR HT's



Phil with some interesting stuff from his basement for sale

1.5kw Lo-Hi Larcan 6 Meter Conversion

By Ed Finn WA3DRC

After converting one Larcan Lo-Hi unit to 144 MHz using the conversion notes from Corey Abercrombie, I acquired a second Lo-Hi with intentions of using it on six meters.

There are a few web sites with conversion information but I did not find information on converting the larger 1500 Watt 6-transistor units for 6 meters. The input splitter and output combiner circuits were a bit different so I had to develop a method to make this work. It would also become a nice project to use the new NanoVNA I had purchased on Ebay.

The hard work designing this conversion had already been done and published by Dave Olean, K1WHS in his article dated 2/9/2012. He converted a 1KW 4-device unit. The 4 and 6-device units share the same building block stages which include the same pcb layout, so I used Dave's notes. Dave also isolated all the stages from the splitter/combiner and used 50 ohm surface mount resistors to terminate in place of the active stages. This seemed like a great place to start with the splitter/combiners.

Backing up for a minute… The Larcan documentation starts out with values for a Lo-Lo unit and has values to convert to higher frequencies. The first step to convert this unit was to basically convert it back to a Lo-Lo and then reconcile the updates in the active device stages with Dave's recommendations.

Then I looked at the return loss into the output and again at the input and made adjustments for a good match with the resistors temporarily installed.

Once the active amplifier stages were isolated by unsoldering the center conductor of the coax and putting in 50 ohm resistors in their place I looked into the output with the VNA. The return loss (RL) was already very good (~30dB) at 50 MHz. I did not make any changes on this side, aside from reverting the changes from Lo-Hi to Lo-Lo. See figure 1 for the sweep. With a match this good I could skip the termination step on the output side for conversion.

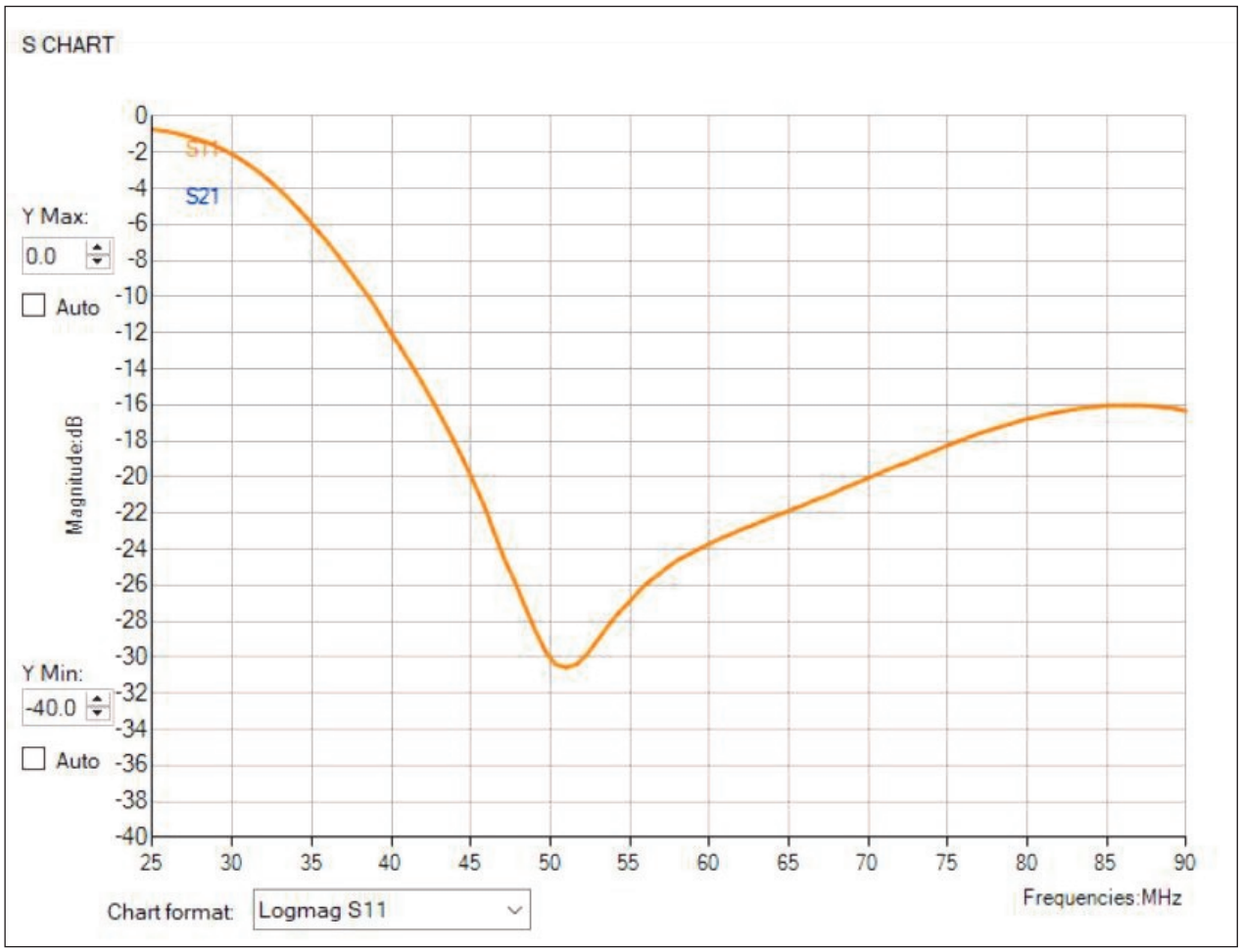


Figure 1. Output Combiner Sweep

The input match at 50 MHz was not horrible either. The best RL there was at 68MHz (26.5db). At 50 MHz it was 16.8db, still not horrible. Poking a finger around the input provided some clues. The first cap near the BNC seemed to want more capacitance. After a few substitutions I found that 12pf at C148 improved the RL to 27.2 db. I see in my notes that stacking another 4.7 pf on top of the 33pf C145 was done at the same time. It seemed like it was time to stop. Figure 2 shows the sweep after changing C148. The C145 change made it a little better, but I did not capture that sweep.

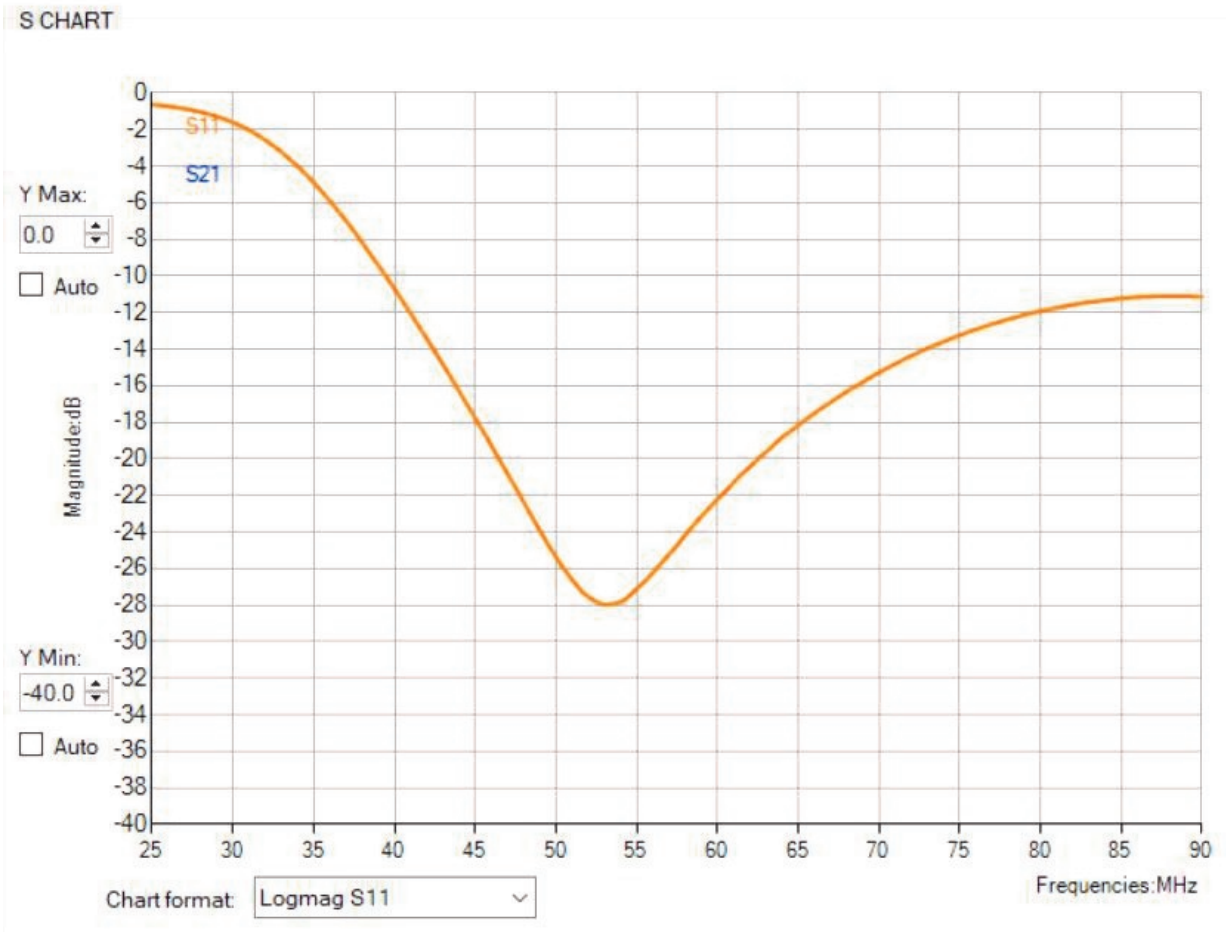


Figure 2. Input sweep in terminating resistors.

At this time I removed the temporary resistors on the input side and reconnected the splitter circuit. I tested each of the 6 stages independently before removing the temporary 50 ohm resistors on the outputs (after setting their bias' to 500mA per half stage). When testing a stage, remove fuses from the other stages. Each stage should contribute about 250 watts (if all is well) using a temporary coax connection on the output. Figure 3 shows a sweep of the input after reconnection to the active stages, but unpowered. (K1WHS saw this behavior too.)

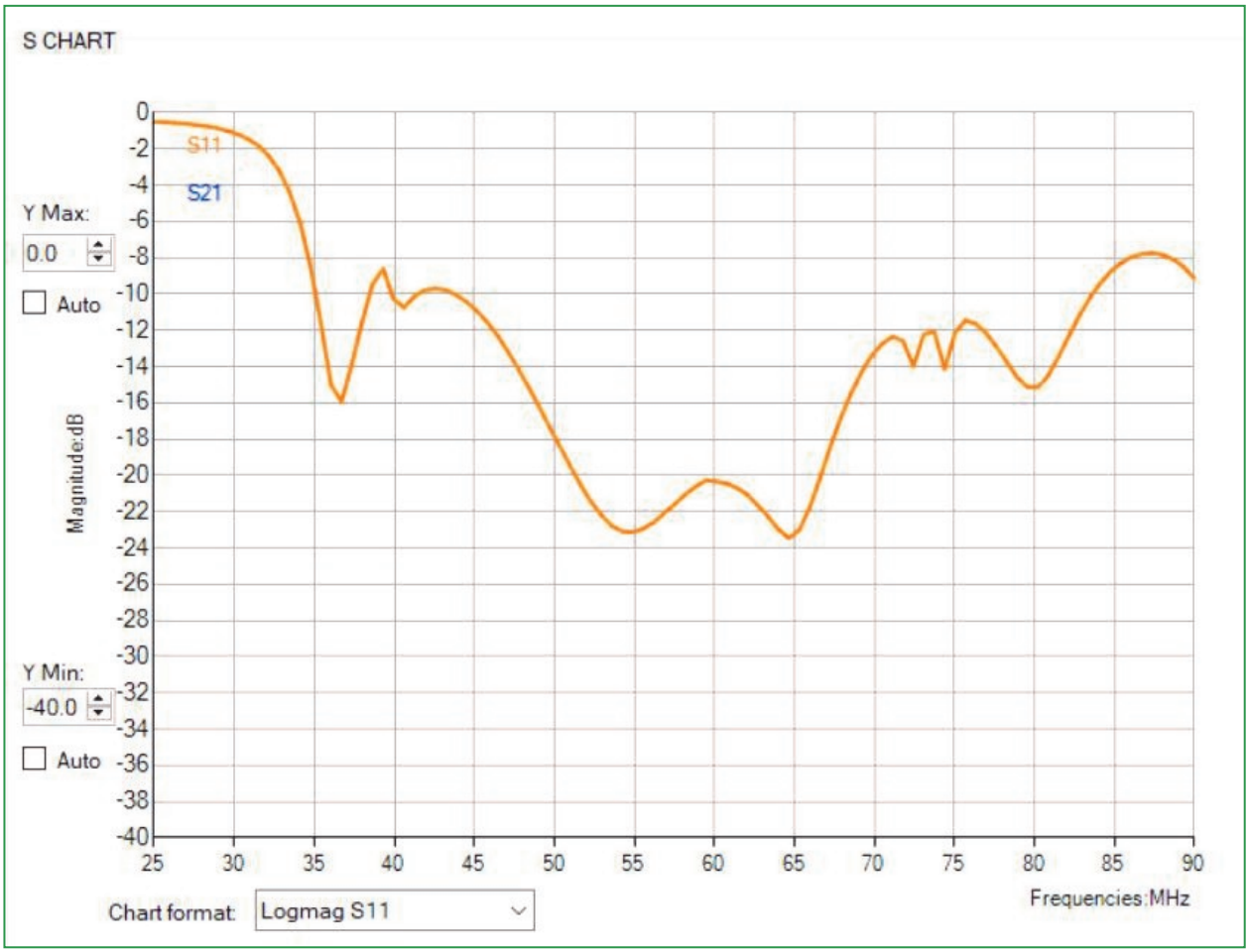


Figure 3. Input into unpowered amplifier modules

One NOTE (learned the hard way); “death to these $100 devices is overdrive”.

The efficiency after this mod was better than with the 2 meter mod and this got me in trouble. The 2 meter Larcan produced 1500 watts with 15 watts in, so this was the limit I was trying to stay below. It turns out that this was not a good assumption and I lost 2 devices.

After figuring this out and replacing devices the reduced power applied was making each device produce at least 250 watts. At this point the temporary output resistors were removed and the output combiners reattached. Time for final test…

Connected to a load and with in/out wattmeters in place, the amplifier now was making 1500w with 6 watts input power. The devices are more efficient (or have more gain) at 50 MHz and the input splitter is probably more efficient. My limit of 15 watts based on the 2 meter conversion was pushing the devices to 2x the desired output. **Don’t overdrive!**

I did one more thing to both the 2 meter and 6 meter Larcans. The protection board is not great for amateur service. I removed some hot swap circuitry as it is not needed with a single amp module. I also did a characterization of the coupler circuits on the output of amp to try to dial in the existing circuit to do some swr protection. It is a symmetrical layout with identical components for forward and reverse detection.

I noted the forward voltage at various output power levels and populated the data into excel. I did this for

both the 2 and 6 meter conversions and found the voltage I was comfortable with for reflected power. I am hesitant to publish a voltage “setting” as I don’t want to have you blame me for smoking $100 devices, but I picked a value and set the wiper of R21 to that value.

My conversion removes the gate voltage in standby or over-SWR. An issue I see with these is that in operation, if you remove the (positive) gate voltage the output does not go to zero. The devices are still not cutoff, so the protection is not guaranteed. It is probably a good idea to put some negative voltage on the gate to turn it off completely.

I took the time to analyze the detector and some spice simulation on the Larcan protection circuit. This is a topic that will be addressed in another article. (I’ll have it in Cheese Bits some time this year).

I hope this helps! I have the amp in place to try in the January 2020 VHF Contest. I’ll see if it survives! Also, this was a nice first use for the NanoVNA. The user interface is bad but the instrument is fine. Here is a shot of the amp (Figure 3.) ready to try in the January contest. One last task; connect the antenna… [Late update: did an air check with W2BVH and it seems good to go for January. Maybe I’ll put some shielding on the component side after the contest].

Figure 3. Final Bench Test with amplifier, sequencer, relays, LP filter, dummy load

[Watch for follow on articles on the protection circuit and the W6PQL sequencer used with this amp -- W2BVH]

Hot-Rodding Radio Gear

By Rick Campbell KK7B

A bit of nostalgia AND some observations on current trends in RF design

"I have this sneaking suspicion that not everything is always happening in the present tense" -- ***Nelson Bentley, poet and professor at the University of Washington.***

A decade ago, my old "No-Tune Transverter" partner-in-crime Jim Davey and I dabbled in what we called "Hot Rod Radios," reflecting our childhoods in Michigan. We figured there were two good things to do with an old radio: revere and curate it, as is done at the Collins Collectors Association; or hack it into something unique and personal. I was born with the "Hot Rod" gene, and have never been able to leave anything alone. In deference to good friends in the Collins community, I unloaded that gear to folks who would appreciate it.

My need to get inside and make "improvements" evolved into an RF design career. In the past decade I have returned to teaching, where I attempt to pass along skills and attitudes that will help the next generation of Analog/RF/Microwave engineers progress into the mid-21st century.

As an engineering educator, I'm always thinking back on the common experiences that key contributors at the "bleeding-edge "brought to the design table over the history of radio. These are useful lessons, and interesting to explore. In the Sputnik era, every radio amateur knew how to start with a CW transmitter and modulate the final amplifier to put a voice signal on the air. Those questions were on the exam.

Then came SSB and VHF-FM, and endless editorials about how radio amateurs need to embrace new technology and abandon outdated modes. Yes, SSB ushered in a new era in amateur radio—the era when 100% of radio amateurs became appliance operators. A decade later, FM did the same thing to VHF. Be honest: when was the last time you made a contact with an FM or SSB transmitter you designed and built? A vanishingly small cohort of us went the other direction, and became Non-Appliance Non-Operators. Yep, I have decades of elegantly designed and built transmitters and transceivers. Many of them have made exactly one contact on the air, to prove they work, before I disconnect the antenna and get back to the bench to get going on the next project.

The QRP community has embraced minimalist designs: Arduino Summer Camp for Middle School girls is starting to have a positive impact on microcontroller skills for incoming college students, but the serious VHF-UHF-Microwave community has embraced the appliance concept to the point where the radio itself often disappears into a box that looks much like any other bit of digital peripheral hardware. All the creativity and deep thinking goes into the code, antennas, and Radio Science. That is profoundly good… but…

The latest trend in RF engineering is use of COTS, "Commercial Off The Shelf" hardware. Not only have radio amateurs become appliance operators, but professional radio "designers" just string together a set of available commercial modules. Who designs the modules? It's a small community of dedicated RF technologists, who understand both device-level RF electronics and the Smith Chart. We meet at a few conferences every year, Radio Wireless Week in San Antonio (this year) at the end of January 2020, and the International Microwave Symposium in LA, June 2020.

I've been privileged to spend half my career educating these folks, and the other half being one of them. At the dawn of 2020, I have a pretty good idea what skills, knowledge, and attitudes a young RF/

Microwave engineer might bring to the design table, if the project is a mid 21st century RF power amplifier, low noise amplifier, receiver front-end, Local Oscillator system, filter, or frequency converter. In other words, the block labeled COTS that goes between the digital hardware and antenna.

Here's a set of knowledge and skills:

- Soldering
- Prototype layout and construction
- Manual test equipment including looking at waveforms on an Oscilloscope
- Measurements in a 50 ohm system
- Envelope modulation of a PA

…wait…what?!??

Yep, **half the RF/Microwave papers submitted to the 2020 International Microwave Symposium involve some type of envelope tracking or envelope modulation scheme,** and the others have linearity requirements for high peak-to-average envelope waveforms.

Can you believe this? SSB and FM are now considered obsolete / dead modes (I was recently asked: "Don't hams still use those?"), and everyone with a prototype PA on the bench is envelope modulating it.

So that's the long way of explaining why, for the past few years, my most successful Analog/RF/ Microwave graduates have been designing, building, and using **2m AM gear as ongoing projects in my classes**. 2m is high enough to require careful layout, UHF transistors and chip components, but low enough to work with waveforms on the oscilloscope. 2m yagi antennas are small enough to use in the classroom, carry the pieces in a backpack, and stack in the corner of a dorm room. We bought a batch of crystals so our experimental transmitters operate on 144.270, and yes, nearly every transmitter on the air is run by a newly licensed Tech.

I design and build projects alongside the students, and continue to incorporate the latest IEEE published Microwave Theory and Techniques in my example work. Here is a photo of an all analog 2m 20mW carrier AM handheld using a newly designed near-zero IF receiver presently on the bench. Better specs than your FM HT. Ed Tilton would be proud.

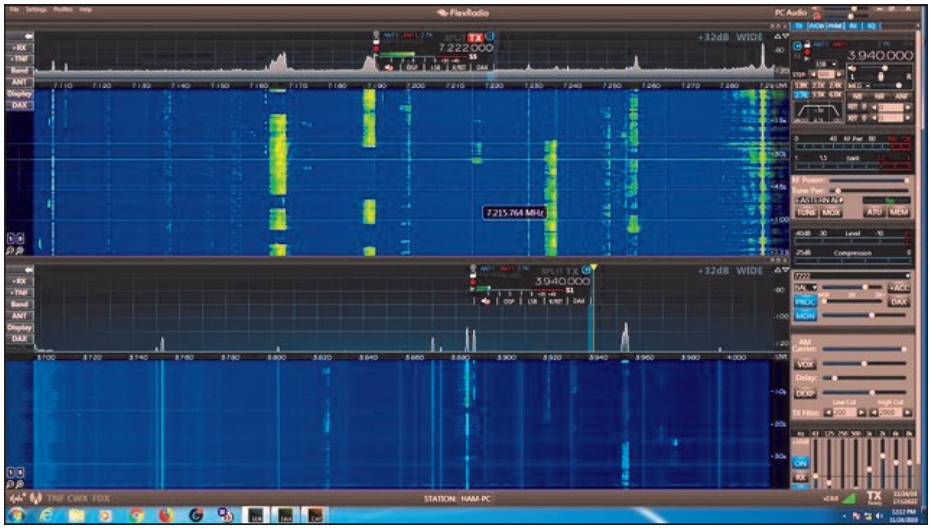
In some ways, the past has returned to the 21st century.

Best Regards,

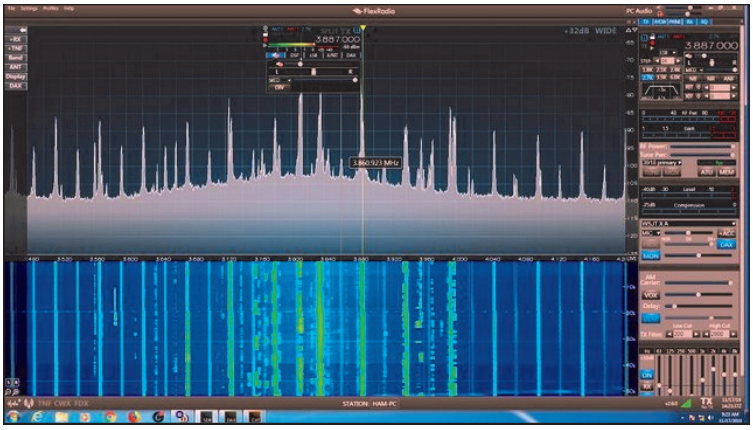
Rick KK7B

ERRATA: “Modified Sine Wave” Inverters: Bad News for HF Receivers and Computer Equipment

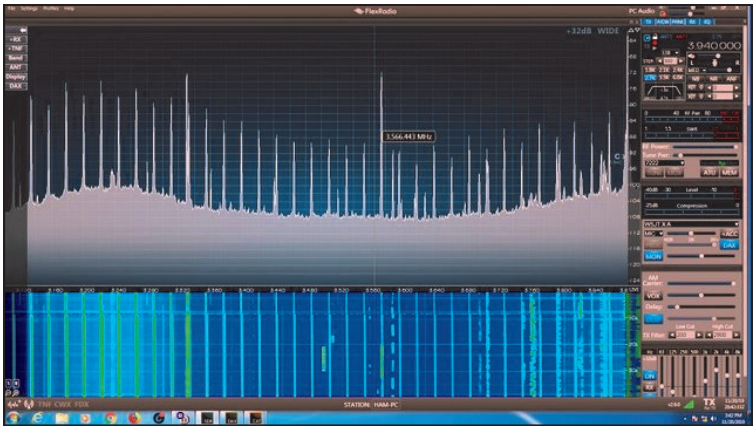
I got the pictures of the interference from Modified Sine Wave inverters wrong in the December Cheese Bits. Here are the correct pictures. Thanks to WA3QPX for the corrections. Sorry for the confusion -- W2BVH



Samlex Pure Sine Wave Inverter - clean



Best Buy Modified Sine Wave Inverter - yuk



Harbor Freight Modified Sine Wave Inverter -ugh

Both of these will modify your ability to receive well

Hello George (KA3WXV),

Congratulations on being awarded the Warminster Amateur Radio Club's **Ham of the Year** award. As you might imagine, I concur heartily with their selection.

Be sure to send a picture of your award to Lenny for inclusion in Cheese Bits. 73, Michael KB1JEY

[George should have a pic to Cheese Bits some time soon] --W2BVH

Old But Excellent Antenna Articles

Here are a couple of old, but excellent antenna articles. They’re both by Steve K1FO (SK) and they’re both in Ham Radio Magazine. The first is his 432 MHz antenna optimization article in the July 1987 issue (Number 234). The second is his yagi array spacing article in the May 1985 issue (number 208). Both can be found at https://archive.org/details/hamradiomag . VERY well written.

2200 Meter WSPR Receive Record

I received VK4YB via WSPR transmission on 136 kHz. World record at the moment. Date / Time: 2019 -12-19 11:40
Grid:QG62ku to FM19sr

73, Wayde K3MF

GM3SEK 432 MHz Tropo Distance Record

GM3SEK has set a new world record on 432 tropo. On 28 Dec 2019 he QSO'd D41CV at 4,556 km. D41CV is Cape Verde Island.

Ian is now in the unique position of holding **both EME and tropo distance records for 432** as he worked ZL3AAD back in March 1989 at a distance of 18,970 km.

Al - K2UYH

The 2020 Eastern VHF-UHF-Microwave Conference

Sponsored by the North East Weak Signal Group (NEWS) will be held April 16-17-18-19 at:

Manchester Inn & Suites (was Baymont Inn & Suites, same site as in 2018)
20 Taylor St.
Manchester, CT 06042

Reservations will be available soon

Registration will be on-line soon.

73, Mark Casey, K1MAP

EME2020 in Prague is less than 250 days away. It is time to start making your plans to attend if you have not done so already. The webpage is up and the Call for Papers open. Please visit https://www.eme2020.cz/. The call for papers is at https://www.eme2020.cz/text-call-for-papers/. Registration will begin on 1 Jan. OK1DFC and his EME conference team are looking forward to see you in Prague. **--K2UYH**

JANUARY CONTEST PRÉCIS

The January Contest Information has been posted on our web site under the contest tab. Same as last year, all information pertinent to the contest will only be found on our site.

For our members who could not make the November meeting:
Prior to my strategy presentation, I made it clear that the Rochester VHF Radio Club has made great strides over the past year with strong performances in both the June and September contests. They posted better scores than our club in both contests. I consider them major competition and they threaten our long held number one position in the January contest. We will need all our club members to participate in January if we are to maintain our lead. Please take a look at the contest documents asap. Our strategy is quite different than prior years. I believe it will help us maintain our elite position but we need everybody to get on the contest and make some noise.

I encourage comments regarding the strategy I put forward. Having laid out our plans in November allows us to make changes if necessary.

Like every year, if you need help with equipment, or possibly to add a new band, let me know and I will do my very best to help you out.

I would like to publically thank Dave W1RZ and Bob W2SJ for their presentations.

Let's have the best January Contest ever.

Mike N2DEQ
January Contest Chairman

[To get to the Contest plans on our web site, you need a logon password. If you don't have one please contact our webmaster Bill WS3O at snowman@sem-co.com. He can have you set up and on the web site very quickly. --W2BVH]

ISS HOLIDAY SSTV IMAGE RECEPTION

Received this image this morning (12/28/19) using a J-Pole in my attic, International Space Station was well north of us in Canada or New England at the time.
73. GRIFF NE3I

I used my horizontal beam on the 1219 pass and got the pic above. I switched to a 3 x 1/4 wave vertical for the last 2 passes and got partials. My AOS was later and LOS was earlier by a few minutes with the omni. 73, Al KB3SIG

These are the two best images received today (12/30/19) from the International Space Station (“ISS”). So far today, I have received images from 5 different passes. I am using the free MMSSTV program through the Rig Blaster to the TS 2000. The antenna is an Ed Fong tri-band J Pole encapsulated in PVC and hung in my attic at 20 feet. The images are transmitted on 145.800 MHz. Naturally, Packrats with outdoor antennas with gain could do better. Conditions today, rain. The first image attached was received from 1401Z-1401Z with the ISS over 47.4N 80.5W – 38.5N 61.1W (Ontario, Quebec and Maine). The next pass was from 1534Z to 1542.58Z. The second image attached. Weak signal (Acquisition of Signal “AOS”) heard at 1534Z with ISS at 45.3N 97.9W (Iowa). You can track the ISS at “spotthestation.nasa.gov. This site shows the position of the ISS over the globe and a second view looking down from the ISS to the map below with latitude and longitude position. Even if you are unable to utilize SSTV programming, you can hear the ISS during passes on 145.800MHz. Wouldn’t it be great if we could get the ISS Team into the Packrats for the January Contest as a Rover. 73. Griff NE3I

Here are 2 of mine from this morning. (12/30/19) The one on the left was at 1400 and the one on the right was at 1404. I'm using an 11 element horizontal yagi into an Icom 746. A Signalink sends the audio to MMSSTV on my computer. It really is that easy. Someone I know got images by holding a Baofeng up to the microphone on an IPhone running the "Black Cat" SSTV program.

I've tried my Diamond vertical (3 x 1/4λ), and the beam works better. On this pass, AOS was predicted at 311°, but I started with the antenna due north to avoid having to turn it all the way around during the pass. I still heard the signal just before 1358, which was just a few seconds after predicted AOS, and it only took about a minute for it to get strong enough to start decoding. I got 2 complete images.

73, Al KB3SIG

Cheap 600 Watt HF +6M Amplifier Project

A 600 watt HF + 6 Meter Amplifier project is described at https://qrpblog.com/2019/10/a-600w-broadband-hf-amplifier-using-affordable-ldmos-devices/ .
It uses recently released cheap plastic packaged LDMOS transistors MRF300's. A detailed description of how to construct the amp is given. Cheap bare boards are also available. The only obscured part needed is some 17 ohm coax, but even this can be found on the internet. See what you think. --W2BVH

Cheap Easy to Make Portable Yagis

Rick, KK7B describes easy to make alternatives to the popular WA5VJB yagis in his article at http://www.pnwvhfs.org/conference/2016/pdf/Rick-KK7B-VHF-Antenna-Design.pdf
He's got antennas for 144, 222 AND 1296 MHz in the article. --W2BVH

KC3BVL is on 2304

Jim KC3BVL was able to get one of the club 2304 MMDS based transverter / amplifiers on the air. He has a very nice S9+ signal to my location. I'm sure he will be able to work many contacts with his set up. Bill, AA2UK

Some Recent DX

I worked Wayne N2WK in FN03xe this morning (12/17/2019) on 1296. His signal peaked 549 and mine to him 579. The contact was made using CW. This was a 285 mile contact. Bill, AA2UK

Transceivers Stable Enough for Digital Modes at 432 MHz

Just an FYI: The Yaesu FT-736R works well thru 432 using FT8. The Kenwood TS2000 seems to be stable enough as well. Many of the older ICOM's are not unless you have the high stability TCXO option. Bill, AA2UK

The Wayback Machine
In CHEESE BITS, 50 Years Ago

Nibbles from January 1970. Vol. XIII Nr. 1
de Bert, K3IUV
(*author's comments in italics*)

"**Our Prez Sez"**. Prez Ernie, W3KKN, commented on "looking ahead to the New Year." "Are you keeping pace with the news and the technology? Someday, our 'modern' equipment will be curios to future hams." (*Ernie's prescience bore fruit, when you look at the weak signal capabilities of the newest digital trafficking modes that we've grown accustomed to in recent years. And, who would care to peer into the future and say where we will be in another 50? Did anyone ever think the "**Eiser-Mathes"** cup waiting at the ARRL for 'the first amateur radio 2-way communication between Earth and Mars'" was more than a pipe dream? Maybe our descendants won't be surprised when it happens*!).

Did you Know? That K3JJZ (*El, editor at the time*) had his mobile gear stolen "again." Be on the lookout for an HA650 and carbon mike (*El, was this from the Nash Metropolitan* ?). The club 6-M Gonset has been stolen from the auto of K3IGX, Dick Boyle. (*Petty thievery is not new*!)

ARRL Bulletin 251, 12/18/1969. The ARRL announced that the next Simulated Emergency Test (SET) would be held on 1/24-25, 1970. It would include all of the amateur organizations dedicated to emergency communications, and others were urged to participate "to help justify the amateur service." SET rules to be announced in QST.

Technical Topics. A schematic and discussion showed how to measure the resonant frequency of an unpowered tuned circuit, using a signal generator, a 1-meg resistor, and a scope. Contributed by WB6OOX, Gene**.**

"From the Book Rack." The book review net, conducted by member Paul Behrman, K3WEU reviewed the updated edition of "How to fix Transistor Radios and Printed Circuits." By Leonard Lane. $4.95 in paperback, with over 150 illustrations. Paul noted that the book covered semiconductor physics and theory, as well as including details on modern devices like zeners and Jfets. Problem analysis and servicing techniques covered all aspects of communication circuitry, and the net gave the book a high rating.

When I became a Packrat. Frankie, the club historian provided a list of the next 14 current club members with the date they joined the club. (*I note the inclusion of Walt, K3BPP, our antenna expert, a member since May 17, 1967.*) Frankie also listed our SKs, one of whom was Karl Vincent, W3ASD (*American Silver Dollars. Karl was our "DX" member who lived in Smyrna DE. DX at the time. He was always sought out eagerly for your DE contact in the January contest*!).

Picnic – History. Did you ever wonder how the annual club picnic got started? Historian, Frankie, provided the details of "Our First Picnic, 8/12/1956 (*63 years ago, when the club was only 4 months old*!). He reported "After a detailed search, the site committee selected the Fort Washington State Park. (*Attractive because of its convenient location, and <u>No Charge to use</u>*!)" At that time, there was a total of $14.51 in the club treasury (*Dave, take note*!). So Mother Rat (*Helen, Frankie's xyl*) typed 100 letters and sent them to Ham publication advertisers, soliciting donations. Many of them came through. They planned for 50 people, and over 100 attended this first picnic (*at $1 per family*)! Expenses were $47.14, receipts $37.90 (*included auctioning a 2-meter converter donated by W3IBH*), and a $5.40 refund on soda bottles (*remember them*), leaving a treasury balance of $10.64. A good time was had by all. (*The tradition continues today with our current annual picnic hosted by Michael, KB1JEY, but fewer members attend*.)

Swap Shoppe. By W3ZRR. *(Always nostalgia*.) . For sale: by K3WEU, a Heathkit SB-200 Linear – new tubes, $240. Reason for selling, I'm buying an SB-220 (*I note that the 200 is currently listed on eBay for about $60, 50 years later*!). Wanted, by WA3NFV, Danny: an SX-115 Receiver (*some of us refer*

to him as "the red garter kid." Ask him why). And, gratis from Ernie, W3KKN: "A huge assortment of transformers, chokes and other heavy metal items, left with him by a Ham moving to the South, The xyl says they must go!

Meeting Notice. Next general meeting (January, 1970) topic will be the "Crying Towel Session." (*Another Packrat tradition*.)

Tidbits from the Back Page Ad. The back page ad from "Ham" Buergers in Willow Grove (the store of member W3BAH) featured the "Galaxy GT-550, ssb transceiver (5-*band, low frequency rig*)." The ad stated "Switch on that tremendous power, and pick up one of your favorite DX stations!" (*I note one currently listed on eBay, non-working, "junker for parts," for $135*.)

Miscellany. *Postage for this copy was still a single 6-cent Roosevelt stamp. (5 double sided, 8-½ x 11" sheets.) As usual, many "folksy" comments about members, their families, and activities were included in this edition of Cheese Bits. If interested, or for more detail on the above items, visit our website (**www.W3CCX.COM**) and read the full issue scanned by K3IUV (me), and posted on the website by WS3O, our webmaster. Remember, I have also posted the club Officers history, club Membership history, and Packrat Inventory (updated frequently) on the W3CCX website. These files are password protected, and only accessible to registered members. Have you registered? I hope you enjoyed reading these bits of nostalgia as much as I did in writing the article. If yes, you might let me know. Thanks to those that did.*

***thirty*, de K3IUV (K3IUV@ARRL.net)**

Events

For inclusion, please direct event notices to the editor.

January VHF Contest - Contest - January 18-20, 2020. See http://www.arrl.org/january-vhf for rules and details. Also see the Packrat web page for club specific info and Précis in this issue of Cheese Bits.

Cherryville (NJ) Hamfest - Hamfest - March 14, 2020. Sponsored by Cherryville Repeater Assoc. See http://www.qsl.net/w2cra for details.

Warminster ARC Hamfest - Hamfest - May 3, 2020. Buck County Community College. Details to follow.

June VHF Contest - Contest - June 13-15, 2020. Details to follow.

Valley Forge Hamfest - Hamfest - July 11, 2020. Kimberton, PA. http://www.marc-radio.org/

CQ WW VHF Contest - Contest - July 18, 2020. Details to follow.

Murgas ARC Hamfest & Computerfest - Hamfest - July 25, 2020. Plains PA. http://hamfest.murgasarc.org

222 MHz and Up Contest - Contest - August 1-2, 2020. Details to follow.

10 GHz and Up Contest - Contest - August 15-16, 2020. Details to follow.

Gloucester County ARC Hamfest - Hamfest - September 13, 2020 Mullica Hill NJ. Details to follow.

RF Hill ARC Hamfest - Hamfest - October 18, 2020. Sellersville PA. Details to follow.

Cheap 902 Transverter

This might be an interesting way to get on 902-903 for $55.00. It looks like a good building block. It could be paired with their transverter switch which only costs $15.00
https://www.ebay.com/itm/902mhz-to-28mhz-Transverter-high-linear-for-FLEX-RADIO-UHF-QRP-0-1-W-33cm-band/254447157855?hash=item3b3e3b825f:g:E8EAAOSwDYZd7QNB

https://www.ebay.com/itm/Attenuator-Transverter-SMA-Interface-Board-50-70-144-222-432-Mhz-VHF-UHF-ham/264391968868?hash=item3d8efd4864:g:4oYAAOSwVztdKuaw
Bill AA2UK

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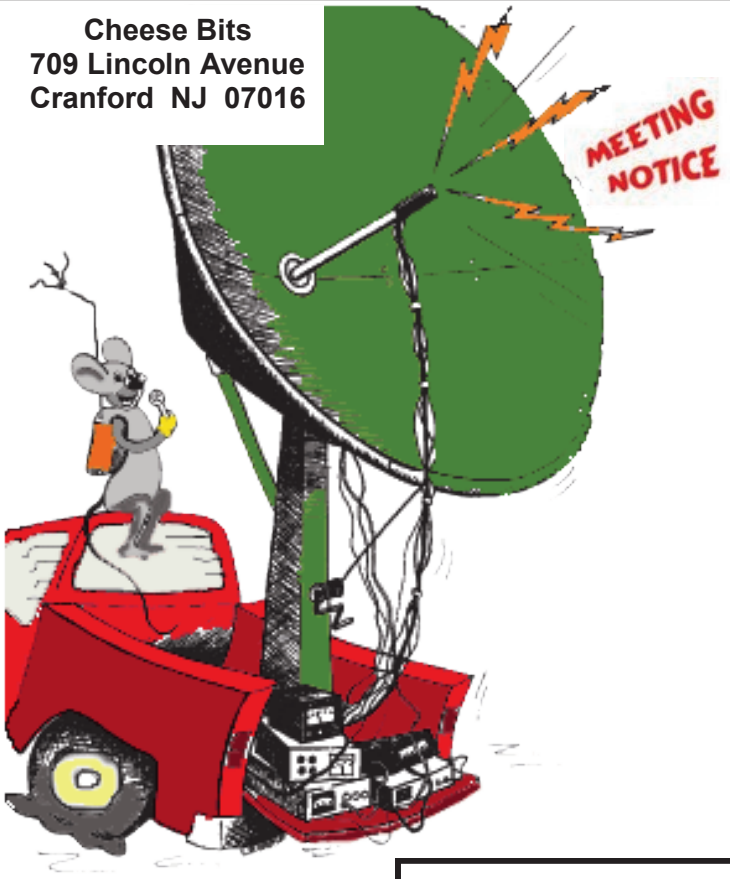
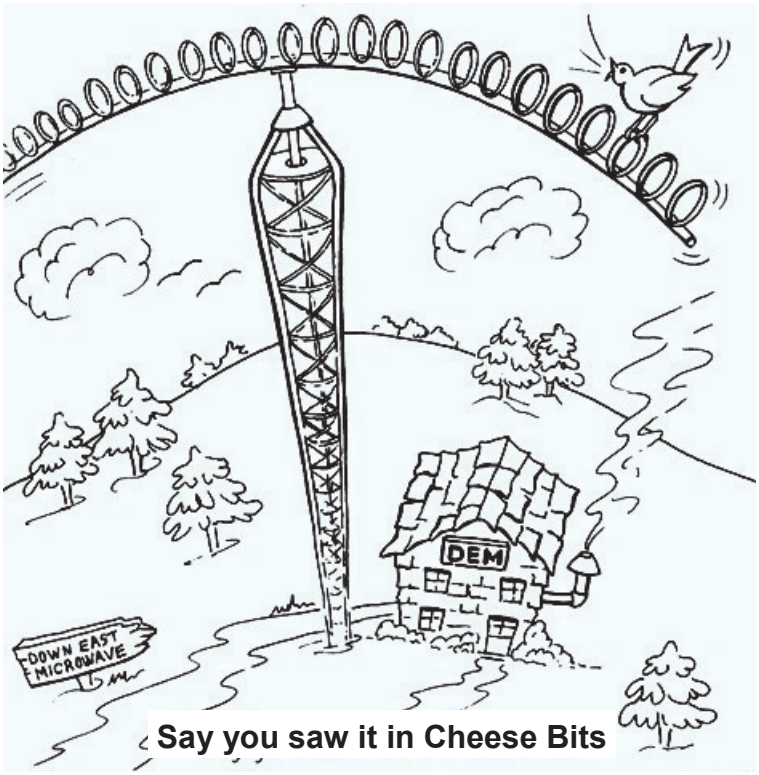


TO:

MT. AIRY VHF RADIO CLUB, INC.



Say you saw it in Cheese Bits