



CHEESE BITS

W3CCX
CLUB MEMORIAL CALL

ARRL
Affiliated
Club



Volume LXIII

November 2020

Number 11

PREZ SEZ:

Looks like some exciting times coming up here in Pack Rat territory! Every year when the leaves change color and get blown off the trees by the crazy and ever changing November weather, and “The frost is on the Pumpkin”, we are reminded that the January Contest is just around the corner. Appropriately, our contest chairman Mike, N2DEQ has been working hard on this month's “January Contest Preparation” club meeting! Be sure to attend this WebEx meeting to pick up some operating tips that Jeff, K1TEO will present on Thursday November 19th. Please think of a favorite tip you can share with a fellow Packrat.

For the December meeting we usually have our Annual Pack Rat Social gathering with lots of good food. This year we had to come up with something else as our in person meetings locally are still not possible. Our VP Doc, W3GAD has secured a special speaker for the night who will join us via WebEx. Drum Roll, hold your breath....Would you believe Bob Heil, K9EID? Bob is the fo+-under of Heil Sound, a legend in amateur radio, and an “in demand” speaker at ham events around the world. Don't miss this one!

If you attended the last meeting you were introduced to the “Packrats Resource Program-

Packrats Helping Pack Rats”, by Mike, N2DEQ. This program is an effort to improve technical support/help to all our members. I believe this program has a lot of merit, so following in the true Packrat tradition, I twisted Mike's arm and asked him to be the overall Resource Program Manager (RPM) since he authored the new program! In addition, I also tasked him to contact members to fill the 3 Regional Resource Administrator (RRA) positions. I am happy to report that Mike has secured members for all three positions: George KA3WXV - Region A, Dave W2KV – Region B, and Dave K1RZ – Region C. I believe the program will prove to be very valuable to our members and encourage all to support Mike and the RRA's in this endeavor. If you have not seen the program outline yet, sign into the W3CCX.com website and click on the “Resource Program” tab (thanks to our webmaster Bill WS3O).

If you noticed that this issue of Cheese Bits might be a tad late you can blame it on the Prez! I shirked all club responsibility taking a secret, unscheduled 3-day vacation to the hospital. They taught me all about shortness of breath, Afib, CHF and blood thinners along with a myriad of tests. It's really not a vacation as you get no sleep in the hospital. The doctors have a good plan for me and I will be following it as prescribed.

Pack Rats **CHEESE BITS** is a monthly publication of the
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222.98/224.58 MHz (PL 136.5) Hilltown, 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:

<u>TIME</u>	<u>FREQUENCY</u>	<u>NET CONTROL</u>
7:00 PM	224.58R MHz	WR3P FN20kb Ralph
7:30 PM	50.150 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

I will be looking forward to seeing all of you on the Board of Directors or General Club Meeting this month. If you haven't attended one for a while, please do.



Remember, "this is your club and all about you"

Meanwhile, finish a project on the bench, keep one ear "listening for the weak ones", and the other on the "Magic Band"!

Vy 73,
Bob W2SJ

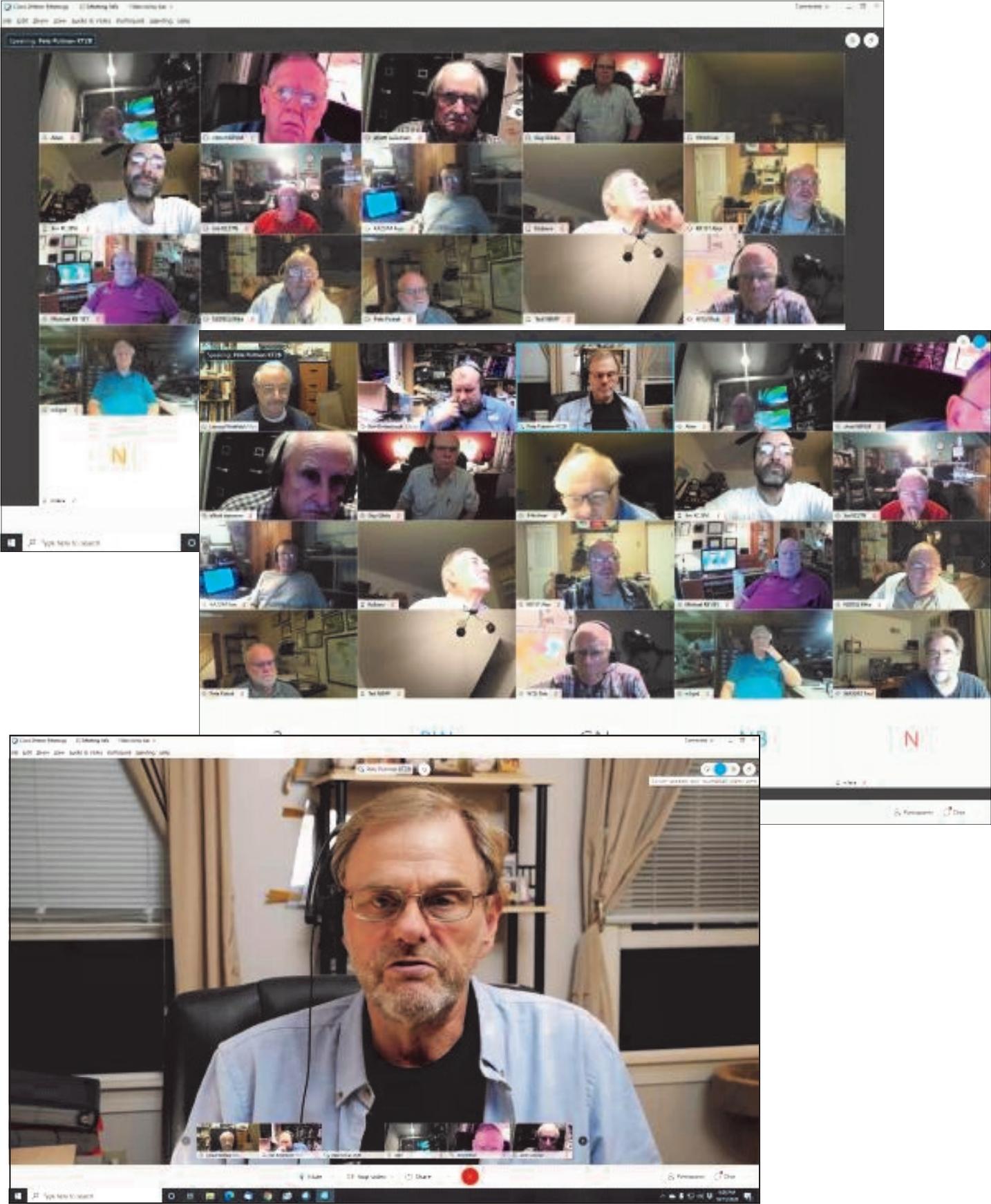
Editor's Note

In addition to Bob's (W2SJ), excusable lateness with the Prez Sez column this month (see above), Bert K3IUV was also delayed in writing his monthly "Wayback" column, by illness as well. And finally I'm being hampered by a bad back, which keeps me from sitting at the computer for more than a couple of hours at a stretch, further delaying the November Cheese Bits (hopefully this annoyance will be gone soon).

I think all these are valid excuses for the lateness of our club newsletter. (More valid than "The dog ate my homework" at least.)

73 & stay healthy,
—Lenny W2BVH

October (WebEx) Meeting Pics



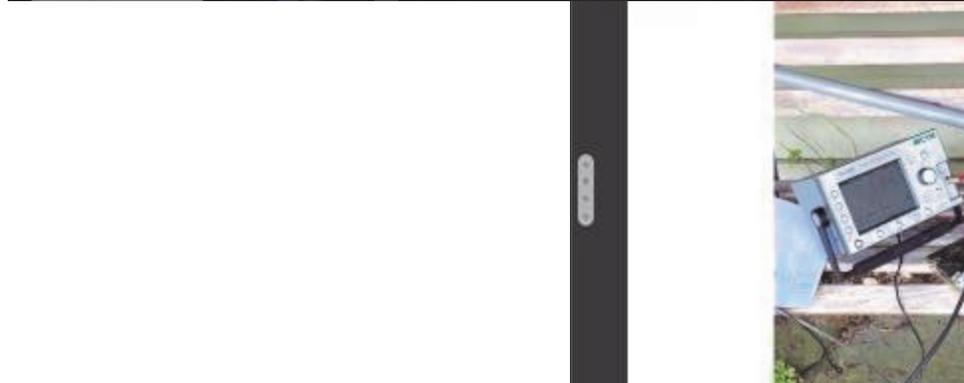
Zoom Meeting: Meeting ID: 828 288 288 288

When "The Bends" Are Good

VHF and UHF TV Signal Refraction

Pete Putman, KT2B
President, ROAM Consulting LLC
Contributing Editor, *Sound & Communications*

Zoom Meeting: Meeting ID: 828 288 288 288



Zoom Meeting: Meeting ID: 828 288 288 288

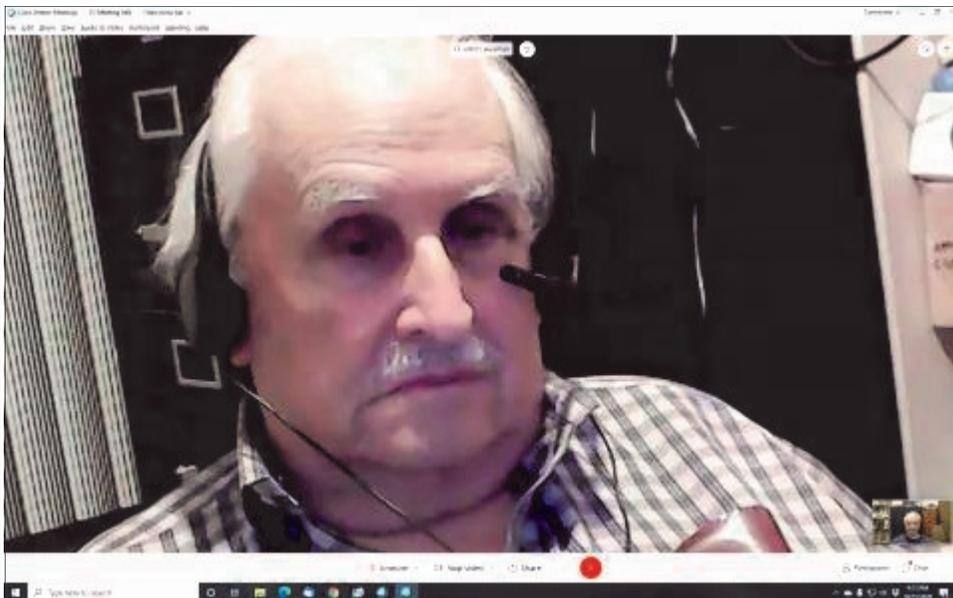
Zoom Meeting: Meeting ID: 828 288 288 288

Pack-Rat Resource Program

- This program has been developed to facilitate identifying technical resources available for members who need help.
- It has always been the Pack-Rat tradition to help other members when the occasion arises.
- This program will not work without the full cooperation of all the Pack-Rat members.**
- The Pack-Rat coverage area has been split up into three regions. Each region will have its own resource's which members may contact when needed.
- Each Region will have its own Regional Resource Administrator (RRA) who will develop and maintain the available resources in his/her region and be available to assist members if need be.

Zoom Meeting: Meeting ID: 828 288 288 288





KOBAK Van Mast Platform

Getting an antenna on top of my van's pneumatic mast first requires mounting a rotator and platform. A platform is needed to hold the cables, relays, and perhaps someday preamps. Most importantly, none of the original cables in the original helical cable bundle is adequate for VHF+, so I need a platform to hold at least one good coax cable straight down from the top. Fortunately, the small plate at the top of the mast that formerly held the original TV equipment has holes that line up with my used Yaesu 800 rotator.

Using wood for the platform is hillbilly design, but I can't easily fabricate a more appropriate metal platform myself. To start, I cut a 4-foot-square from $\frac{3}{4}$ " treated plywood. Four holes were drilled to line up with the rotator's tapped bolt holes, though I had to make some trial-and-error hole expansion because I wanted the platform to have a tight fit with the bolts. Using longer bolts than those supplied with the rotator along with split washers, I was able to sandwich the platform between the mast plate and the rotator. This arrangement seems pretty strong, but I'm still going to be nervous the first time I drive at highway speed.



I had hoped to get a working rotator and a single antenna done by the September contest. As so often happens though, house maintenance and family obligations kept me from finishing in time for the contest, so I roved in the VHF contest with just 6m and a tilt-up mast (see other article — October Cheese Bits). Contributing to that missed capability is my aversion to project time pressure while retired, having felt enough of that during my career.

After the contest and some POTA park activation roves, I continued to build the project. My intention was to support coax from the platform down to the van with regularly spaced attachments to a vinyl-coated rope hung from an eyebolt beneath the platform. The rope has a few advantages: it should be strong enough for multiple cables if I ever want to add more than one, by distributing the coax support along the rope I would put less vertical stress on the cable at the top, and the rope itself might be useful for pulling the platform a bit to remedy a jammed mast. I built a reinforced loop on one end of the rope to attach it to the eyebolt via a carabiner.

My first idea was to use Velcro strips to hold the coax against the rope's vinyl coating, hoping there was enough friction to hold the weight of each coax section. That didn't work, so I later tried relatively-wide tie-wraps, though my concern with those is deforming the coax too much. In the meantime, I used a cable pulling device that uses a helical mesh like a Chinese finger trip to hold the cable with a loop of steel; this system is used by Drex's W3ICC rover. I bought two from DXE: one had an already-closed mesh, and the other was for larger cables that had an open mesh that had to be laced up over the cable. The closed mesh could be opened just barely enough to fit a PL-259 through, but not enough for an N

connector. I laced up the open mesh with the provided steel thread around an LMR-400 type cable with N connector ends; it seemed grippy enough but my lacing job sure doesn't look professional with its gaps and asymmetries.

Another idea from Drex's rover that I never would have thought of was the attachment of the van's cable bundle. TV vans have a large cable bundle in a specialized thick helix around the pneumatic mast that is dragged up as the mast extends upward. Because I removed the original metal platform at the top of the mast which included its helix attachment, the new wood platform would have to support the heavy helix if I wanted to make use of any of the



cables inside. Drex uses two U bolts and a split section of PVC pipe cradled in the bottom of the U to support his helix. I didn't take measurements of Drex's bolt spacing, so I guessed at a little more than a foot, which I realized afterwards is probably too wide. Cutting PVC pipe longitudinally on my table saw may have been dangerous, but it got the job done. Because the helix is slightly flexible, it was hard for me to tell how tight to pull the U bolts up; it seemed after a point that the tightening resistance was constant every time I did a full turn on all the bolts.

The four coax cables inside the helix appear to be 75 ohm video cables. To ensure I use a known good coax of minimum length, I decided like Drex did to ignore all those helix coaxes. Most of the rest of the helix contents are multicore bundles good for control signals, and two twisted pairs of thicker gauge that might be good for carrying moderate current someday if needed. My immediate need was for five control lines for my Yaesu 800 DC rotator, and someday soon I'll probably want four other lines to control a 4x1 relay to demultiplex RF to four low band antennas (another Drex idea) to minimize heavy vertical coax runs. With a total of 9 control lines needed for now, I could have a single separate multicore alongside the coax going straight up instead of dealing with pulling the helix. While this would be a lot simpler for the platform, a separate multicore increases site setup complexity during roves and makes adding more control cables in the future more difficult. By using the helix, I'd have up to 23 additional lines available at the top of the mast for future functionality. Still, it was reassuring to know I have a backup plan for my known control signal needs if the helix doesn't work as expected; I also ordered a long rotator cable that I'll keep in the van as a backup.

The cables at the mast top terminate in two groups. One group with 3 of the 4 coaxes and the majority of multicores terminate within inches of the end of the helix jacket. The other group is covered in a stiff wrap and ends about 4-5 feet from the helix jacket end. Identifying the individual multicores coming into the van from the helix was time consuming given the tightly wrapped and dividing bundles going through tight

areas. After lots of finger tracing I finally was confident I could match the 4 most-populated multicores inside the van with the other ends coming out of the helix at the mast top, and wrapped both ends of each bundle with a color tape. I concentrated on the 5x and 4x multicores at the end of longer group at the mast top because they would be easier to work with. Those two multicores contain exactly the number of lines I need for the rotator and relay respectively. After stripping the wires on each end, with the help of my son we confirmed continuity in all but one line in the 4x cable. I was surprised that one line would be bad with the rest good, but glad I found out early. Fortunately, that 4x also has a shield and uninsulated wire that I can use as the ground return for the relay that I'd need anyway. So it seems like I have what I need for the initial 9 control lines.

With a couple days of rain predicted, I wanted to test the platform and then move the van into my rental garage space given the now-exposed wires and connectors around the mast. I bolted the rotator to the mast top with the platform in-between, secured the helix through the U bolts and PVC, and attached the cable grip holding a 50' coax to the eyebolt with a carabiner. After starting the AC-powered van air compressor and verifying 20psi in the compressor compartment on the driver's side, I pushed the button in the control panel on the passenger side to raise the mast. I heard a hiss that was difficult to localize but I think came from under the van, though I couldn't remember if that was normal or a new problem.

After a few moments, the first mast section started to rise. The mast seemed to take much longer to raise each section than the last time, and when I gave up waiting for it to get higher, one section was only about halfway extended and the very top section did not extend at all. Was the lack of full extension caused by a leak indicated by the hissing, or by the off-center pulling force from the helix attachment, or just from age and not exercising the mast as much as I

should have? An answer, if any, will have to come another day. In the meantime, I'm calling the test a guarded success since the height should be more than useful enough for VHF—I'm guessing about 25 feet though I wish my test included attaching a tape measure to find the actual height. This is a big milestone in the van project, allowing me to continue getting the rotator system wired in and experimenting with antenna mounting schemes starting with a log periodic. **73, Pete K0BAK**



Antenna Gain: Facts and Fiction

Originally published in the September issue of “Anomalous Propagation”. Newsletter of the Mid-West VHF/UHF Society. Used with permission.

Author: Dr. Al Torres, KP4AQ

There are some facts which most hams do not know and some fiction which most hams know. I will try to explain some of the facts and some of the fiction.

Facts: Antenna gain is the product of antenna efficiency times antenna directivity. Mathematically it is: $G = \eta D$. G is for gain, η for efficiency and D is for directivity. **Efficiency** is made from the sum of radiation resistance and ohmic resistance. You want radiation resistance to be large and ohmic resistance to be small. Antenna **Directivity** is defined as a function of antenna effective aperture (size) and wavelength. Mathematically: $D = 4\pi(A_e/\lambda^2)$. D is directivity, A_e is antenna effective aperture (size) and λ is wavelength.

Typical radiation resistance for a dipole is 73 ohms; typical ohmic resistance for a copper dipole is 6 ohms. Efficiency is 92%. Theoretical gain for a dipole is 2.14 dBi; practical gain for a copper dipole is 1.98 dBi.

So antenna gain is a function of antenna size, wavelength, and efficiency. The smaller the wavelength, the higher the gain; the larger the antenna, the higher the gain, the better the efficiency, the higher the gain.

Fiction: One of the functions of efficiency is what material the antenna is made of. Conductivity of the material will determine some of the ohmic losses. Conductivity for Aluminum is 2.82×10^{-8} ; conductivity for Silver is 1.59×10^{-8} . For Copper it's 1.68×10^{-8} . For Graphene it's 1.0×10^{-8} . So Graphene is 59% more conductive than Silver, Copper is 6% less conductive than Silver, and Aluminum is 177% less conductive than Graphene. So why not make the antennas out of Graphene or Silver? You want “rigidity” on antennas so to make the antenna more efficient, you can coat the antennas with Silver (Skin effect) which becomes “thinner” as function of wavelength. The Antenna Gain is measured from an antenna standard; a standard is like a ruler which can measure 12 inches. Unfortunately, antenna gain standards (AGS) only go down to 300 MHz. These standards were produced by the Naval Research Labs and they are mostly gain horns with about 15 dBi for different spectral sectors.

So how do we measure the antenna gain of an HF Beam? We don't; when they give you a gain it is mostly a theoretical approximation based on directivity. There are no gain standards below 300 MHz.

The IEEE was working on a gain standard at 150 MHz based on a double dipole; unfortunately, the variabilities were so great that such standard is still in the development format. So gain measurements and gain numbers below 300 MHz are just approximations based on theoretical directivity; most of the gain for HF and low VHF antennas are theoretical and not practical. The losses from aluminum, baluns, coax, traps also reduced the “practical gain” from the theoretical numbers which are mostly published by antenna manufacturers. **This gain is Fiction!**

Chandra X-Ray Telescope Images

You can find some images captured by the Chandra X-Ray Telescope (and others) at https://www.nasa.gov/mission_pages/chandra/news/nasas-chandra-opens-treasure-trove-of-cosmic-delights.html

These are so amazing they seem made up (or like someone jumped the gun on New Jersey's new marijuana law ;-). But they're real!— W2BVH

An Experimental VHF to 24 GHz Transceiver

A stand-alone experimental wideband SDR transceiver is described at <https://g1lps.com/langstone-tranceiver-vhf-ghz/>. The hardware is surprisingly inexpensive. As shown, it still needs receive and transmit filters and an output gain stage (or 2), but most of it is there and running. Thanks go to **Joe W2JEJ** for the link.

Another story about a Cheap Ham

By AI – W9KXI

In the 1970's, my father became interested in 2M FM. By and by, he built a pair of 2M yagi's and stacked them (side by side). His only other antenna was an 80M dipole, which he also used on other bands, with a tuner.

It was about 1996 when my dad went into "nursing home care". In 1997, I disassembled his station and his antennas. I brought most of his gear back to New York, including the dipole and its coax but...not the 2M antennas. Eventually the equipment and the dipole were all sold off but not the coax. It's coax. I might need it.

Over the years, (on HF) I progressed from a Heathkit HW-101 (mid 1970's) to a Kenwood TS-530S (early 1980's) to a Kenwood TS-830 and then a Yaesu FT-1000MP Mark V (2004). A year after the acquisition of the FT1K I bought the 6M transverter which Yaesu had for that radio. In short order, I also bought a M² Omni antenna and installed it in my attic. With one income, two kids, a mortgage and a car payment, to save money, I looked around and found that coax, which had been my Dad's.

I'm sure that my thoughts at the time were: "Hey! It was my dad's! Coax is Coax. RG8 is RG8, they're all the same. I'll replace it with something better someday. Besides, this is just temporary. Yes, I'll replace it someday."

I was now on 6 meters!

If my memory is correct, I only had that Yaesu transverter for a year and then I sold it. In 2010, I bought my FTDX-5000MP. It has 6 meters on it! At some point, my good friend Ken gave me a 3 element 6M Yagi. Good news. I already have coax run part way to where the yagi will be located. Cool! I can save money on the installation. And I did.

Over the next 10 years, I would encounter that coax from time to time and think to myself, "Yup some kind of 9913 here. That's all I use here. Yup. 9913."

In 2020, I added a Lunar-Link 6M amplifier and everything was fine. Fine except when I ran the FT5K barefoot. The FT5K dialed" the output power back to 100 watts. I had to use the internal tuner to get full output. Checking the system VSWR, it was ~1.4:1. Hmmmmmm. That's not THAT bad.

To shorten the story - The coax finally did come under scrutiny and I started looking for the familiar Belden markings but they just weren't there. There were NO BELDEN markings! This is what I found →

It was then that I realized where this came from and realized that this stuff just might be 50 years



old!! And it still has an Amphenol connector on it, which my dad installed nearly 50 years ago!

ALPHA does still make coaxial cable but not PT. NO. 9846 .

As I write this, I still haven't tested the system yet but changing that coax out couldn't have hurt anything. Other measurements taken with my Chinese antenna analyzer. First, that 50 year old ALPHA coax. →

I'm not sure what it means but the $X(\Omega)$ was creeping up and up, all the while I left the Analyzer connected. That can't be a good sign. (The cable length you may ask. Just short of 50 feet.

For comparison, the following (below) is a measurement taken on an 8 foot length of 9913F7 coax.

I've emailed ALPHA asking for specs on the cable. Frankly, I'd be surprised to ever hear anything back from them.



Future plans for the cable? I don't

know. Maybe on April 1st it will be a surprise gift for someone. Do you have suggestions? Want it for **your** inventory?? Or...maybe I'll put it on the "Mario Table" and wait to see who picks it up. Or, maybe I'll take a knife, cut and peel back the jacket just to see what 50 year old "shielding" looks like. I do know what ~50 year old Radio Shack coax shielding looks like. But THAT ...is a different story.

73, AI – **W9KXI**



Being a Better Contest Operator

There's a nice YouTube video with the captioned title at <https://youtu.be/zKI0Mi1N3e0> . Most of the presentation is geared to HP contesting but some of the general recommendations apply to all contests. (And besides, some of us also operate HF contests). Worth a look. —**Lenny W2BVH**

Homebrew 22 GHz Spectrum Analyzer

9A4QV shows how he jury rigged a homebrew 22 GHz spectrum analyzer in this YouTube video. <https://youtu.be/oqh8IH7178g> It's cobbled together, and you'd need a well stocked junk box to replicate it, but it's a great example of resourcefulness, and it works pretty well too. Check it out. —**Lenny W2BVH**

Member Spotlight!

By Phil WF3W



Artwork by Lexie, W2SJ's granddaughter

A UNIQUE VANTAGE: HOMEBREW TO LUNA

Elliott [EL] WEISMAN, K3JJZ

1st Licensed: 1958

Favorite Activity: Camelback

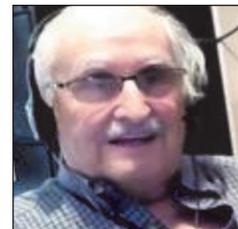
Favorite Mode: would rather build something than operate

Offices: Packrat President 70-71, VP 69-70, BOD: 66-68; 76-78; 06-08; 17-21

Editor, Cheese Bits: 67-73

Brand-new GREAT-grandfather {4 months}

Oldest living member



Our first spotlight illuminates a Packrat who has lived “Packrat”, seen Packrats in action, been head-honcho Packrat, and participated in our biggest Hams-working-across-oceans-and-continents project, which shot for the moon.

El's path to Hamdom has been rather unique. The military plays a predominant role, but it was not through the auspices of the Army's Code School that El became part of our most fabulous hobby. Rather through our oldest nemesis, unrequited love.

After experiencing his first heartbreak in romance, he imposed a prescient, pre-lockdown on himself, avoiding social contacts. In his inner sanctum, he discovered “fooling around” with electronics was not only diverting but, satisfying. The major appeal was “doing something with his hands”. Intercoms & radios led the way, but nothing aligned with Ham Radio – yet, as time worked its magic balm for affairs of the heart.

One of the radios with which El tinkered had short-wave bands included. He immediately recognized how neat that is and dove into a learning manual for ham licensing. Listening to W1AW did not, quite, sharpen his prowess with CW. El graduated high school and entered Pharmacy School. This proved a novel environment for a burgeoning mind and prepared El for meeting the quest for licensing with new fervor. While employed in a drug store, El was sure he had been permanently deferred from being drafted [Famous Last Words], in the era between Korea and Vietnam. He submitted an application to the Treasury Department, to participate in enforcement against illegal drugs. After a friend introduced him to marksmanship, via calibers 38 & 45, El was set to work for the government. His final deployment, however, was with another branch and quite different.

One month after setting his sights on Treasury, he was asked to participate in the draft, i.e., as a draftee. El “enjoyed” cleaning barracks and extra KP stints, developing a singular attitude, during these 2 years: BEST THING THAT EVER HAPPENED! After Basic, advanced Basic offered schooling. As El looked-over the mundane and the more promising mind challenges, a friend, from Brooklyn, pointed-out 2 class lengths: 8 and 16 weeks. Why not avail themselves of the “biggest thing” the Army has? El immediately glommed onto lab technician as he always enjoyed medical laboratory duties. Posted to Fort Sam Houston, Texas, El

Member cont'd ..

confronted the most challenging area in all trauma: burns. The Fort was renowned for its burn research and pioneering treatments {for those on similar paths, Pharmacy was not offered}. Fully cognizant of military training's emphasis on HOW, not WHY — of extreme importance to Hamming — El and a buddy found a direct route to success, which vehicle was learning HOW to determine blood type; each student, analyzing serial samples, had to determine ABO blood type. Important Note: the part of “the buddy” was the same guy from Brooklyn, above. The buddy noticed the Sergeant, running the class, had a “key” to the answers near his desk, in code. Embarking upon the fast track to success, they commenced to finishing analyses in under 3 minutes, scurrying back for their next samples. Being a “Sarge, in charge” — whom you did not address as “Sir”, because non-coms work for their living — he asked, pointedly, if they had copied the code sheet. NO SERGEANT! “We deciphered the code”!

THIS WAS A VERY IMPORTANT MILESTONE in El's growth toward assuming the mantle of Ham! Both were assigned to “dream” jobs – Army flavor – for the entirety of their tour: the budding Brooklynite was transferred to a post very near home, as a dental lab technician. El was ensconced in the Surgical Research Unit [not to be confused with experimental surgery], at Brook Army Medical Center, first-tier of Army medical facilities.

El practiced hard to perfect his reporting-for-duty shpiel: reporting for the first time, El pulled-up, ram-rod stiff, in front of the 1st-Sergeant - whose feet were planted firmly on his desk – purring sweetly, “Can I help you soldier”? Stumbling through his best Army demeanor, Sarge asked to see his orders, ensuring he is even in the correct building. He is, then directed to upper echelons to meet his C.O., who introduces himself as Bob Pillsbury, MD. The year is 1957 and the Colonel begs him to be comfortable, referring to the new man as “son”. And now, son's education really begins, as real as it can get. After this immersion in excitement, drama and having fulfilling work, El decides pharmacy is not for him.

Now enter Ham Radio - in a moment. El filled in for the owner of a drug store and this REAL drug store had a soda fountain. ONE DAY... a customer drives-up, with a triple halo antenna, and El remarks to the high school kid, dishing-out the whipped-cream confections, “a Ham just drove in”. After the customer exits the store, Dave – the soda-jerk – asks El “if he is interested in Ham Radio”.

El: Well, I always wanted to get a license, but I could never handle the code

Dave: I'm WA_ _ _ [memory lapse] and my dad is a Ham

2 days pass...

Dave: my dad says he can guarantee that you'll get a Ham license {dad is ex-Navy}

Elliott visits the dad/son QTH, goes bug-eyed at the gear...

Dad, W3FZO: 2 months! You gotta give me 15 minutes, every night! No skipping!

El dives in, gets his code speed above 5, always eyeing 10. The test was administered by the Elmer-dad, a certified examiner. El now has an Elmer and a call sign, K3JJZ.

Time to buy and “reason” with your spouse, an ideal way to get the household firmly in your camp. Unknowingly, El lives in incredibly robust Ham territory, and prowls roof-tops for antennas. His farthest sojourn takes him, a mere, 3 blocks away. His neighbors are Al, K3EOD [SK] and Sy, K3CHN [SK] and Bert, K3IUV {remember this name}. Elliott's first band choice is 6M {remember this band}. Al asks if he's ever heard of the Packrats; No; How would he like to go to a meeting?

The bug bites El. He meets Harry, W3CL [SK] and Harry just happens to run the 6M net. What a confluence of kismet... First purchase is a 6M converter/mobile receiver. El adds a homebrew 6M transmitter. He is a faithful attendee at every PR meeting. And he builds a lot of stuff.

Then came the time El made a breakthrough in condensed-matter physics [solid state]. He built a transmitter that worked fine. Showing the backed-by-solid-performance schematic, to Bert, IUV, Bert declares “this can't work”. “I talked to you, on it, last week”, El protests in all humility. Bert reiterates, “It can't work”. The heat, growing under El's collar remained there, after all Bert was his sponsor & good friend. They see each other

socially and their XYs have bonded, built upon the solid foundation of “Ham Widows”, unto perpetuity. Bert finally throws-down the gauntlet of challenge betting EI can not build an identical unit – that works. Alas, it did not work. Side-by-side identical. Some propitious gremlin had to have crept into the 1st model and left EI hanging, a complete mystery to this very day. Who can say what marvels would have come from EI’s transmitter, that worked outside the laws of physics?

EI began penning articles for Cheese Bits and took over as Editor, for 5 years. To this day, he is monumentally proud of times when Bert quotes him. He speaks fondly of deep-diving into Fox Hunting. His most joyous outdoor event was picnicking in Ft. Washington State Park, the extravaganza before Hamarama. EI took charge of kids’ entertainment/games. Usual attendance was always greater than 100 – with deep lamentation in his voice – and not 100% Packrats. EI came to a realization – lesson — that he was in the presence of brilliant guys {sorry, gals} and the smartest thing HE could do, was join-up and listen to anything Packrats said. EI exercised restraint, as he puts it, because he always wanted to contribute, that is, “couldn’t keep his mouth shut”.

Around this phase of Packratting, Harry Stein convinces him to set the patterns for Presidents of future times, by running for the head office. By coincidence, EI is making his way through corporate giants, such as Merck and Stuart, always in the vertical, UP plane. He credits corporate responsibilities, and the people under whom he flourished, for teaching him managerial skills, and how to guide employees, as their higher -up, without ruffling feathers nor creating resentment. In short, how to be a superior supervisor. He brings that skill-set to us.

The zenith of EI’s Packrat career is the South American EME expedition. One can feel the excitement, joy and pleasure he experienced, along with other Packrats, in mounting, so successfully, so complex an international expedition. At issue, was “management”. And Packrats, with Elliott, created a model for all to adhere.

It is a little hard to imagine how a Colombian Ham found Elliott as a vector to the Packrats. He used the exact technique EI had used, lo those many QSOs ago: looking for antennas on roof-tops. Of course, EI did all he could to assist fate, assembling a 6M beam on the front lawn, as the distant Ham drove by.

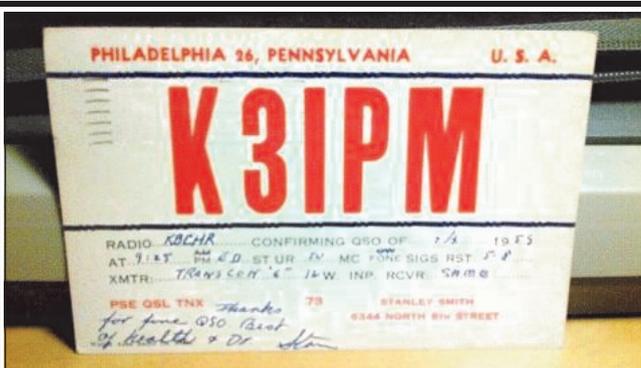
The fact that the Packrats, at that instant, needed only South America for WAC... well, thereby we wait for a future Ham’s journal.

And always remember this little bit of philosophy: “at our age, we are all walking time bombs” – Elliott WEISMAN, K3JJZ

REMEMBERING

Harry Stein, W3CL CHARTER MEMBER [5 15 56] SK [2 17 92]

Ernie Kenas, W3KKN SK [12 11 2009]



Found on eBay by
Bill K1DY!

From 1959

To K8CHR on 6M

Remembrances and tributes to Stan from his fellow Packrats are in last month’s Cheese Bits. An online obit is at <https://www.tributearchive.com/obituaries/18620562/Stanley-Smith>

KIRZ MICROWAVE FALL SPRINT REPORT

Conditions were enhanced for the first hour to the Northeast. Then tropical storm Delta continued to close in and the enhancement went away. Good conditions with Jeff K1TEO working thru 10 GHz (less 5.7) in first few minutes of the contest. And then I heard Jeff for an hour after no matter where I had the beams. My Best DX was with Dana VE3DS at 524 km on 902. Also worked Jeff W2FU on the bottom 3 bands at 432 km. Thanks Ron WZ1V for hanging in there on our numerous tries with final completion on a QSB peak on 1296.174 FT8. Thanks to Bill W2RMA EN90XH for getting on in his driveway on 902 with a three ft Looper. FB copy Bill. Many thanks to Marco KD3PD/R for going out on 902 and 1296 to two grids. Your new 100 mW xvtr on 902 is loud here in Central MD. Thanks to everyone who got on for the Microwave Sprint. Thanks especially to the Southeast VHF Society for sponsoring this fine event. Contacts by Mode Breakdown: 13-CW, 3-FT8 (1296), and 23-USB.

Total: QSOs = 39 Total Score = 8,807
73, Dave K1RZ FM19jh

Ham Receives X-Band Signal from Mars Orbiter

A short article at the ARRL web site describes this feat. See <http://www.arrl.org/news/british-columbia-radio-amateur-hears-mars-reconnaissance-orbiter>

The receiver (doesn't look that complicated):



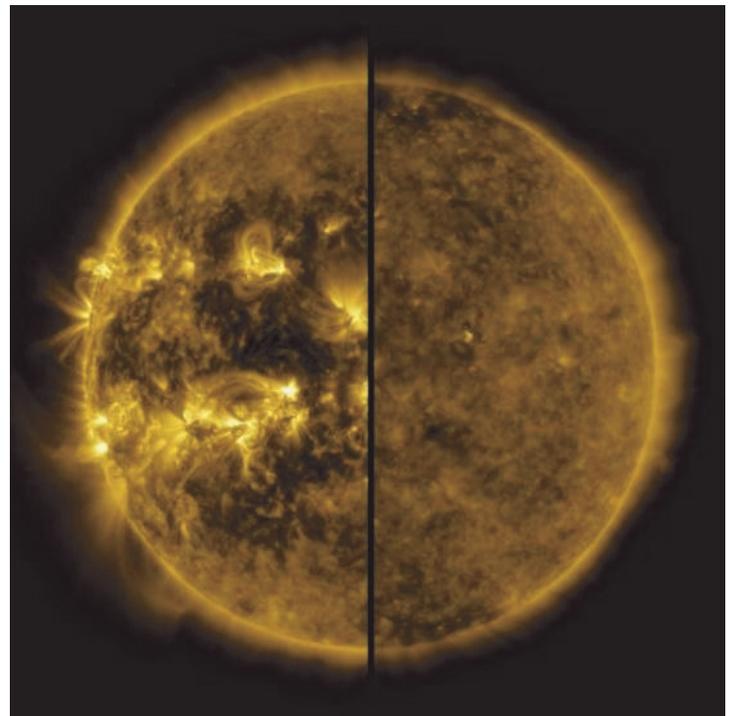
NASA / NOAA Sunspot Predictions

From Phil WF3W

Is it time to put up that tower and beam? According to a NASA press release, it just might be. NASA and NOAA scientists say that Solar Cycle 25 has begun! During a recent media event the scientists discussed their analysis and predictions about the new solar cycle – and how it compares to the last one and the impact it will have.

This split image shows the difference between an active Sun during solar maximum (on the left, captured in April 2014) and a quiet Sun during solar minimum (on the right, captured in December 2019). December 2019 marks the beginning of Solar Cycle 25, and the Sun's activity will once again ramp up until solar maximum, predicted for 2025. Credits: NASA/SDO

The scientists are predicting that the Sun's activity



will ramp up toward the next predicted maximum in July 2025. Solar Cycle 25 will be about as strong as the last solar cycle, which was a below-average cycle. As reported by CNN, "Solar Cycle 24 was the fourth smallest cycle on record and the weakest cycle in 100 years, said Lisa Upton, co-chair of Solar Cycle 25 Prediction Panel and solar physicist at the Space Systems Research Corporation.

Take Care when Logging FT4 / FT8 QSO's

In "The World Above 50 MHz" column of the August 2020 issue of QST, Jon, N0JK, addresses the large rates of unlogged contacts. So far I have found that two Packrats didn't make it in my log even though they were under the impression that they completed the QSO. The WSJT-X saves everything it decodes in a file called "ALL.txt". This makes it easy to see what has happened. Here are the QSO's that were logged by the other station, but not by me:

(QSO 1)

```
200614_202045 50.313 Rx FT8 -24 0.1 514 KR1ST XXXXX FM18
200614_202130 50.313 Tx FT8 0 0.0 511 XXXXX KR1ST R FN21
200614_202200 50.313 Tx FT8 0 0.0 511 XXXXX KR1ST R FN21
```

(QSO 2)

```
200613_225500 50.313 Rx FT8 -17 0.1 813 KR1ST XXXX FN20
200613_225500 50.313 Rx FT8 -8 0.1 1082 KR1ST N2MH RRR
200613_225515 50.313 Tx FT8 0 0.0 1082 N2MH KR1ST 73
200613_225530 50.313 Rx FT8 -5 0.1 1083 KR1ST N2MH 73
200613_225530 50.313 Rx FT8 -18 0.1 813 KR1ST XXXX FN20
200613_225545 50.313 Tx FT8 0 0.0 1082 W2HYW KR1ST FN21
200613_225548 50.313 Tx FT8 0 0.0 1082 XXXX KR1ST R FN21
200613_225615 50.313 Tx FT8 0 0.0 1082 XXXX KR1ST R FN21
200613_225645 50.313 Tx FT8 0 0.0 1082 XXXX KR1ST R FN21
200613_225715 50.313 Tx FT8 0 0.0 1082 XXXX KR1ST R FN21
200613_225745 50.313 Tx FT8 0 0.0 1082 CQ TEST KR1ST FN21
```

You can see in the 1st QSO that XXXXX was right at my noise level (-24). I called the station back twice with the "R FN21" message (Tx 3 in WSJT-X), but never heard that station again. I'm sure that station answered me with a "RRR" or "RR73" message (Tx 4). As soon as you start sending that message (TX 4), WSJT-X will prompt you to log the QSO. That is fine if you are reasonably sure that the QSO will be completed. However, there is a good chance that if the other station (me in this case) does not receive your "RRR" or "RR73", as happened in QSO 1 above, the contact will not be logged by the other station.

The same happened in QSO 2. Station XXXX calls me while I finish up a QSO with N2MH. I then call XXXX back 4 times, but never received anything, so I proceeded to call CQ again.

When you answer a station's CQ call and you continue to receive that station's "R grid" message, chances are that that station is not hearing you. So send "RRR" or "RR73" a few times until you receive a "73" message.

Because FT4/8 QSO's are largely automated (as opposed to RTTY for instance) it is easy for unlogged QSO's to occur. You are less involved in the actual completion of a QSO and since everything takes place on the same channel, as opposed to traditional modes where you usually deal with a signal on a channel during a QSO, you don't really hear the other station and so cannot get other clues on how the QSO is progressing.

I remember that during various contests I have **removed QSO's from my log** if I was not sure if a QSO that got logged actually completed.

Please also read the paper by Joe, K1JT, et al, on the subject as well:

http://physics.princeton.edu/pulsar/k1jt/FT4_FT8_Contesting.pdf

73,

--Alex KR1ST

Packrat Resource Program

After presentations to the Board of Directors and at this month's club meeting, our President, Bob W2SJ has given approval to **institute a new technical Resource Program** intended to better serve our members. He has also appointed me to be the Resource Program Manager (RPM) with the overall responsibility for the program. The program is based on one premise, **Pack-Rats helping Pack-Rats.**

The club territory will be separated into three regions. Each region will have its own Regional Resource Administrator (RRA) who will be responsible for maintaining the resources in his/her region. Within each region will be club members assigned to certain help categories based on their knowledge/capabilities. The three Regional Resource Managers will report to the Resource Program Manager. In addition to the local resources, there will be a Technical Resource Library on our web site with helpful links for our members.

The Resource Program is on our web site. After logging on to the web site, Look for the "Resource Program" tab. Take a look-see!!!

In each of the three regions, there are help categories with assigned club members, who are available to help other members with questions on that category. Is your call listed in any of the help categories? If not, how about helping out by getting your call assigned to one or more of these help category's or if there is a help category we missed, tell us about it, so we can add it and tell us if you can be a resource for it. **For this program to work we need the cooperation of all the members.**

We now have a technical library with links to topics that should be of interest to all our members. It was derived from my bookmarks on my computer. **I would like to see all our members peruse their bookmarks on their computers and send to me at least five (verified still working) or more links that could help other members. These links can be on products, how to, tips, suppliers of Ham equipment and so on.** I will add them to the Library.

Mike N2DEQ

Resource Program Manager



2020 marks 100 years since the first announcement of Presidential Election Results on commercial radio – politics would never be the same. Only 100 people were listening. The broadcast occurred at 8 p.m. on Nov. 2, 1920. It was Pittsburgh's KDKA.

Tnx, **Phil WF3W** for the pic & info.

The Wayback Machine In CHEESE BITS, 50 Years Ago

Nibbles from November 1970. Vol. XIII Nr. 11
de K3IUUV Bert
(author's comments in italics)

“Our Prez Sez”. Prez EI, **K3JJZ** (*also editor at the time, and our current auctioneer*) reported on contest preparation highlights. The 1296 crew is improving their gear. **W3CL** got his welded tower section done, and **K3GAS** just lowered his for repairs! EI quipped “If he holds true to the Packrat tradition, it won’t go back up until there is at least 2 inches of snow on the ground.” The chairman **K3BPP**, Walt, and recent SK **K3IPM**, Stan (*RIP Stan, many fond memories, Bert*) are finalizing club plans. EI and **K3MXM** finished installing one of two towers at Inglis house for use by the residents. EI noted that you’ll hear lots of stations getting ready, and you can tell by counting the large number of “Hello Tests” to be heard on the bands!

ARRL Bulletin NR 292, 9/8/1970. Don’t quite understand this. The FCC is considering a bill that would allow “Amateur radio operations by future United States Citizens.” (*Who are they?*) Prominent Ham, Senator Barry Goldwater, **K7UGA**, spoke in support of the bill which he had introduced. More details in December QST.

The Big 1296 Story. The Rodanthe Expedition. If you’re not familiar with the Club’s DX-pedition to North Carolina, you can read a good two-page synopsis in the November 1970 Cheese Bits. It

includes a daily, blow-by-blow discussion of the activities, many highlights of the operation, and lessons learned for future operations. For those of us that were there (*and are still here!*) (Dan, **WA3NFV**, EI, **K3JJZ**, Walt, **K3BPP** and ye author Bert, **K3IUUV**), it helped relive an exciting moment in club and our own activities. I won’t bore you with the details here. Read them in the online version of this issue, or read the description on our website. (*Interestingly enough, I was the author of this article, 50 years ago.*)

From the Book Rack. Paul, **K3WEU**’s monthly column discussed the book “How to Read Electronic Circuit Diagrams.” 256 pages with some large foldout samples. He gave it an “excellent” report. Printed by TAB books, the hardback edition cost \$7.95, softback \$3.95.

New Products of Interest to Hams. This aperiodic column, written by Lynn, **W3NSI**. He described the Janel model 432 CA, a 432-transmitter using crystal control and featuring an all transistor design. Built in power supply. \$64.95. Also, the Eddystone receiver, a 27 – 240 MHz design in four ranges. A husky price for the time, \$1,295 included a built-in power supply.

Calendar. Next meeting, November 11. Speaker’s topic to be announced.

Membership. No new activity.

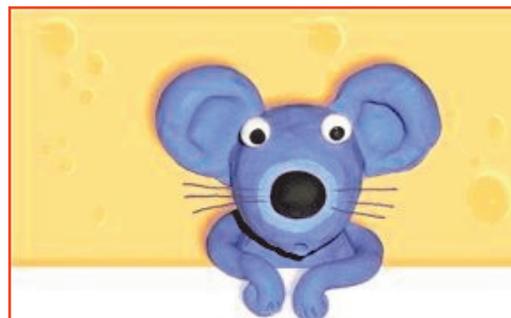
2 Meter Activity Report. **W2EIF**, Joe, reported excellent propagation on the band in October. He has had regular contacts with **W1YTW** (Maine), **K1VHS**, **W1JSM** and **WA1JTK** (New Hampshire) and many others in Rhode Island. One of the best band openings occurred during the October club meeting, when **K9HMB** in Illinois worked **WA2FGK** in NNJ. Of course, all the members were at the meeting and missed it!

Technical Topics. A timeless article titled "Universal Stacking Harness for Stacking 4 Beams," was written by Joe, **W2EIF**. This article featured theory, calculations, and practical suggestions for stacking multiple beams using a tailored cable matching harness. (*Still applicable today, this **should** be on the website if it is not already there.*)

Swap Shoppe. By **W3ZRR**. (*Always nostalgia. Now we use the club reflector.*) An SR-46 from **WA2BVW** for \$150, a station package of an HQ170A receiver with Nuvistor preamp, a 600-watt transmitter for 6/10 and 15 meters, and a 6-meter, 5 element Telrex beam. Package deal with many extras. Make offer! And four 8-element 2-meter Telrex design beams made from hard aluminum. \$5 each from Dave, **W3ZD**. Also, some other items of interest.

Miscellany. *Postage for this copy was still a single 6-cent Roosevelt stamp. 6*

*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 any of the above items, visit our website (www.W3CCX.COM) and read the full issue scanned by **K3IUV** (me), and posted on the website by **W3SO**, 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)

Special thanks this month to Bert, K3IUV for the Wayback article. Composed under duress of illness, but he saw fit to come up with it in spite of difficulties —W2BVH



For no-code Packrats, it says “BOO”!

(Tnx WF3W for the pic)

Here’s a link to a video on how Edwardians (folks in the UK at the turn of the 20th century) wired their homes and inadvertently killed themselves with the new utility “electricity”.

<https://www.youtube.com/watch?v=SkXyCoUCeK0>

In my opinion, the video is too long, but watching just part of it will give you a flavor of how misunderstood a new technology can be; even a successful one.

A second suspension cable supporting the 900 ton feed structure of the Arecibo radio-telescope has failed. This is the second piece of bad news out of Arecibo this year. Let’s hope this world class instrument can be mended.

Details at <https://www.sciencemag.org/news/2020/11/second-cable-breaks-puerto-rico-s-arecibo-telescope>

Events

For inclusion, please direct event notices to the editor.

50 - 1296 MHz EME Contest - Contest - Weekend #2 November 28-29, 2020. Details at <http://www.arrl.org/eme-contest>

Winterfest - Hamfest - January 9, 2021. Harrisburg, PA. For details see <http://www.w3uu.org>. Use good judgment when deciding whether or not to attend in this era of COVID

January VHF Contest - Contest - January 16-18, 2021. See <http://www.arrl.org/january-vhf> for rules and details. Also see the Packrat web page for club specific info. (Info will be posted shortly).

June VHF Contest - Contest - June 12-14, 2021. . See <http://www.arrl.org/june-vhf> for rules and details.

I was gobsmacked by some of the 80 and 40 meter yagis shown by WA3 FET at his presentation at the Frankford Radio Club in September. The YouTube video is at <https://www.youtube.com/watch?v=SkXyCoUCeK0>

The video is almost 2 hour long, but you can browse through it and get an idea of the engineering involved in designing and building these monster antennas.

I found it even more interesting because his antennas are OWA’s (“optimized wideband arrays”) and my homebrew 6 meter yagi uses the same design (but on a 13’ boom). I wonder if this proves I have good taste?

—Lenny W2BVH

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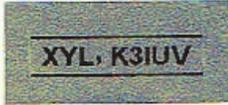
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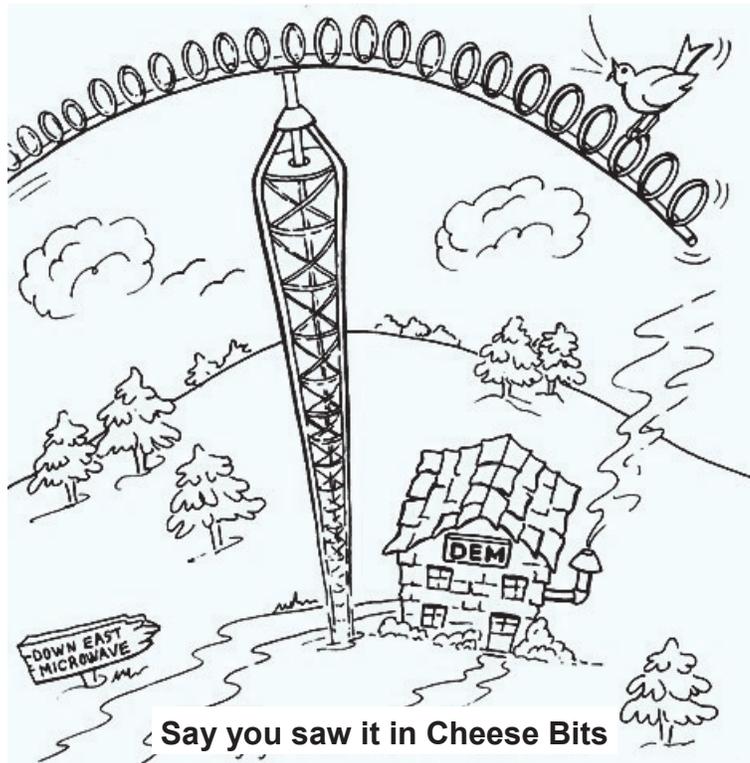
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