PREZ SEZ:

At first I thought this month's Prez Sez would be near impossible to write. I usually try to promote upcoming ham radio events and sometimes talk about my thoughts on the overall state of the club.

A lot has changed in the last few weeks. Probably for the first time in history many club meetings, hamfests and conferences have all been cancelled and many future events are in doubt. In society as a whole many job environments have been dramatically changed and jobs are even furloughed. If you watch the news on TV or spend much time on the internet it can be down right depressing. We have been told to "Shelter in Place" to "flatten the curve". What's a ham to think? After listening to many sources here are my thoughts.

Shelter in place - if you can.
Wash your hands per the directions given by health officials.
Realize that this virus will not magically go away soon.
Hope that a vaccine can be engineered and produced in a shorter time span then usual.
Don't fall for the "snake oil" some thieves and politicians are selling – do your homework; use sources that can be trusted and that verify their sources.
Last but not least, find strength in your family and close friends - even from a distance.

The above are some thoughts from someone other then an expert – just my thoughts.

There is a bright spot for many Hams in the "shelter in place" environment. We do not need to gather together physically to enjoy many facets of our hobby!

Some possible ideas
First, make sure to spend lots of time with family and friends even if only by phone.
If you go to church or temple, check their website. They may have services over the internet.
Haven't been on HF recently? Time to put up a simple dipole and give one of the bands a try.
Get on the local repeater. The Packrats have both a 222 and a DMR repeater ! WARC has several.
Get on Slack, or test out your equipment.
Enhance the automation in your shack.
All those schematics of future projects you have been keeping, dust off your work bench and build something.
Keep your eye on the Packrat forums and web site for the latest Packrat information too.
Try YouTube to learn more about Physics, Electronics and Ham Radio. Try NOT to look at the latest version of a Perpetual Motion Machine or someone's impossible, undocumented project.
Many test equipment companies have "White Papers" on the internet on how to make tests and also explain the physics behind these tests.
Be sure to get on the Packrat (and other) Nets.
Don't forget the Friday night Nets.
Is it time to try doing a YouTube video for a

Packrat meeting presentation you could give? Doc, W3GAD could use these to fill in our disrupted meeting schedule.

Remember that Ham Radio is a very big hobby. Very few of us have tried it all. Read up on other areas and try something new!

The Club hasn't come up with a good replacement for our General Meetings yet. Several clubs are using Zoom. Others are using conference calls (audio only). We need presentations. Contact Doc If you can do one.

At the beginning of this piece I thought I couldn't find much to say. Now I realize it's just the opposite. There's are two elections coming up. Consider "Vote by Mail". In PA see https://pavotersservices.pa.gov for details. (Voter services > Mail in Ballot Application). The PA PRIMARY is the end of April. Maybe someone in NJ and other Packrat states can provide Mail in Ballot info for others via the Reflector.

We are planning to go to Camelback. But, as you can imagine, Camelback and Field Day are too soon to call. Keep abreast via the club web site and reflector. Naturally, this is a moving target. Also take your personal health and the opinions of your family into consideration.

So, is it time to pull out that old AM 2 meter tube rig and put it on the workbench? After you replace that leaky electrolytic and test, call up a buddy and make a contact! But, I'm not sure it's a good idea to try this with a Heathkit "TWOER"   HI.

Have some fun, spend some time on the bench, learn more and build something.

Stay safe.

73, George KA3WXV

MESSAGE FROM THE OLD GUY

de K3JJZ

This old guy I think is the oldest active in the club. Somebody correct me if I'm wrong. However this old guy has really had a great career with the Pack Rats which I have enjoyed thoroughly.

Some of my contributions to the club are as follows:
- President of the club.
- Editor of Cheese Bits
- Member of Board
- Organizer of the HK1TL moonbounce team which was the first to make a radio contact from the continent of South America. (Detail on our web-site)
- Recipient of 2 Pack-Rat-of the Year awards

One of the dangers of being an old timer is that you continually compare current activities in the club with what it used to be. I'm guilty of that.

So now for the rest of the story.

This story really has to do with Camelback and the Pack Rat effort in the June VHF contest.

After the 2019 June Contest both WA3GFZ and WA3DRC informed our president that they wouldn't be back to do the microwaves in 2020. Both Paul and Ed had been band captains for the microwave operation for about 10 years. In fact the trailer tower that was used for 903/1296 belongs to Ed. (purchased from Stan K3IPM who graduated to using bucket-trucks). Also the equipment for 2304 and up belonged to Paul. Both Paul and Ed have agreed to train their replacements.

GUESS WHAT???   No volunteers for replacements. Time marches on and the BOD keeps discussing what it is we are going to do. George KA3WXV says we may have to operate Camelback without the micros.

My comment at BOD "How in the hell can a club with the Pack Rats reputation operate June contest without micros???"

George answered "what do you expect me to do?

My thought, if I were younger than 87 I would give it a shot. But guess what I am one of those old guys who is hardly proficient at CW.
And so I thought this was part of some decline of the Packrats.

Lest you think all was lost, one of those who I voiced my displeasure about no micros was Bob W2SJ. But he agreed that we needed to have micros and he'll do it. My Hero !!!!

And so my friends in this issue of Cheese Bits are pictures from the latest trailer party in Delaware. Of significance is that all of the microwave antennas will be on one tower. The mechanical work was done by Ray N3RG and Bob W2SJ. The array has 903, 1296, 2304, 3456 loopers all mounted on an "H" frame and smack dab in the middle is the dish for 5g & 10G.

There is a picture of the electronics on the rear of the dish which shows the 5g transverter, the 10g transverter, and the 144 MHz down converter.

At the last work party hosted by Nick N3YMS all the coax was measured for each band. There were in addition to Nick, KA3WXV, WA3YUE, WA2OMY, W2SJ, and me K3JJZ. My apologies if I left someone out.

Finally guys, I was thinking that there is a distinct possibility that I might not be around for Camelback 2021 this could be my last trip to Camelback. At my age you never know.

So thank you all who have contributed past and present for making this a great affair.

MY CUP RUNNETH OVER!
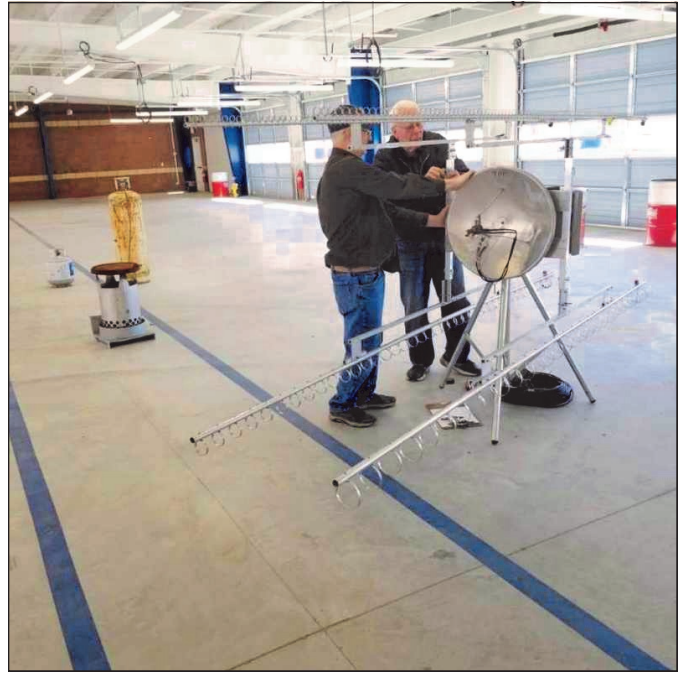
Vintage VHF: The Heathkit Twoer

Dave W2KV

Many VHFers of a certain age got into the game with the Heathkit HW-30, the "Twoer". In the '60s, Novices were allowed phone privileges on the 2 meter band and the Twoer at $44.95 in kit form was an ideal starter rig. About as bare-bones as a rig can be, the 5 tube Twoer combines a crystal controlled AM transmitter with a very sensitive super-regenerative receiver.

Being stuck at home and looking for things to do, I decided to dig out my Twoer collection and see if I could get them working, one being my original Novice rig from 1966. I did the usual old radio stuff, replace paper and electrolytic caps, deoxit the controls and tube sockets and cleaned up funky solder joints (hey, I built this thing as a Novice, I'm amazed it worked at all).

The thing came to life with the usual superregen rushing noise and actually made a little output power. After some alignment the receiver was hearing pretty well and the transmitter was making 750 mW, about all that can be expected from a Twoer. Lack of transmit audio was traced to a bad microphone.

By this time, pretty much all of the cheap ceramic mikes that came with Twoers have failed, but I was able to find a few working high impedance mikes in my audio junk box which brought the TX to life.

The Twoer has real plate modulation and with a good mike and careful adjustment of the final amp tuning it will make very nice AM transmit audio. The 750 mW carrier will modulate up to about a watt and a half on voice peaks. The transmitter uses 8 MHz crystals which were commonly available back in the day, multiplied 18 times to get to the 2 meter band.

The superregen receiver in the Twoer is a remarkable piece of Heathkit engineering. One tube and about ten parts make a complete VHF AM receiver. Invented by the genius engineer Edwin Armstrong in the early 1920s the superregen is a development of the regenerative detector employed in early receivers. Instead of an adjustable regeneration control, the regen level is constantly swept from zero to maximum feedback at a high audio rate, in the Twoer at about 40 kHz. This produces a very sensitive detector ideal for AM but with poor selectivity and large signal handling.

The tuning knob on the Twoer covers 144-148 MHz with half a turn of the dial so it doesn't take many signals to fill up the band. Another byproduct of the superregen detector is that the width of a detected signal is proportional to its strength, so one loud enough station can cover the whole band. The receiver without any signal produces a hissing sound similar to an unsquelched FM detector, thus the nickname "rushbox." My Twoer easily hears an AM signal from my HP8656 signal generator down to -110 dBm and is "full quieting" at -80 dBm. At this point all three Twoers in my collection are now working with mikes and crystals.

On the air testing has consisted of sending one Twoer over to Peter WW2Y's QTH seven miles away. We easily worked both ways with quarter wave whips stuck in the back of the radios. Back in the day with lots of Twoer-equipped kids on the air contacts of 30 and 40 miles were commonplace and occasionally real DX of 100 miles or more was worked.

It has been a fun project and has provided some entertainment for a housebound ham. If any Rats want to try a 2 meter AM contact let me know.

73 Dave W2KV

Addendum:

As I mentioned the Twoer is already very sensitive but too easily overloaded. I've been looking for a bandpass filter I built years ago to place between the antenna and the rig but no luck. It's a nice coaxial cavity filter out of an old ARRL handbook. That would be the biggest help, to cut down excess out of band junk loading the front end. "Front end," is all it's got with one tube!

I did find a small LC 2 meter BPF from my 10 GHz transverter's I.F. stage, but it is not too sharp, only down about 3 dB at +/- 5 MHz. Hooking the Twoer to the beam on the tower produces all sorts of squawking noises so I will see if that filter gives any relief.

Here is some data on the 144 BPF. I measured it on the VNA and then simulated on LTSpice. They agree pretty well, but it's not sharp enough. It doesn't seem to help the desense. Now I'm thinking moist of the gratch is from in-band repeaters so a filter would have to be mighty sharp (think duplexers).
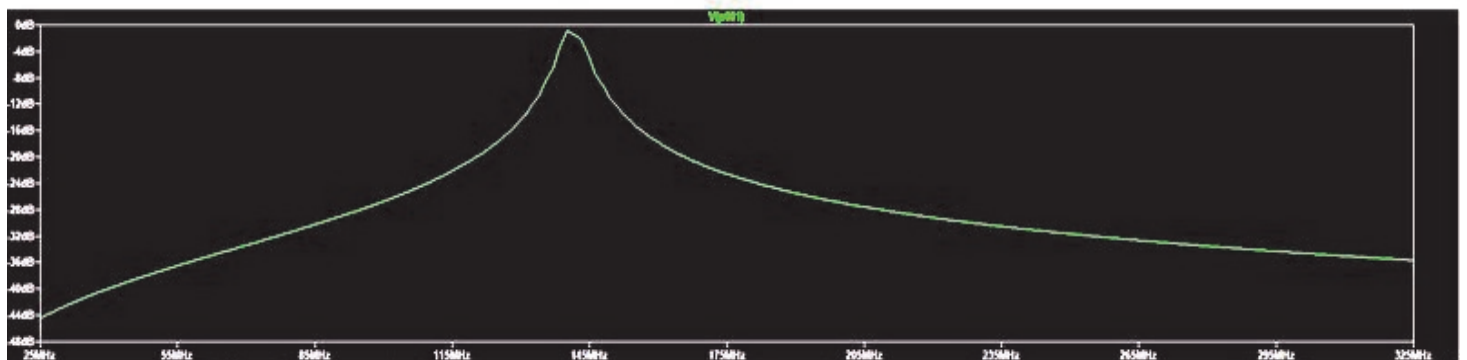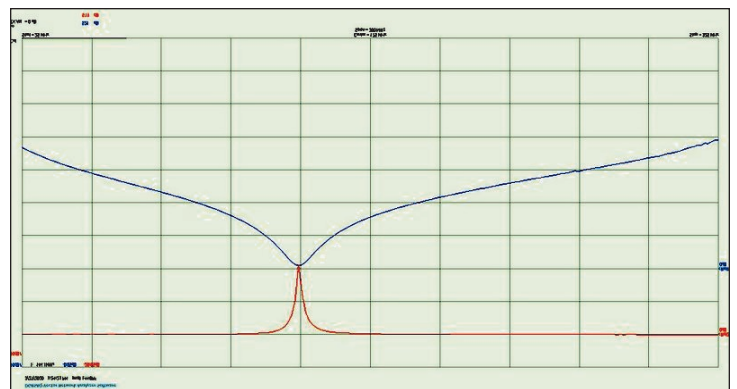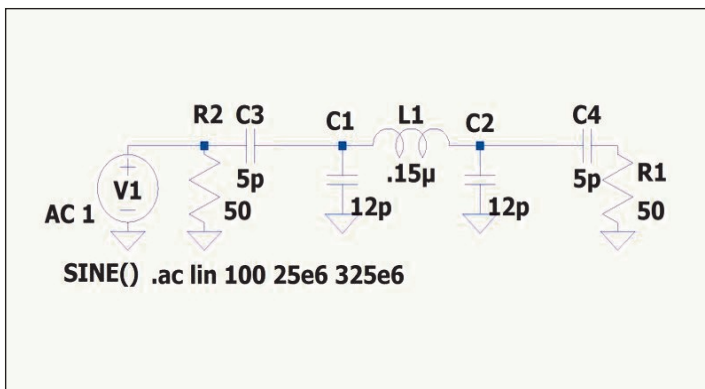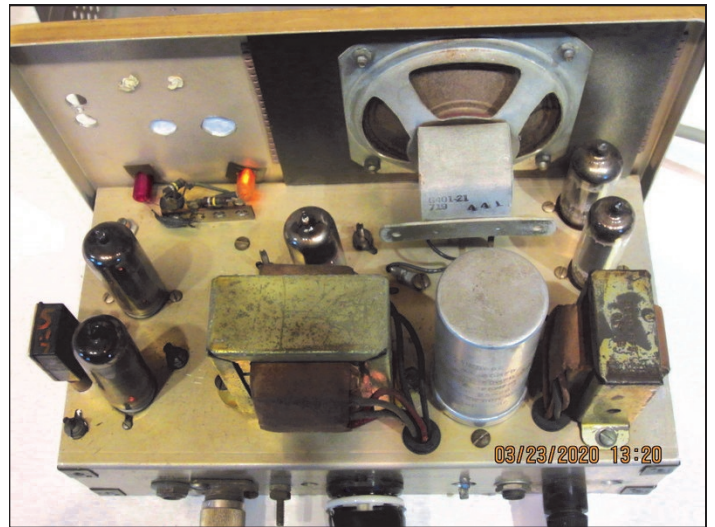
More on "The Best September VHF Contest Ever"

After reading last month's Cheese Bits article, "September 1984: The Best VHF Contest Ever?" by Russ K2TXB, I was reminded of that fantastic opening that I was able to take advantage of, albeit briefly.

We were living in RI at the time and we had a group of young families that went on a retreat each fall. Because the weekend fell on the same time that the ARRL September VHF contest would be held, I stuck my TS700 2m multimode rig and a 12V battery and an 8 element beam into the station wagon. Our destination was the W. Alton Jones Environmental Educational Center, run by the University of Rhode Island. It has several camp cabins and a central hall for dining and meetings. There is a large lake with canoes and rowboats and a modest farm with a few animals. See https://www.retreatcentral.com/retreat-center/environmental-education-center-w-alton-jones-campus-299/

I always enjoyed the September event as the weather in New England was beginning to show some tree color as I roved. That year's activity would be limited to an hour or two with a very compromised station. The TS700 runs 10 watts output and the 8 element beam was strapped to the railing of the rear staircase of our cabin, about 12 feet off the ground and pointed south. I sat on the steps; pencil and paper and mobile mike in hand and I turned on the rig. The band was crackling with action, and there were calls from the 4th and 8th districts that I had never heard before, all with S9 signals. To my surprise, I got a response from almost everyone I heard.

Who could believe that we had such fantastic conditions that a little peanut whistle could work out several hundred miles? Unfortunately, most of the retreat weekend is full of scheduled activities, so my window of opportunity was the first 2 hours of the contest. With a sheet full of "exotic" calls, I had to return the rig and beam and battery back to the luggage compartment. Russ was certainly right regarding the fun we had on 2m that contest!

There have been other June contest weekends with amazing Es, stations amassing over 200 6m grid multipliers, other occasional tropo openings down the east coast, but the September 1984 ARRL VHF 2M activity will forever linger in my mind.   **73, Rick K1DS**

Hi Lenny...
I'm up and running on 6 band from here in FN-10vi. Look for me in June 6 through 1296. Here are pictures of my 903 and 1296 station with antennas de George WB3IGR
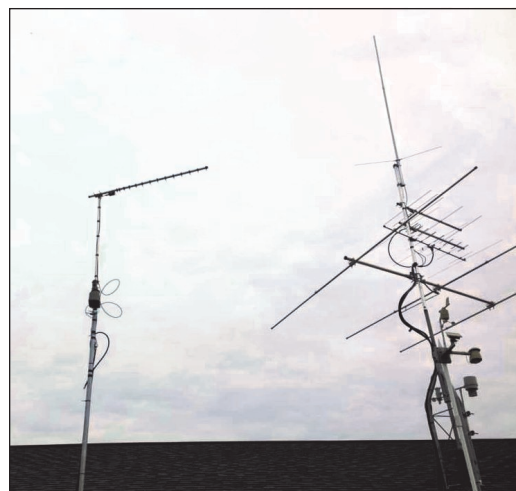
ARRL VHF Logs Collection

By Pete K0BAK; March 30, 2020

Summary
Some contest logs can now be downloaded from the ARRL. I downloaded all the VHF contest logs into a zip file, then created a big data structure from them that can be read into programs for analysis. You can get them from my site.

File Availability
Files mentioned in this article are available for download from the following page:
http://k0bak.com/VHF/ARRLlogs/downloads/

ARRL Public Logs
The ARRL publishes logs submitted for some of its contests for recent years. While I don't know why there's a limited selection, having public logs encourages fair play and transparency. They could also be used as a valuable resource to improve one's own contest performance.

The contests available include the big three VHF contests (Jan, June, Sept) and the UHF contest ("222 MHz and Up Distance Contest"). Only logs for 2018 and 2019 are currently available; presumably logs will continue to be published for future years. I don't know if the ARRL intends to publish logs from other VHF contests such as EME and 10G. But even 8 contest runs could constitute a rich source of information for VHFers, including non-contesters.

The logs are available by using interactive web forms available here:
http://contests.arrl.org/publiclogs.php

Log Selection and Formatting
If you go to that form, (see above) you can select the contest name you want (and press "go"), then click on the short list of years available. You're then presented with a web page full of callsigns, each of which is a link to that station's log. If you just click, your browser will display the log. The log file is just text without any web formatting, so if you right-click you can download the log to your computer in the text-file format you'd expect.

The end of the header section of each log helpfully includes a "HQ-CATEGORY:" line that summarizes the exact contest category for the log. Presumably this was entered on the ARRL's web form to upload contest logs, or what the ARRL interpreted from other header lines. But the point is that this line saves us from having to interpret several other header tags to determine an exact contest category. An example of an HQ-CATEGORY is "Single Operator, High Power".

The logs are stripped of "SOAPBOX:" lines. It appears the QSO: lines appear in their original order, as opposed to having been sorted by time; this is **important to keep in mind when analyzing logs in combination**.

Downloaded Multiple Logs
While it's fun and possibly enlightening to download and examine individual logs of interest, deep analysis requires having many logs files available. The URL of each log file is pseudo-random, so there's no simple way to automatically download all the logs for a particular contest.

I wrote a program that scraped the ARRL download pages to find the logs' URLs, and used those URLs to methodically download all the logs in each of the 8 available VHF contest runs. Let me emphasize here that I downloaded gently, using just one thread and a 2-second delay between requests, so as not to unduly burden the ARRL's server. (I did wonder just how fast I could have gotten them all by making parallel requests, but kept that hacker part of me caged.)

The compressed directory tree is in "ARRL VHF logs 2018 2019.zip" in the URL mentioned at the start of this article. The 5,772 log files are in a structure starting with a "root" directory, then each year (2018, 2019), then the four contests within each year directory. The log files themselves are in each contest-name directory. Uncompressed, the directory tree occupies about 26MB.

Structured Log Data for Analysis

Pulling all the VHF log files from the ARRL was the most important first step for contest log analysis, and it only takes modest programming skills to read the files into a program for examination. However, I wanted to make it even easier for users, so I created a hierarchical structure for all the log data and wrote that to a JSON file. JSON is universally supported in popular modern programming languages, and its simple format is perfect for generic structures.

JSON is defined in RFC 7159 if you're curious, but there's no need to jump in that deep just to read it into a supported programming language. Two structures can be represented, an "array" (aka list), and an "object" (aka dictionary aka map). The node items I use are strings and numbers. Arrays use '[]' for grouping, and objects use '{}' for grouping. That's all there is; simple, right?

The JSON data file is in "VHFlogs hier 2020-03-30.zip". It's ~6MB compressed, and ~106MB uncompressed. Note that the file is dated; I may make improvements or add logs later.

Reading the entire structure from that JSON file into Python structures takes just a few lines of code. Python is well suited for interactive analysis of this log data because of its built-in support for lists and "dictionaries" (aka maps or associative arrays). However, the best language for you to use is the one you're most comfortable with, which is why I wanted to deliver the data in JSON.

Example Program

I wrote the example Python program "read json hier.py" to read the JSON file and report some calculations. It is also at the URL mentioned at the start of this article. It can be used as the basis for more extensive analysis. The program requires the name of the JSON file as its only argument. When run with the JSON file on my site, the following is printed to the console:

```
8 contests were read from JSON:
contest ARRL-222 in 2018 had 147 logs submitted:
   5047 qso records, from 2018-08-04 1800 to 2018-08-05 1759
contest ARRL-VHF-JAN in 2018 had 728 logs submitted:
   59439 qso records, from 2018-01-20 1900 to 2018-01-22 0359

             ……………...etc. etc……………

contest ARRL-VHF-SEP in 2019 had 691 logs submitted:
   55897 qso records, from 2019-09-14 1800 to 2019-09-16 0300
summary: 508510 QSO records found in 5772 submitted logs
```

Structure

The structure of the JSON file should be fairly obvious by examination, except for the time field in QSOs. JSON is just text, so you can "read" it yourself if you have patience. Hint: my fancy programmers' text editor did not handle that large file, but humble old Notepad on Win10 worked well to view it.

The root object is 'root', having two objects 'strings' and 'contests'.

The root.contests object is the meat of the structure, and can be used without reference to root.strings:

    'contests': an object with 3 fields:

        'namesByYear': object with year fields, each an array of available contest names

'yearsByName': object with contest name fields, each an array of available years

'**contestsByYearAndName**': object with fields for each conducted contest. The contest key is its year, then space, then the contest-name (from Cabrillo standard).

contest: the value of a field of 'contestsByYearAndName', which is an object with 6 fields:

'year': year the contest was conducted, as a string

'name': the Cabrillo name of the contest, such as "ARRL-VHF-JAN"

'categories': a list of all categories (HQ-CATEGORY:) found in logs

'clubs': a list of all club names (CLUB:) found in logs; many junk names found

'callsigns': a list of all logs' callsigns found in the CALLSIGN: field

'logs': an object with a field for each callsign:

log: the value of a field of 'logs', which is an object with 6 fields:

'station': this log's CALLSIGN:, same as the field key in the logs object

'category': the contest category found in HQ-CATEGORY:

'club': the CLUB: field, could be None

'**operators**': an array of operators' callsigns from OPERATORS: tags. If an operator was the same as the 'station' field, it is **not** included.

'header': an object with a field for each Cabrillo tag found in the log header. The value of each field is the single string value of the tag. Note that the most important tags are brought out to the 'log' fields described earlier, so it may not be necessary to refer to 'header' fields for analysis.

'qsos': an array of qso records in the order found in the log (not sorted)

Each qso in 'qsos' is an array containing 6 items:

0: Band as per Cabrillo standard

1: Mode as per Cabrillo standard

2: Date-time as an integer. The integer is the number of minutes since the Unix epoch. You can multiply this by 60 then use your language's datetime library to convert to a native datetime structure. You can also just use the integer as-is for comparisons and sorting.

3: Sent callsign, which should be the same as log.station

4: Sent Maidenhead grid locator, 4 or 6 characters (4 for VHF logs, 6 for UHF logs)

5: Received callsign

6 :Received Maidenhead grid locator

'strings' is an object containing named arrays of strings, and is loaded first as a possible space reduction or iteration aid. Each list contains all the strings encountered in logs in their respective Cabrillo fields: 'callsigns', 'headertagnames', 'headertagvalues', 'grids', 'categories', 'clubs'; and all possible Cabrillo 'modes',

'bands'. The 'callsigns' were gathered from all sources including OPERATORS: and the received-callsign field of QSOs. There is a significant number of bad values in logs, but I didn't attempt to sort through that, I just gathered them all.

Deferred Work

Flattened Database-Like JSON

Some types of analysis, especially across contests, might be easier if log data were flattened into multiple database-like tables rather than a hierarchy. Also, some folks might be more comfortable writing SQL queries than writing procedural programs. While I didn't generate a database itself, I did create a collection of table-like objects which ought to be easy to load into an actual database if someone wanted to. It can also be loaded into any JSON-supported procedural language too.

I finished this representation in the sense Python doesn't throw an error writing or reading it. But it is mostly untested because I wanted to write this document before the end of March. This flattened representation is available as "VHFlogs flat 2020-03-30.zip" Remember, at this point I have no confidence it's correct but you're welcome to play with it.

Analysis Support Functions

I would like to add Python code to enable some additional log analysis capabilities:

- Functions to measure distances between grids, and gathering the home locations of stations from QRZ.com. This would help to answer questions like: "Which stations have been active on band x that might be close enough for me to make a contact?"

- Some notion for canonicalizing callsigns: There are many different callsign suffixes in **received-callsign** QSO fields. The obvious thing would be to just remove all suffixes, but then there's a subtle problem with rovers who also operate at a fixed station.

- Find callsigns that are found in submitted logs, but who did not themselves submit a log. Maybe they are candidates for VHF club membership or to at least encourage them toward more VHF participation in general.

- Generating a reverse log: an artificial log of one's callsign in the **received** field of everyone else's log. With this, I might be able to track down the reason for a NIL. You could also see who else a station contacted, even if the station did not submit a log.

From the Editor

Just a quick note of thanks to those who contributed articles this month. With a week (or so) to go before publication, there was scant material (not even pictures from the March meeting which was canceled due to the ongoing pandemic). To all those who submitted articles since my request for material, a big "THANK YOU"! And special thanks go to K3IUV who was able to contribute several pieces, including his ongoing "Wayback" column, despite being under the weather for the last month or more!

I even have one article left (from K2TXB) as a seed for next months Cheese Bits (fear not Russ, you are not forgotten ;-)

SO THANK YOU VERY MUCH! Keep those articles coming!

—Lenny W2BVH

Progress On 24 GHz at K1RZ

Here is a report I sent my close 24 GHz partners (Bill W2RMA, John N9ZL) as I summarized the 24 GHz testing that Steve K3WHC and I did last Friday March 13th with our new Kuhne 24 GHz Transverters and very small horn antennas. I am hopeful this is of some value to the Packrats.

The story: Yesterday we couldn't make the 32 km path planned with the basic 11 dbi horn antennas so the most important take away today is we must now move on to the "real antennas" for the next trials.

After not making it at 32 KM we started to drive "towards each other". In and out of valleys and creeks, we worked a few times on 1900 MHz and then, found two random spots. I found FM19RU56DV, which happened to be co-located with the W3ZGD Red Lion PA radio shack. A former one room school house re-purposed some years ago as a radio shack / club house.   The driveway and top of the Jeep got me up to 244.75 meters ASL.   At the same time Steve was trying to drive to this same Radio Club spot, but when I found it (always looking for horizontal antenna's) he stopped at the close by position FM19RU98KV and we made the QSO at sigs S5 both ways at a distance of 3.2 KM.   The path profile shown explains the high attenuation – more than meteorology was the cause of the problem. Up to 20 meter high dirt 0.5 km's long with some trees mixed in for good measure was enough to bring the signals down..

I like Steve's Rover set-up.   He looks like an real experienced Rover. Tri-pod. Sun shade. Rig with fully functional PTT circuit.   My set-up still is more like a lab-bench, but sitting 6 ft above ground. I am also 6 ft tall , so I could barely see the digits on the FT-100D IF rig, and had to shade my eyes and the radio to do it, while standing on tip-toes.   Next time a two-step step-ladder will come along too. Also, when using this "lab bench" I will park the Jeep with the back end into the wind.   At one point the strong winds at the radio club slammed the door on my butt.   No damage though. It could have been another piece of anatomy that took the hit and it wouldn't have been ok (an arm, a leg, neck, etc.).   LoL.   Also I will bring a CW key, plus headphones. This is both for weak signal work and to prevent the wind noise on these ridges from covering over the band noise and weak signal, if any. I am just happy that I know Rover's who know all this stuff.   I will continue to make improvements.

By the way this radio club site I found is the same spot that Steve used to work Tony K8ZR at the FM08us Hogback Overlook on Virginia's Skyline Drive during our April 2019 Super-Conference 10 GHz Activity Day.   Steve set-up where I set-up and easily worked Tony on 10 GHz chatting on SSB for several minutes!!

The afternoon ended after Steve and I drove into downtown Red Lion PA – and had Italian Subs for mid-afternoon lunch.   OK – now its back to antenna planning for the next excursion / experiments….

50 ft by 0.5 KM of dirt and trees
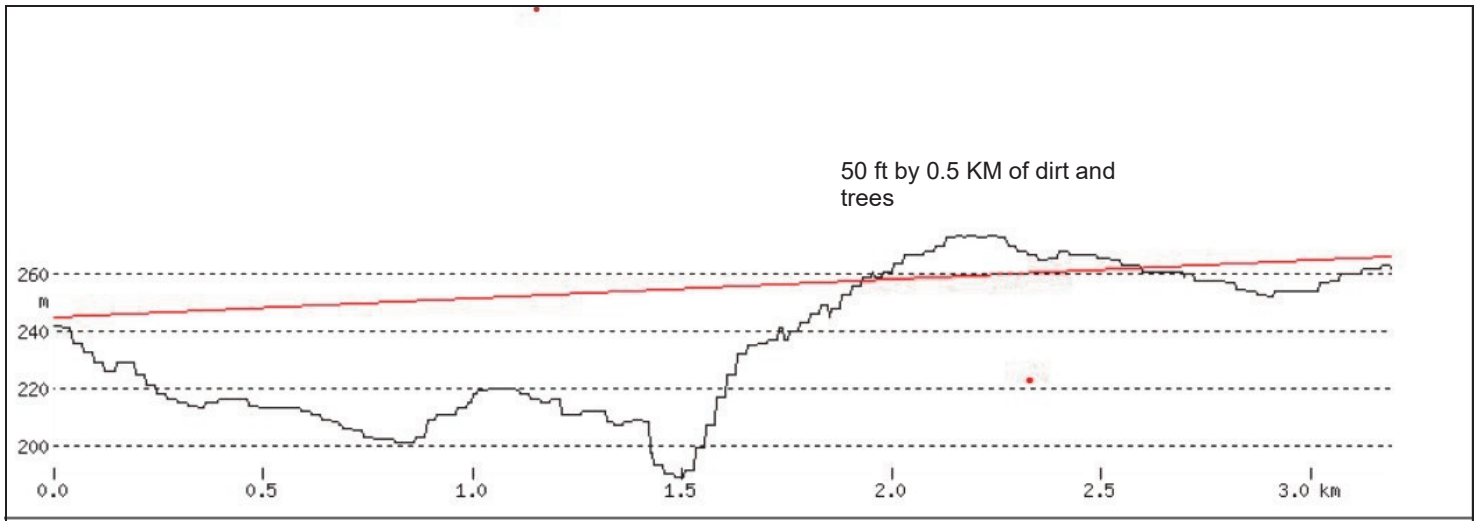
K1RZ-K3WHC Distance between FM19RU56DV and FM19RU98KV Using Vincenty formula: 3.2 km Heading: 73.1 degrees Reverse Heading: 253.1 degrees

Slack: Not just for contesting

Slack is a great app/program that many Packrats are missing out on. It is not just for contesting. It is used everyday by a handful of Packrats. Fellow 'Rats are on there during the nets so that those outside of the central calling area or those who's antennas freeze up a lot can let others know that they are trying to check in, but due to circumstances beyond their control they can't aim their antennas.

Then there are a bunch of guys and gals who get on everyday talking about e-skip coming in from whatever direction, FT-8 or meteor shower contacts.

I like it because when I'm at work (before working from home) I could see the chat back and forth and know what I was missing out on. Even though I am working from home I still can't stop working.

There are also conversations discussing issues or making suggestions for system betterment.
The beauty of Slack is that you can use it from a desk/lap top or from your tablet or a smartphone so it is with you where ever you go. It can also be silenced or muted when you put it in the "Do Not Disturb" mode. And unlike DMR radios, pictures can easily be posted of your shack, antenna system or anything else.

So if you are already a member of Slack try firing it up on your computer, Android or iphone device and say hello. Currently we are working on adding more Packrats to the 63 member list.

de,
Michelle/KB3MTW

Joe K1JT Operates at 4U1UN

A short video of the first dozen FT8 QSOs made from 4U1UN last Friday has been posted here:

https://dx-world.net/news-4u1un/

Enjoy!

   -- 73, Joe, K1JT

3/22/20
Hello from Reno where we sit sequestered mostly inside keeping well away from the Corona Virus. Neither of us have contracted the virus but given we were at ground zero the day before it went public we truly lucked out. I have been saying we dodged a freight train. We were walking around Singapore one day and flew home the next to find no more were allowed out the very next day. Reno is pretty much locked down with everyone sheltering in place so bad times for stores and restaurants but we will get through this. I hope all of you are doing well. There has been a fair amount of panic buying going on all over town. But why someone would go to Costco and purchase as many roles of toilet paper as thy can fit in the cart baffles me. It is not an intestinal issue. But what do I know......

I hope all of the 'Rats are safe and sound.

73 Randy NR6CA

Our friend Gedas W8BYA, published the link below on the microwave reflector. It has an evaluation (actual measurements) of the characteristics of various microwave connectors and adapters at the high end of the microwave bands.

http://millimeterwave.free.fr/
Measurements_SMA_ON4CDU.pdf

73, Bob
W2SJ

Experimental Spectrum Analyzer

Some experiments are going on in Italy with the Analog Devices ADALM-PLUTO SDR development platform with a view to making it into a 70MHz to 6GHz spectrum analyzer. At this point its very much a work in progress. To see how things are going look at http://www.albfer.com/en/author/wp_10278758/

Mobile Rig Installation: One Fuse Or Two?

Pros and cons of using a fuse in the ground leg of a mobile rig (in addition to the hot leg) are discussed at https://www.amateurradio.com/mobile-dc-power-one-fuse-or-two/

Local Beacon Update

Here is a beacon update for the Packrats in the local Del Valley area.

Last frequency observations in Dec 2019. Frequencies may be slightly changed or a fraction of a Hz difference.

Check Packrat web page (ON AIR) here for 6 digit grid square, and additional information. (Scroll Down) http://www.packratvhf.com/index.php/on-air

6M Beacon on PECO Bldg, K3CX, 50.079.9

2M Beacon on PECO Bldg, K3CX, 144.272.98

2M Beacon in Mountaintop PA, W3CCX, 144.300

222 Beacon on PECO Bldg, K3CX, 222.052.4

432 Beacon on PECO Bldg, K3CX, 432.324.9

903 Beacon on PECO Bldg, K3CX, 903.075

903 Beacon in Mountaintop PA, W3CCX, 903.300

1296 Beacon, W3CCX ready to be deployed at Pottstown, work in progress.

2304 Beacon, at Pottstown PA, W3CCX 2304.300

3456 Beacon, no plans, Can discuss future effort for this beacon at BOD if necessary. Club owns hardware.

5760 Beacon at Mountaintop PA, W3CCX, 5760.3

10368 Beacon on PECO Bldg, W3CCX, 10368.017

Submitted by Gary WA2OMY

[Note: Gary and Bruce will have some interesting details on the Beacon hardware and software development in upcoming issues of Cheese Bits —W2BVH]

As you are no doubt aware, the 2020 Eastern VHF/UHF Conference has been canceled, so there will be no Proceedings published.

All the papers submitted so far are now available online at:

http://newsvhf.com/conference/2020papers.html

More papers may be coming - there is no hard deadline
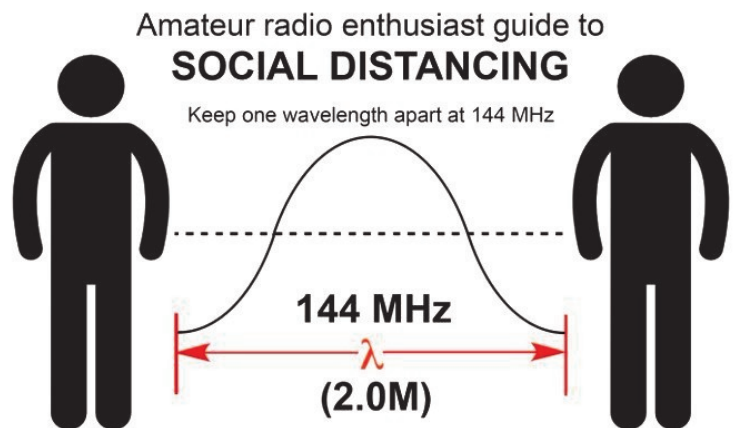
73
Paul W1GHZ, Mark K1MAP

Enza

Once I had a little bird,
And it's name was Enza
I opened the door,
And InFluEnza.
But then Enza left me all alone, and I began to moan.
So she sent me a friend named Mona,
Who I started to call Corona.
Now I can't get her out of my homa,
So I told her to leave me alona!
© 2020, BMS (via K3IUV)

Amateur radio enthusiast guide to
SOCIAL DISTANCING
Keep one wavelength apart at 144 MHz

144 MHz
λ
(2.0M)

From Justin N2TOH

LDE Revisited(?)

By Larson E. Rapp Jr., KIOU

Larson E. Rapp has contributed articles to QST over a long span of time. The earliest article was in the April 1941 issue and the most recent (other than a more recent letter to the editor) was in the April 1962 issue. As keeper of documents for the club, K3IUV, Bert, was fortunate to have uncovered among the clubs written material a never published article by this well known, but controversial author. Mr. Rapp has been the object of encomium and derision and all opinions in between. Thanks to Bert for this rare document. — W2BVH

You may recall the investigation several years ago, into the Long-Delayed Echo (LDE) phenomenon. Data was being gathered, and support requested from Amateur observers to try to discover the source of these unusual signals.

The first notice and reports of the signals in QST began in the late 1930's, shortly before WWII. Hams and commercial interests reported numerous instances of weak signal detection well after the strength should be expected to go to zero. Some postulated that it was caused by early military experiments into over-the-horizon Radar, but nothing was ever proven.

When the Ham fraternity's use of RF communication was banned during the war, interest lagged and was soon forgotten. The excitement caused by resumption of communications after WWII left the subject untouched for many years. Then, about 10 years ago, notice was made of a few anecdotal reports of similar signals being once again observed. The ARRL formed a committee to try to determine the source. Hams were encouraged to send in reports of such LDE signals as they might have detected. Key information sought included signal strength and source direction (beam heading). While a number of reports were analyzed, again no definitive answer was found. Recently, I have formulated new theory. Could these signals have become trapped in rock fissures as they traveled through the ionosphere, and then subsequently released? I believe this is so. At my request, an ARRL committee was asked to investigate, based on my theory, which postulates that the recent upsurge in intentional rock fracture (Fracking) for trapped oil recovery might have initiated the new flurry of observed signals. Pennsylvania is the epicenter of such Fracking activity. Accordingly, Amateurs in this area are again requested to keep alert for such signals, and resume reporting them to the committee. Data requested includes source direction, signal strength, duration, and time of observation (most important to correlate with peak Fracking activity). Forms are available, but informal email reports are also welcome. Please send your reports directly to the ARRL, attention "LDE committee." More information is available from the author.

The Wayback Machine
In CHEESE BITS, 50 Years Ago

Nibbles from April 1970. Vol. XIII Nr. 4
de Bert, K3IUV
(*author's comments in italics*)

"**Our Prez Sez"**. Prez Ernie, W3KKN, brief and to the point, "If you have a problem, ask for help. The gang in this club have the experience and background. If you've solved a tough one (or a small one), let us know. Mutual help is one of the reasons for having a club."

ARRL Bulletin NR 259, 2/5/1970. Western Union is offering surplus facsimile equipment for distribution to amateurs, through the ARRL. Conditions of distribution will be the same as those currently in effect for surplus teletype gear, and coordinated by F. White, W3PYW for the ARRL.

ARRL Bulletin NR 262, 2/26/1970. FCC issued a notice of intent to raise application and license fees so that its entire budget will be covered by these revenues. Amateur license fees would go to nine dollars, and a TV station application could cost $50,000. Stay tuned**.**

ARRL Bulletin NR 263, 3/5/1970. FCC has issued a notice of proposed rulemaking governing amateur repeaters (*and you thought they were new*?) above 50 MHz. Key features cover logging of day and time period, technical conditions, automatic ID intervals, coded access, 600 watt input, no cross-band, and other issues. Frequency sub-bands are included for 50 MHz and up.

Membership. New members: Student,

WA3NFV, Dan Mitten (*the red-garter kid, —inside joke*). Regular, W3ELX, Mario Deluca. Applied for membership: K3ZSG, William Murphy (*familiar? Now W0RSJ!*). Reinstated, W3FQD, Dick Hunsinger

Technical Topics. Member W2AXU, Jack Power, followed up on his previous 50 MHz amplifier design, this time for a dual band (50 and 144 MHZ) class AB amplifier using a 4CX250B tetrode as the output device. Very nicely designed, he included full construction details, parts list, schematic, and tune-up details. Needed about 1-watt drive. Copious notes were included, to aid in the construction. Alignment and tuning instructions included use of a grid dip meter. (*A nice reference, even today*).

220 Activity. K3GAS, Doc, reported lots of activity by members on the club intercom frequency (221.4). He listed 35 members calls that are frequently heard on the frequency, and noted "imagine easily working these stations in January, and adding them to your score (*we still do, but now it's 223.5*)." He also listed a number of non-club stations that regularly sign into the Monday evening 221.4 net, with the same admonition. (*In other words, get on!*)

New Products of Interest to Hams. An aperiodic article, by W3NSI, Lynn. "Latching Relay," $4.75 each. SPDT contacts, rated at 5-amps. 115 VAC oil. Available from H and R (Herbach and Rademan) electronics.

June VHF QSO Party Plans. The chairmen (W3CXU and W3SAO) provided a peek into the detailed plans

for the upcoming contest, stating "We have RED HOT plans afoot to go all out this year, to win and have a ball doing it. Lots of details were described, and the band captains identified included K3IUV (ye author) on 1296, and K3UJD, Mario on 2300. All members were invited to participate.

Swap Shoppe. By W3ZRR. *(Always nostalgia. Now we use the club reflector.*) Wanted, by K3WEU. A 2-meter beam, a 220 beam, and an R-48 Receiver (*the surplus boat anchor we converted for use on 221.4*). And, "Wanted," by K3BPK, Dave Gindin, an all-band converter for use with a Clegg Interceptor (*that sounds like a tall order*!).

Miscellany. *Postage for this copy was still a single 6-cent Roosevelt stamp. (7 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 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.*

Events

For inclusion, please direct event notices to the editor.

2M Spring Sprint –Contest - Monday April 6, 2020. See https://www.sites.google.com/site/springvhfupsprints/home/2020-information for details.

222 Spring Sprint –Contest - Tuesday April 14, 2020. See https://www.sites.google.com/site/springvhfupsprints/home/2020-information for details.

432 Spring Sprint –Contest - Wednesday April 22, 2020. See https://www.sites.google.com/site/springvhfupsprints/home/2020-information for details.

Microwave Spring Sprint –Contest - Saturday May 2, 2020. See https://www.sites.google.com/site/springvhfupsprints/home/2020-information for details.

6M Spring Sprint –Contest - Wednesday Saturday May 9, 2020. See https://www.sites.google.com/site/springvhfupsprints/home/2020-information for details.

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

Murgas ARC Hamfest & Computerfest - Hamfest - July 5, 2020. Plains PA. http://hamfest.murgasarc.org

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

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

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

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

Packrat QST Authors

For those who haven't received the May QST, there are two Packrat authors in the Table of Contents:
- p.60 has "Canadian NPOTA Maritimes Rove" by Pete K0BAK
- p.71 has "2019 ARRL International EME Contest" by Rick K1DS .

Congratulations to both!