



CHEESE BITS

W3CCX
CLUB MEMORIAL CALL

ARRL
Affiliated
Club



Volume LVII

October 2016

Number 10

PREZ SEZ:

The last quarter of the year and we only have the main event to prepare for with plenty of time. My flight is booked to bring me back from FL the Thursday before the contest. The station is somewhat ready with all of the

RF working up through 24GHz. More on the January contest later.

We had a special time at the annual Microwave Lunch held at the John Wright Restaurant. This was followed by a 10 and 24GHz excursion to Sam Lewis State Park where K3WHC and W3HMS worked back to K3TUF and W3SZ on 10 and 24GHz with good signals over a more than 25 mile path over PA terrain. MWL (as it is known) has been going on since October 1996; it's a bi weekly get together largely moderated by W3HMS and has microwave enthusiasts attend from Chambersburg to Glen Mills. Anyone is welcome to attend every other Thursday regularly at the Hoss's in Elizabethtown, PA.

How did you do in the ARRL September VHF Contest? It was populated reasonably and I discovered how much fun it is working WSJT through the night. My plans will now be to work both 6 and 2 meters using meteors now that we can have one signal per band in the new rules. The thought only occurred to me late in the night when I could have been going twice the rate while using two bands. Eventually I had to get some sleep. Next year I plan to use my station in the multi operator category.

Sprints are always fun and September hosted two of

the favorites; 144MHz and 222MHz. Always good to try your station out at the far reaches of the bands. How many grids did you work? 432MHz Sprint happened early in October and it is nice to see the repaired WB2RVX station back on the air and also running the 432 net again.

The next meeting will be upon us before you know it and it's a technical one with presentations on power measurement and storage oscilloscopes. We have an increasing number of folks attending the dinner beforehand at Giuseppe's Pizza just across the parking lot from the meeting in the Ben Wilson Senior Center in Warminster PA. Please join us for dinner if you have the time.

Later this month there is a great way to fill out your DXCC quest. The last full weekend of every October and November is 48 hours of DX mania. Get on the five low HF bands and see what you can work. This month is SSB but November is CW and a great time to sharpen your CW skills for the upcoming ARRL January VHF Contest. Please don't be afraid of CW. Make sure your station is outfitted with a key or keyer. And for those of you who use multiple IF rigs, that goes for all radios. When the signals are weak, CW will make it through and you need to be prepared. Even if you don't have an HF antenna, use your 6m antenna with the center conductor only. Tune around the bands, particularly 80 (in the evening), 40 and 20 meters.

I want to keep mentioning the Special Event Meeting in December where we will celebrate our 60th year as the Mt Airy VHF Radio Club. It will be a casual event and we are hoping that many members and

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PACKRAT BEACONS - W3CCX/B

FM29jw Philadelphia, PA
50.080 ~~144.204~~ 222.062 432.290 903.072 1296.264 ~~2304.043~~
3456.200 5760.495 10,368.034 MHz (as of 1/16)

MONDAY / TUESDAY NIGHT NETS

VHF/UHF Monday:

<u>TIME</u>	<u>FREQUENCY</u>	<u>NET CONTROL</u>
7:30 PM	50.145 MHz	N3RG FM29ki Ray
8:00 PM	144.150 MHz	K3GNC FN20ja Jerome
8:30 PM	222.125 MHz	KB1JEY FN20je Michael
8:30 PM	224.58R MHz	W3GXB FN20jm Bob
9:00 PM	432.110 MHz	WB2RVX FM29mt Mike

Microwave Tuesday:

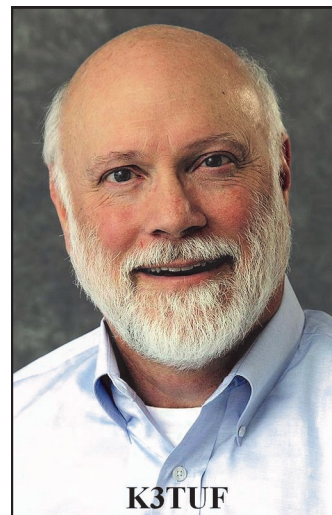
7:30 Coordinate QSO's on 144.260 for all Microwave bands you'd like to work. Also setup Q's at w4dex.com/uhfqso or **Packrat Chat**

Page W3SZ.COM

Visit the Mt Airy VHF Radio Club at: www.packratvhf.com or www.w3ccx.com

friends who don't normally attend will make their presence known that night.

In only 105 days we will be participating in the ARRL January VHF Contest and this year the organizers are looking for another 70 member log contribution. We always put out a full force effort and now is a good time, while you are not rushed, to put the weekend on your calendar and make sure everything is ready. January 21 and 22, 2017.



At this time we are mindful that many of our southern radio enthusiasts are confronted with a storm named Matthew. I know there are many fatalities that have come as a result of this hurricane most in the island of Haiti where I just visited to complete a 300 foot tower. That tower is still standing but it's complement, another AM station with a 250 foot tower **has been destroyed** along with many homes and villages. If you would like to contribute directly to the Haitian people, let me know and I will point you to some hams that are putting donations directly into the hands of Haitians.

Until next time, lets talk on lots of bands,

Phil, K3TUF

Some September Meeting Pix



Tnx K3JJZ for pictures

EME FIRST WEEKEND-2304 MHZ DRIVEWAY DXPEDITION AT KIDS

I planned long in advance to be ready for the first weekend of the ARRL EME contest which has activity on bands 2.3GHz and up. I had all the equipment as I made 2 QSOs on the band via the moon in last year's contest. My aim was to enhance and improve the station with some SDR usage and better moon tracking. I was told by others that seeing the trace of a station was a great advantage to tuning them in, and **they are right!** I also tried to do some auto-tracking of the moon's azimuth, but it seemed easier to try and do more meticulous manual tracking this time. I also found a hotter WD5AGO preamp in my shack that I had ordered but not previously used. It was great with a .58dB nf and 35 dB gain.

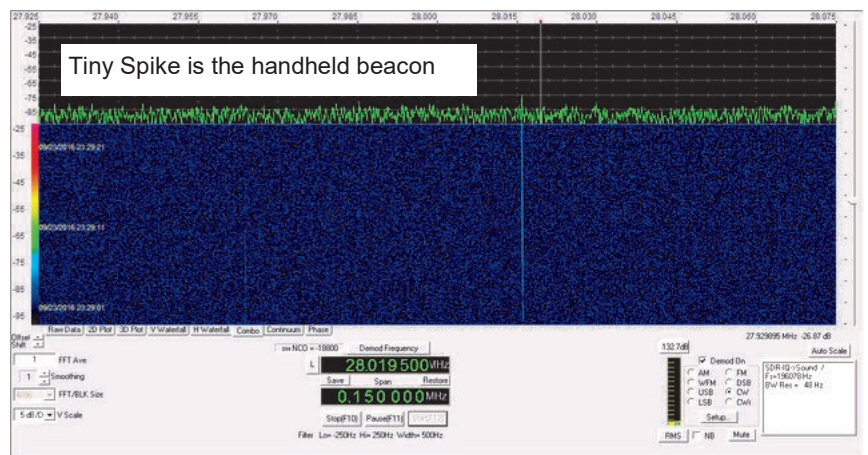
It took a large part of Thursday to get the trailer cleaned off, out of the garage and down the driveway and then assembling the dish. Since I hadn't done this since last November, I followed the set-up that I had left for myself, similar to what we do on the mountain. The appropriate bolts are attached to the parts that are labeled and need to be assembled. The feed was attached to the struts and measured at 41.5" from the dish, right in the calculated focus. It was a warm day, only to be surpassed by Friday, which was even warmer and more humid. This was the day I needed to assemble and connect all the power and RF to be ready for moon-rise at half-past midnight. Everything seemed to fall into place, except that I needed a receiver capable of listening to 160MHz in order to receive some of the European signals that would be on 2320MHz. I thought that I had one of the club loaner ICOMs, but the power cord was not with the rig. An urgent call to K3IUV located a spare and I drove over to get it. When I turned the rig on, to my chagrin it wasn't tuning past 147.999. Now to look for an alternative—I found that my Yaesu FT100D that I use in the rover would tune up there, so I removed it from the van and attempted to hook it up on the trailer. Yikes!, the power switch wouldn't turn it on. Checked the power cords and found a blown fuse. What? Why? I had just tried it in the van before removing it, so how could that happen? Well, as it turns out, two fuses later, it likes a battery source a lot better than the Astron PS.

I went through some angst when trying to measure sun noise with the system as I infrequently use my SDR-IQ. Luckily, Roger W3SZ always has a great solution for my needs and I measured a whopping 11.4dB of sun noise, great for my 10' dish. Knowing that I would not be able to "see" the moon for a few hours after moonrise due to tree

blockage, I set my alarm for 2:30AM, dressed and went outside only to find it would be another hour or two before the moon cleared the local trees. By 3:30 AM I sat and just made sure all the equipment was ready. I used a small beacon that I picked up on the Mario table a few years back—it



has output on several bands using a 9V battery. I think it was a W3KM item. I saw a trace on the SDR and was happy. I increased the drive of the transverter to get about 150W out of the Spectrian amplifier. I continued to track the moon as it finally cleared the trees and saw my first trace---OK1CA was in QSO with K2UYH. At 4:45AM I worked OK1CA with 559 signal reports. He was the first of several stations that I would work that all have 10m dishes or similar.



Over the next 3.5 hours, I worked a total of 9 stations on CW, including two club members, K2UYH and WA2FGK. Herb has the smallest station that I worked, a 12' dish and 200W. I added OZ4MM, LX1DB, HB9Q, VE6TA, G3LTF and ES5PC. For me that was a great run. For the second moon pass, I woke at a more friendly 5:30AM, tried to use the FunCube Dongle to receive both IF frequencies of 144MHz and 160MHz, but I had problems with the program, so I went back to my original setup using my 2m transverter feeding the signal from the 2304 transverter into my SDR-IQ. By about 7AM I logged a QSO with LZ1DX and then added OK1KIR, W5LUA and W6YX. A total of 13 QSOs with 11 of them new initials.

Doing EME has opened a new page for my hamming and I have learned so much with each outing. I know that there are a dozen club members who have experienced the thrill of EME, and hope that more will join in the fun, especially with the aid of the newest digital communications programs by K1JT and others. I look forward to the next leg of the contest in October. **73, Rick, K1DS**

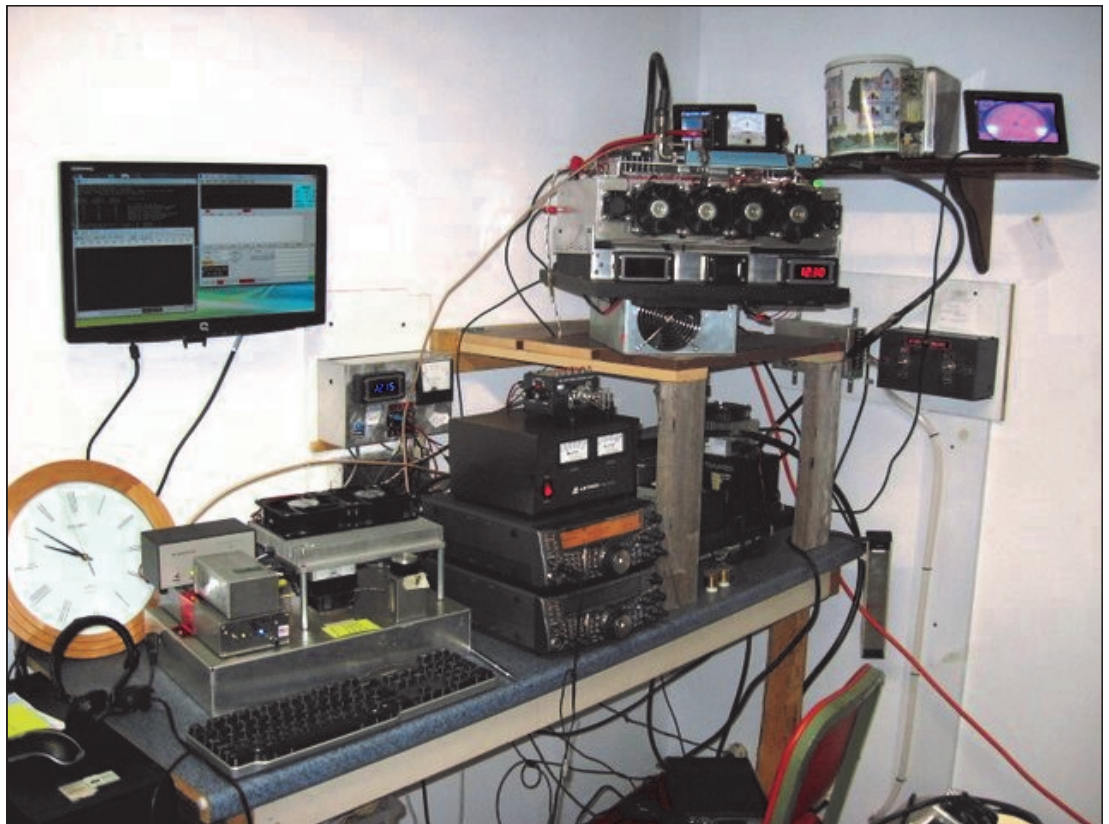


EME CONTEST: 2304 EME AT WA2FGK (K2LNS)

Saturday morning I started my 2304 EME adventure at 3 am and stayed until 8am I have an old VE4MA feed on the dish, and at the start saw a very strange phenomenon. For the first 30 minutes I was hearing nothing, absolutely nothing. I knew my accuracy was very close to being on the moon. About 30 minutes went by, while I was making some obvious tests, and all of a sudden I was hearing signals all over the band. Like magic they appeared! I wanted to make some videos of some of the stronger signals but the twenty cooling fans made it impossible. Several signals come to mind strength wise. But I would say K5GW was the loudest I heard.

A week before the contest I made two nice contacts with PY2BS and our Al Katz K2UYH. So I knew the system was working. In the contest, I worked the following: OK1CA - ON5RR - K5GW - K2UYH - G3LTF ES5PC - UA3PTW - VE6TA - HB9Q - WA6PY and our good friend K1DS All contacts were on CW.

I will try JT65C in the future, but I wanted to make sure sequencing was working and didn't want to lose a preamp during the contest



Our system is a TS2000 into a DEM transverter 10 MHz lock - drives two small bricks and the final amp is an Erickson. We are running 300 watts in the shack, and tested at the feed is 200 watts. The preamp is made by WB5AGO with a 0.4 db nf. We use a separate piece of hardline for receive.

Next week I will change the feed and switch over to 1296 for the second leg of the ARRL EME contest

73's from Bear Creek
Herb K2LNS

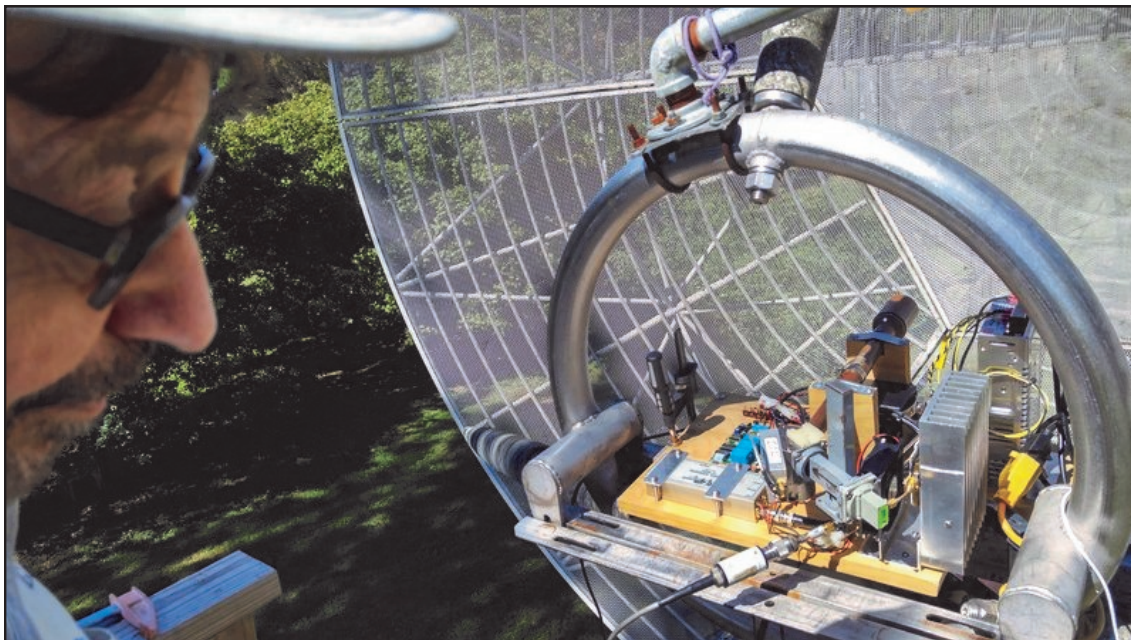
Microwave EME at K2UYH

Hi Lenny,

George (NE2U), Russ (K2TXB) and Jack (K2BMI - from Syracuse) and I operated the ARRL Microwave EME Contest. I am sure you will get a report from Rick. He did well on 13 cm for the first time. [Make that second time -- Ed.] We had some problems, but had fun overall. We worked on 13 cm 28, on 9 cm 3, on 6 cm 4 and on 3 cm 2. The first day we operated on 13 cm where we spent too much time. We should have switched to the higher bands and made an error stay on 13 cm for the JAVK window as no one was on. Our real problem was the second day. We planned to start on 3 cm but discovered that when we elevated the dish that we lost power. We made only 2 contacts as our power kept dropping out, and wasted several hours trying to fix the problem. When we finally got on 9 and 6 cm, the EU window was near end and thus our QSOs were very limited. The new PAs on 13 and 9 cm gave excellent echoes almost as good as on 1296. We obviously have some work to do on 3 cm, although the new 30 W SSPA worked well and was not the source of our problem. I believe George took some photos. Perhaps he has some he could send you.

73, AI - K2UYH
(George's photos below)

"Kennedy Dish"
with newly
constructed
installation/work
platform



10 GHz
EME Feed

WB2ONA / KC2QBC 10 GHz Contest Rover in the Florida Panhandle

Lenny,

My son Steven, KC2QBC, and I went down to the Panhandle of Florida, for the second weekend of the 10 GHz contest. Had some fun. My son took a few pictures. See below.



Here is a picture from washed out Alligator Drive at Alligator Point.. The road was washed away by Hurricane Hermine. QTH locator : EL79TV.



Nice Sunset



We met with Steve and Sandra (of DEMI) before the contest. We went west and they went north!

W2SJ Fall Sprint Reports

Lenny, Activity seemed about normal for these 4 hour contests. **What a shame more operators do not get on and have some fun!** 73, Bob

2016 **144 MHz** Fall Sprint W2SJ FM29

Band	QSOs	X pt =	QSO pts.	X	Grids	=	Points
144	35	1	35		13		455

Claimed score = 455							

2016 **222 MHz** Fall Sprint W2SJ FM29

Band	QSOs	X pt =	QSO pts.	X	Grids	=	Points
222	24	1	24		12		288

Claimed score = 288							

K2WB 2M Fall Sprint "Report"

It is real quiet in **DM42cv**.. Armed with an HT and a 5/8 Wave Ribbon J-Pole Antenna. But still I try 146.52, 55, 58.. 73's

The Ankle-Biter Guide to EME

Part Four –Power, Operating Techniques and EME use for Contest

“If you have a small station, you can’t run with the big dogs but you can nip at their ankles.”

By Jerome Byrd – K3GNC

Power – “Better to have it and not need it, than to need it and not have it”. I think most of us vhf/uhf/microwave types realize the benefit of having as much power as possible/practical. In reality, however, there are limits to what power we can run because of economic, domestic, location and other reasons. EME is the ultimate weak signal environment, so the old adage holds true – you can’t work them if you can’t hear them.” For anyone you can decode or hear on EME, you should strive to have enough power so they can decode/hear you. Since I mentioned “hearing them to work them”, I will state that a preamp with noise figure under one at the antenna is necessary for anything other than dabbling. Where stations get their power varies greatly. Common choices are: build from scratch, modify commercial pallets, put together kits, used market (mainly for tubed amps) and commercial plug-n-play SSPA and tubed models. Whichever power amp you choose, know that WSJT is a 50% duty-cycle mode (one minute on-one minute off) and that completing a qso can sometimes take **an hour or more**, although the norm is probably more like 10 -20 minutes. You need to make sure your amp has ample cooling! If you have a tubed amp I recommended you don’t look at the chat page until your amp has warmed to operating condition. This is to avoid anguish and grief when you see that a station you need for a new “initial” and DXCC, (state, continent ..) has been cq’ing for a while and has stopped and went QRT while your amp was warming-up. I would say the minimum power you need to actively participate in eme is 300 watts for 2 & 432 with a 14 db gain or more antenna on 2 meters and a 17 db of gain or more antenna on 432, and 100 watts at the antenna for 1296 with a 6ft or larger dish or 150 w at the antenna with a 67 el yagi or two 9+ ft yagis.

Operating Techniques – Try and get the “Call3” database file from a currently active eme’er. That is the file that is used by WSJT to do “deep search”. WSJT collects information from what it believes are WSJT signals and accumulates them in “average”. It simultaneously scans it’s database (Call3) looking for what it believes is the call in “average”. Some purists don’t like this feature, but it is akin to looking at the Packrats sheet of active hams in certain grids when trying to discern the call of a weak station that is believed to be in said grid. Moral arguments notwithstanding I recommend you set the “decode” menu selection in WSJT to “aggressive deep search using average” If you can’t get a current Call3 file, you will be stuck with the relatively outdated file that comes with WSJT when you download it. In that case your

software then always looks up a station's call and grid you may want to work and if it is not in the database, "adds it" You will hear all sorts of different recommendations on what value to set "Sync". I believe '1' is standard and that is where I had mine set for most of the past year of regular activity. The "1" setting tells WSJT to be very discriminating in marking ("*") a signal as being WSJT. With a setting of "1" extraneous signals, birdies, etc are noted but not confused as WSJT signal. The bad news is extremely weak signals (signals are called "traces") will also be ignored if they are not at least -28 db and not put them into the "average" accumulator. Each step down from "1" (-1, -2, -3, -4, etc.) causes WSJT to consider more signals for its "average". The maximum is -10, and that is where my sync is now set based on the recommendation from one of the "giants" Gary - KB8RQ. Ever since I changed my sync to -10, I have worked more stations than ever before.

According to the Ping Jockey EME -1 page, you should not discuss a eme qso via chat, while in progress, which is pretty much like current contest rules. Contest participants pretty much follow that rule. In everyday operation, however, the rule is sometimes stretched like a rubber band.

FROM THE TRENCHES: You note that a station is calling CQ from a posting in Ping Jockey or listing in LIVECQ. You listen and decode the station, and respond. The station doesn't respond to your call and keeps on CQing. You copy the decoded line from your WSJT screen (ctrl "C") and paste it (ctrl "V") into the message box of Ping Jockey and send. Almost all active stations see the message, including the station you are calling. The station you are calling responds in chat with "tnx for the rpt". Station being called is now aware of your possible attempt and may look extra hard for weak traces. If still "no joy" the calling station may then post "I am calling you".

(Streeeeetttch) or worse "I am calling you do you see me?". Things start to deteriorate fast as the station being called responds with information like "I see you but no decode yet", etc. (snap). *It's all glass houses in eme so very few people start throwing rocks.*

How to get the most from LIVECQ.EU: There's a number of select stations who run MAP65 that are automatically tied into the LiveCQ site. When someone calls cq, if they are decoded by one of the reporting stations, that information is posted on LiveCQ stating their call, grid, frequency, signal strength and polarization at the reporting station. This helps people to avoid calling CQ on occupied frequencies and gives everyone a snapshot of the current cq'ing situation. I used it to test whether I am getting out and to experiment with polarization and az/el pointing. If I call cq and none of the reporting stations pick me up (especially if "super" stations are on-line), then I know I have a pointing or polarization problem or conditions may be too bad for me to succeed.

EME and Contest – The ARRL conducts an EME contest for 6 - 1296 over two weekends, one in October and one in November. (see ARRL site for info on microwave eme contests weekends). There are also two Italian sponsored eme contest weekends, one in the spring and one in the fall (A.R.I). Both the ARRL and ARI contests have digital categories of participation. Dubus (Germany) sponsors eme contests but they are usually cw/ssb only. Using eme in **VHF//UHF contests** in January, June and September is starting to become a resource that serious contesters need to consider. As a station who is partially to totally blocked on 160 degrees of the compass, there are a relatively small number of possible grids I can work. One of the appeals of eme for me

was the possibility of getting a decent grid count despite my location handicap. Most of the Packrats can make a eme qso or two with their tropo setups and WSJT at moonrise. It is not so easy at moonset because there are almost no big stations in Asia and Oceania, like there is in Europe at moonrise. The bad news for me and other small stations is the January 2017 VHF contest weekend is predicted to be very bad for eme with the moon furthest from the earth and possible degradation from milky way.

Summary - This concludes the series. I hope some useful information or insights have been gained. I am thinking about resurrecting my monthly "On the Bands" column from decades ago, where I will report on "first hand" Vhf/Uhf/Microwave activity in the east. There will be an EME segment in each report. I will always have something to report because my weekly operating schedule is as follows: 2 x 432 group nights, 1 x 1296 group night plus I run 1 x 2 meter net and check into 3 other 2 meter nets as well as the Packrats 6, 222 and 432 nets when I am QRV. I dx and rag chew in the am and evenings to the tune of about 100 qso's a week (not counting nets and group scheds, and EME).

CU on the bands! **K3GNC**

W3ICC/r September Contest Results

Operators: W3ICC W2PED

Band	QSOs	QSO pts.	Mults.
50	74	74	20
144	97	97	22
222	52	104	20
432	67	134	22
TOTAL	290	409	84 + 6 = 90

Claimed score = 36,810

Progress on Tower Restrictions

At 6:29 P.M. EDT 9/12/2016, H.R 1301 as amended was considered on suspension and passed by the U.S. House of Representatives. It now goes to the U.S. Senate for consideration.

Congratulations to all.

73 de Mike Lisenco, N2YBB
ARRL Hudson Division

Kit Building

Yesterday (9/24/16) the Warminster Amateur Radio Club had a 10 watt Dummy Load kit building session. The kit included LED lights, Zener diodes and several types of resistors plus a printed circuit board. It enabled us **less experienced operators along with Elmer's** to put this little component together along with coax. Now I know plenty of you are old hands at this, but this was my first time. One of the Elmer's was so impressed with my soldering skills that he showed it off. It was also good that I was there as the instructions were a bit old and the LEDs needed to be reversed. Good lesson in reverse soldering. Plus who else carries a safety pin on them? Had a great time learning HOW to assemble. Next time gotta bring the reading glasses. No longer have the eyes of a <40 year old!

73
Michelle London
KB3MTW

KA3FQS September Contest Report

I had fun in the September QSO party. There were reasonably few problems here except for my inability to get CW working on the higher bands. It seemed that the W2EA mountain top effort depleted the operators from FM29. I was unable to work that grid until Mike, N2DEQ, came on. Here is a summary of my log.

Band	QSOs	X	pt =	QSO pts.	X	Grids	=	Points
50	41	1	41	13		533		
144	49	1	49	18		882		
222	32	2	64	13		832		
432	30	2	60	10		600		
903	7	3	21	2		42		
1296	11	3	33	3		99		
2304	2	4	8	1		8		
3456	2	4	8	1		8		

TOTALS	174		284	61		17324		

Claimed score = 17324

Tom, KA3FQS

WB3IGR September Contest Results

Here is my score for the September contest, and for not being able to turn my antennas, they were pointed SE toward the Philly area, I think I did rather well in the September contest. Here is a breakdown....

100 watts on 50 MHZ.....15 QSO's and 7 grids
50 watts on 144 MHZ.....25 QSO's and 11 grids (managed to work K3ZO in FM-18, my old grid)
75 watts on 222 MHZ.....15 QSO's and 6 grids
50 watts on 432 MHZ.....13 QSO's and 5 grids

68 QSO's for 95 QSO points and 29 multipliers for a total claimed score of 2,755 points!

My station is now complete and I'm able to turn the 2M, 432 and 222 antennas with my Yaesu G-450A rotor and 6 meter fixed (square loop), so I'm looking to do better in January!

de George WB3IGR FN-10vi

W2EA September Contest Report

The South Jersey Mountain Toppers ARC consisting of several Pack Rats and South Jersey Radio Association members went to High Knob in grid FN21KH and operated station W2EA for the September Contest.

The group of 15 would like to thank all the Pack Rats and our friends who worked us in the contest.

We found conditions relatively flat with only a handful of Es contacts, but still managed to **break our previous all time record** of 214K with only 5 bands in 2001. Our score this year was 225K with over 800 contacts and 190 multipliers operating 50 MHz through 10 GHz! Many things made the difference this year including lots of pre-planning, effective scheduling of some key contacts before the contest, effective tracking of rovers, and most importantly a good balance of operators who helped set up, operate, coordinate, and execute our planning efforts.

The site is more remote than Camelback with the only visitors being Murphy our mascot (Ted's dog), Pete, K0BAK/R, and one six foot long Rattlesnake!

A great time was had by all and we trust those that worked us enjoyed putting FN21 into their logs.

The W2EA score combined with other Pack Rats members scores should also be an all time high for the Pack Rats in the September ARRL Club Competition Category.

73, Bill, K3EGE & Bob, W2SJ for the W2EA Team



**MORE PICTURES
FROM THE W2EA**



**SEPTEMBER
CONTEST OPS AT
HIGH KNOB**

September VHF - The Murphy Rove at K1DS/R

Too many commitments and too little time. Operating events always taking a back seat. But I managed to charge up the batteries, replacing one of the 12V marine cells that was dead (since I forgot to disconnect it after the June event). Got the antennas in place early Saturday AM before the heat. Set out at 1 PM, intending to get to FM29hx to start, when the engine of the van started having a periodic miss. I headed back toward home safely, not wanting to be stuck on the road. I pulled into one of my favorite spots behind the Training Center, on Potshop Road, up by the old Nike site. I kept the engine running, and periodically saw it balk. But it kept running. It'll be in the shop today to check it out—likely bad fuel, filter or spark plug. Antennas were raised, power applied, computer started, but alas, "RUN TIME ERROR 50003" prevented me from using any one of Dave's logging programs. (More about that later.) I pull out the pen and paper and start logging a nice run with WA3DRC through 3GHz. Working the locals, several Packrats, a few New Englanders and a few folks to the south. Another nice run with WA3NUF, but the trees prevent much above 1296. I find W3SZ on 6m and start the run through the bands with him and easily complete with super signals through 10GHz SSB at 59+. Unfortunately the humidity precluded a 24GHz QSO. Found Michelle and Neil and worked them in a clean sweep on their 6 bands. Had another run with K3TUF through 3GHz. Had runs with K1TEO, K1RZ and W2KV, KA3FQS. Only was able to work W2EA on 6,2

...K1DS/r cont'd
and 222.

The engine ran the whole time, with continuous charging of the marine cells. The batteries in the main stack were failing, so that the audio on 432MHz was quite distorted. I had to quit at 6PM and head home, disassemble the rover and make a 7:30 social engagement. On Sunday we needed to be in NYC, so I took a pair of FM walkies with me and 2 mag-mount antennas, hoping to work a few folks on 146.52 or 223.5FM. I called and heard nothing on 146.52 at any time. I managed one quick QSO on 223.5, and then discovered the coax broke off from the base of the mag-mount. I scored a bit above 6K points for the limited effort.

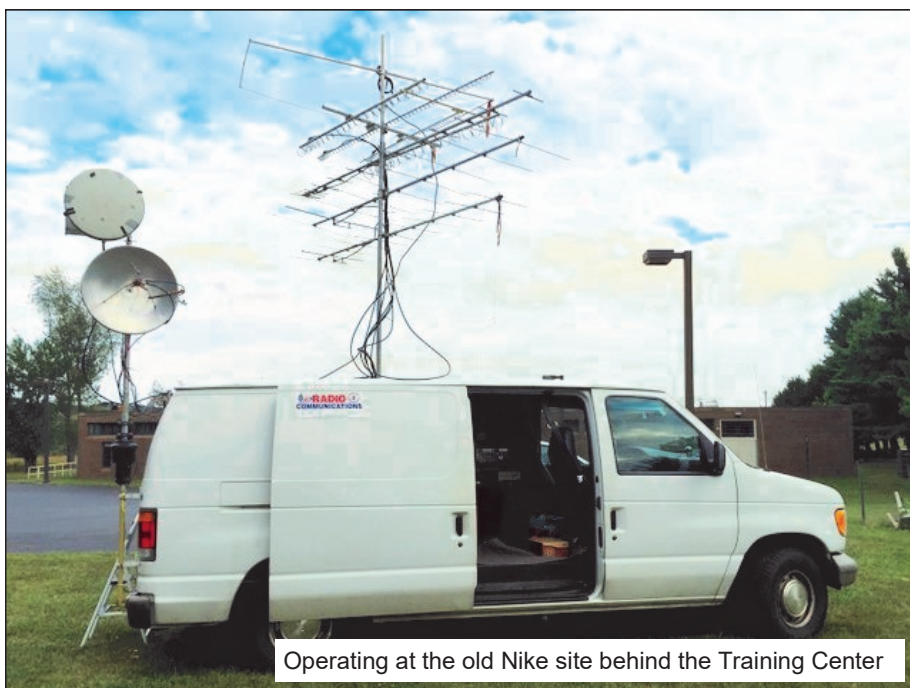
Band	QSOs	pt	QSO pts.	Grids	Points
50	6	1	6	3	18
144	28	1	28	7	196
222	13	2	26	5	130
432	15	2	30	4	120
903	8	3	24	4	96
1296	10	3	30	4	120
2304	5	4	20	3	60
3456	3	4	12	2	24
5760	1	4	4	1	4
10368	1	4	4	1	4

Since I have additional gear at the home QTH, I made a 5 band effort and gave out a few more contacts to other contesters. It was especially rewarding to work plenty of folks on 2m CW, especially since I have compromised antennas, using a wire on 6m and a small LP for the higher bands, all inside the attic. That effort yielded 800+ points with 39 QSOs and 15 grid mults. At least I could use my other laptop with the logging software running properly.

I converted the paper rover log onto a Cabrillo file using my desktop computer and sent it in to the league. I sent an email to Dave, W3KM, seeking some help to get his programs running again on laptop 2. He advised that sometimes when the Windows systems update, there can be some incompatibilities with his files, and my solution was to delete all of his programs from the laptop and reload the latest versions. Everything is working like a charm now.

My roving days are getting shorter and I have so many other things calling me in different directions. I hope that I can continue to be a decent contest participant and enjoy more operating, especially with an eye toward the moon and EME.

Thanks to all with the patience to work me this past contest. **73, Rick, K1DS/R and K1DS home station.**



Operating at the old Nike site behind the Training Center

NE3I September 2016 VHF QRP "Tinker Toy" Portable.

The first photo shows NE3I QRP Portable on Saturday at the Southeastern Pennsylvania Veterans Center, "SEPVC", Spring City, Chester County, PA, FN20. The Limerick Generating Station can be seen "puffing" in the distance. Elevation was about 300 Feet. The antenna is a Home Brew, Tri-Band 6 Meter Dipole, with 2 Elements on 2 Meters (Reflector and Driven E) and 2 Elements on 432, (2 Meter Driven Element with a 432 Director). The Dipole for 6 and Driven Element for 2 is made from 450 Ohm Ladder Line with legs cut for 6 and 2. Theoretically, it also acts as a Driven Element for 432,

(assuming, of course, the "40 Meter Dipole Rule i.e., that it will work on the 3rd Harmonic, 15 Meters, (in this case, 144/432). (Are you following this?) Anyway, I made contacts on 6 and 432 with the **"Tinker Toy Special,"** (note the removable 7/16 inch wooden dowel rod construction for easy transport in the trunk of a BMW). However, on 2 Meters, the IC 706 had a Buzz reflecting RF back or another phenomenon such that no one seemed to hear me on 2. (Hey, it looked good on the MFJ SWR Meter at home.)



Photo 2, depicts my return on Sunday morning with the Ladder Line Driven Element stripped down to its simpler 6 and 2 Meter Multi-Band Dipole configuration. The rig still did not particularly like it on 2. So, I switched over to the 2 Meter Mag-Mount Squalo and had more success working, WA2FGK in FN 21 and NF2RS Rover in FN 23. All Qs, a grand total of 18, were made with 10 watts or less (4 watts via the 223 Handheld and Mag Mount Vertical). **Sometimes, we get these ideas and simply must try them.** I suppose 99% of invention is at least partial failure. This location, with SEPVC Security approval, is not a bad location. However, be careful exiting your rover due to deer dropping land mines.

Thanks for the Qs. 73. Griff NE3I



KOBAK/R SEPTEMBER CONTEST REPORT

I roved in the September VHF contest with my minivan Limited Rover (4 low bands), activating grids in an arc around the South Jersey multiop (W2EA) at High Knob Fire Tower FN21kh.

Starting at Camelback FN21, I finally deployed my 5-element 6m beam in a contest about 15 months after buying it, having had weather and self-inflicted equipment problems preventing its use in contests last September, June, and July. It is not clear yet whether the big beam is worth the deployment effort, but it was good to at least finally use it. I am hoping at some point to be lucky in having the big beam deployed during an enhancement at the start of a contest, but I didn't hear distant stations this time.

W2EA was line-of-sight 21 miles away, so I had some receiver overloading and loss of significant parts of 6m and 2m, especially when they were pointed my way. I made a point of mostly pointing south and west to try to minimize interference to W2EA, although I was running much less power than they do.

Having had a near-disastrous antenna shift while driving in the June contest, I was more conservative in mounting antennas for the rest of the rove after Camelback. In a couple other previous contests, I used a plus-sign mounting pattern having decent antenna separation, using a fiberglass horizontal mast on a 12'+ high vertical mast. This time, I mounted the 4 antennas (3x 10' beams and a 6m Moxon) fairly close together on a single vertical mast only 9' high. The theory was that when making a long stop, I could attach 1 or 2 additional 6' mast sections and slide the antennas up for greater height and better separation. While I didn't actually do that this time, partly because of a compressed schedule on Sunday, I'm pleased with the concept and will probably use the same system in subsequent contests.

Following the same Saturday rove plan I've done in previous contests, I traveled from Camelback to the Hazleton area to activate FN11, FN10, and F20. At the FN10 site, I parked at a closed gate at dusk assuming the business there was closed and there would be no road traffic trying to get past the gate. After a few minutes of operating, a rough-looking gentleman on a fast ATV approached quickly from the other side of the gate. Thinking I was about to get yelled at to move away, instead he said someone let him know I'd be there; **I did not mention that I did not discuss coming there with anyone.** The gate was unlocked, and I was welcomed to come in to go to the high spot on the property. After making a decent handful of contacts, it had become dark, and I realized backing out of my tight location was going to be a lot more difficult than driving in. I managed to backup slowly by hanging out of the driver's door to avoid the minivan-flipping ditch. The last stop of the night was the Little League parking lot at the high point in Hazleton proper; I have developed a good email relationship with the League president to secure permission to use the lot for my FN20 activations in Hazleton.

The next morning, I planned to travel north to touch FN22 and FN12, and then retrace back to W2EA. Previous sites I used in those grids were better for altitude and openness, but were slow to travel to. This time, I went to an FN22 site with lots of TV towers in the immediate area. There was some interference from the high power transmissions all around, but it was not overwhelming. I quickly ran my four bands with K2LIM. (I did not hear them much on Saturday even though in previous contests they had been reliable from those Saturday sites.) W2EA wasn't on the air as far as I could tell, maybe it was too early at around 8AM. The FN12 site was only 8 miles away, but not high over the surrounding terrain and the forest was even closer than at the FN22 site. I had fewer contacts there, with only 2 Qs each with K2LIM and W2EA, but did snag my only contact with FN33 in Vermont.

The highlight of the rove was visiting the W2EA site. My visit was coordinated by Bob W2SJ — thanks for your patience with me Bob. It was great to see a number of Packrats there, and I was impressed with the sturdy tower setups given the high winds and the **ridiculous flexing of the antennas** in the wind. The Packrats' 6-band micropower microwave box was with me, used successfully in the January contest (and in previous contests by Bert K3IUV). To feed the box, I also brought my NPOTA backpack-rack IC7100 to supply the 144 IF for the microwave box and DC power from the backpack's 20Ah lithium battery. Unfortunately, the box failed to transmit on 903 and 10G, but we did contact on the middle 4 bands (1296-5G). Ray N3RG worked hard to diagnose and fix those two failed bands, but I was becoming anxious about falling further behind my rove schedule, so we had to settle for the 4 microwave contacts, and didn't even attempt low bands due to time. Before leaving, I also made contact using Bert's laser and my non-existent code skills. I was included in the W2EA group picture, which was very generous of Ken K2WB and the team.

From W2EA there was a longish drive to Bear Mountain Park NY, to operate at a **beautiful FN31 site** overlooking the Hudson at ~1300', which I had been to several times before. I'm always disappointed that I don't get more contacts at this location since it should have great visibility into the New York & Long Island area and southern New England, especially with another famous VHF club in the region. One particular frustration this time was hearing two guys on 2m having a **long** discussion about the contest, including speculating about what rovers would or would not come into the area. I tried to break in a couple times to say "hey, I know you guys are guessing about contacting rovers, but there's a rover **right here** for you", but I was not heard or ignored. Eventually the conversation ended and I contacted one of the guys on all four bands in a new grid for me, so my "patience" was worth it.

Having the mast at only 9' versus 12' makes a big difference in having the confidence to leave the mast and antennas up when getting to sites with low branches and low bridges. That is especially helpful in the trip from Bear Mountain to my FN30 site at Stateline Lookout just over the NJ border. The slow trip down the mountain includes low branches, a fairly narrow road, and plenty of pedestrian and vehicle traffic; this is followed by travel on the Palisades Parkway with low bridges (no commercial vehicles are allowed on the road, but the bridges' heights are not marked). At FN30, I only made 4 contacts before starting to have strange power problems, including not being able to reset the circuit breaker between the primary car battery and the secondary radio operations battery. Not



wanting to mess around with power problems, I disconnected the power connections and the rove was over about 6:30pm. I now think the problem was the secondary battery not holding a good charge, even though it's only about 2-3 years old; a new one is on its way.

I did not have definite plans to activate additional grids after FN30, but was hoping I'd at least pick up a few more stations around southern FN20 on the way back home, and maybe even get to FM29. However, I am grateful that the power problem wasn't severe until I was in my last planned grid. My claimed score of 6768 is OK, but I seem to be stuck in the mid-thousands on my roves. I guess I need to radically change my practices to get better results. Does that mean traveling to less desirable locations in many more grids like K2EZ/R does (and making contacts in motion, yikes), or should I travel to fewer grids and spend more time calling CQ to find more distant contacts? We'll see....

Summary:

8 grids activated: FN21, FN11, FN10, FN20, FN22, FN12, FN31, FN30

543 miles

	QSOs	points	grids	Claimed score: 6768
50	36	36	11	
144	39	39	15	Top stations: 1) W2EA 19 Qs (not including the 5 high band Qs as a Fixed Single Op at High Knob), 2) N3RN 17 Qs, 3) N2SLN/R 11 Qs
222	19	38	7	
432	14	28	7	
Total	108	141	40	



Seven Phone Calls

By Michael Davis, KB1JEY

To paraphrase an old joke about replacing lightbulbs, I asked Roger Rehr W3SZ the other day to guess how many phone calls it took for me to get my factory-installed SiriusXM™ radio in my 2011 Toyota Sienna (“Mighty Manly Minivan” or “MMM II”) fixed. Roger guessed seven and he was spot-on. To give you a roadmap to this anecdote, the calls were as follows:

- Toyota Dealer in downtown Philadelphia
- Toyota Dealer in Philadelphia suburb
- Local auto body shop
- Local auto radio shop
- Call to Toyota about financial participation
- Call to Toyota about technical support
- Hyannis Toyota in Cape Cod, Massachusetts

About a month ago, I was driving the MMM II when I noticed that I could no longer receive SiriusXM channels. The radio reported “No Signal”. After a call to SiriusXM to verify that my subscription had not expired, I called a Toyota Dealer in downtown Philadelphia to schedule an appointment. I had bought the MMM II at a suburban dealer but their courtesy vans do not operate on a schedule that is convenient for me. No loaner cars were offered by the suburban dealer and the rates for their rental cars were so pricey that I chose to forego my last complementary oil change with them. On the other hand, I could travel between the downtown dealer and my job in center city Philadelphia at no charge via the subway and my monthly SEPTA commuter pass.

So I left the MMM II with the dealer and went to work. Mid-afternoon, I get a call from the service advisor. They could **not** find anything wrong with my radio. At least there was no charge for looking at the MMM II. When I went to pick up the MMM II, the service advisor and I tried the radio. SiriusXM channels were coming in strong and clearly. I jumped in the MMM II and headed back to my QTH. A couple of miles before reaching my QTH, I tried listening to SiriusXM again. No signal. At that moment, I had an epiphany.

One of my fellow Packrats, Len N3NGE, has a day job maintaining the SiriusXM terrestrial repeater stations. Until I had a conversation with Len, I had assumed that SiriusXM channels were always received from satellites. As many Packrats know, radio signals in the bands used by satellites can be blocked by trees, mountains, and tall buildings such as skyscrapers. To provide better coverage, Len explained that SiriusXM signals are repeated by terrestrial transmitters in major urban areas. I had installed an after-market SiriusXM radio in the original MMM. That radio would actually display a comparison of the strength of the satellite versus the terrestrial signals. SiriusXM receivers automatically select the stronger of the two signals.

I called up the service advisor of the Philadelphia Toyota dealer and told him that I had bad and good news. The bad news was that I was still experiencing problems with receiving SiriusXM signals. But the good news was that since we received the terrestrial signal in Philadelphia but not the satellite signal elsewhere, the problem had to be in the “button” antenna on the roof of the MMM II. That antenna also serves the broadcast FM, AM, and GPS receivers. The service advisor’s response was to direct me to call SiriusXM. “Why?” I asked. “This has to be caused by a defect in a Toyota-supplied part, not with

the SiriusXM signal or subscription.” He and the service technician had no clue that the terrestrial repeaters had obscured the diagnosis of my complaint.

Next, I called the suburban Toyota dealer where I had bought the MMM II. My regular service advisor was on vacation. When I asked to speak with someone else, I was routed to the Used Vehicle Sales Manager. He promised to have someone get back to me but that follow-up telephone call did not occur that day or the following day.

Two days later, I had a second epiphany. Instead of visiting a Toyota dealer, I could visit an auto body shop, which could drop part of the roof headliner and swap out the antenna. So I called an auto body shop with which I had a good experience. They had repaired the roof and interior of my late XYL's sedan when a tree fell on during the big 2014 winter ice storm. After talking on the phone with someone in the auto body shop, I was told that they sent this type of repair to the local auto radio shop. My local mechanic also told me that this auto radio shop has a good reputation and speculated that some car dealers used them to handle radio repairs as well.

I called the auto radio shop. After describing my difficulty and working diagnosis, their response was that I would have to go to a Toyota dealer for this complaint.

Next, I thought that if MMM II needed to be repaired at a dealer, maybe the Toyota Motor Corporation would participate financially in the cost of the repair. After all, it was a “certified” vehicle and the odometer had just passed 100,000 miles a few days earlier. The Used Vehicle Sales Manager at the suburban Toyota dealer had told me that I would have to contact the Toyota Motor Corporation itself for financial assistance. During that call, I learned that the radio was covered under the comprehensive coverage provisions of the certified vehicle warranty and that that coverage had expired 10,000 miles earlier. No financial help from Toyota could be anticipated.

If I was going to get my the MMM II fixed at the Philadelphia Toyota dealer, then I needed someone to explain to them that the problem was due to a failed Toyota part, which they could replace. So I made another call to the Toyota Motor Corporation and asked if they could put me in contact with a technical advisor who would help verify my hypothesis. I was told that there were no technical persons available. **Incredible!** I asked “How do Toyota vehicles get engineered in the first place? Do the engineers come from outer space?”

By this time, I was planning for my annual two-week visit to Cape Cod. No time to go back and forth with a dealer by the date I would leave. I have vacationed on Cape Cod annually for the past thirty years. I remembered that I had visited Hyannis Toyota with other Toyota vehicles during previous vacations. My visit to Hyannis Toyota two years ago had been very satisfactory. I called Hyannis Toyota and spoke with Meaghan Hughes, an Assistant Service Manager. She told me that her dealership had a test kit from Toyota that could isolate the cause of my problem. If it were the antenna as I anticipated, they could order one and install it for me. We made a service appointment for the following Monday.

I searched on the internet after my call with Meaghan. I found a PDF document describing the test kit available to Toyota and Lexus dealerships. In addition to a tester, the kit had a spare antenna. To confirm the diagnosis of a defective antenna, they would wheel the vehicle under test out of the shop and plug in the spare antenna. If SiriusXM reception were restored, that would confirm the diagnosis.

So my girlfriend and I dropped off the MMM II for diagnosis and took the complementary courtesy van across the street to the Cape Cod Mall for lunch and shopping. Mid-afternoon, I get a call from

...SEVEN cont'd

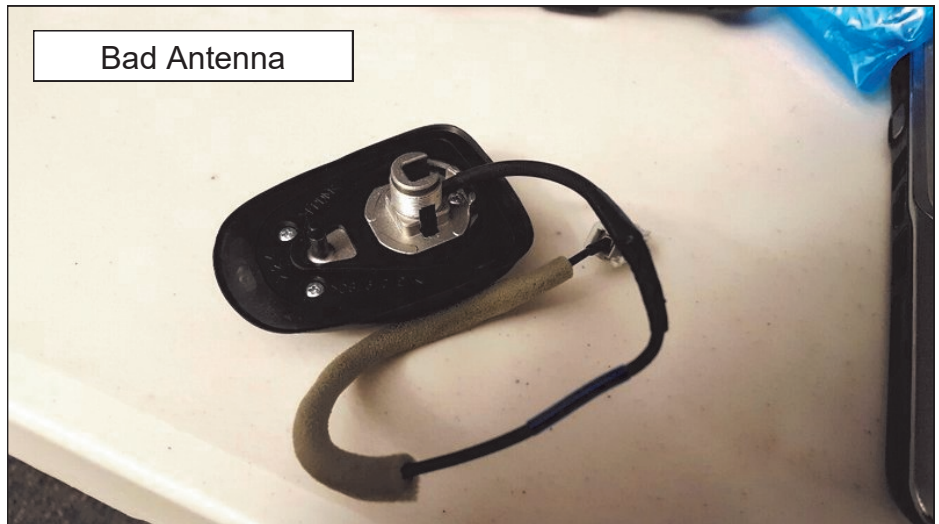
Meaghan. Yes, they confirmed my diagnosis about the defective antenna. A new antenna had been ordered. Instead of putting the headliner back up for the night, could they give me a complementary loaner vehicle to use in the meanwhile? Sienna, Prius, or Camry?

After the successful repair, upon our exit from the dealer, my girlfriend and I admired the

customer waiting area. Comfortable reclining leather lounge chairs, including two with built-in massagers. Complimentary computers and WiFi for customer use. Free coffee, bagels, fresh fruit, and granola bars. Big screen televisions. The only question in my mind was whether I was going to be able to drag my girlfriend out in time for dinner.

So what might the take-away message be to my fellow Packrats and other hams? First, the world would be better served if more folks had the diagnostic skills that ham radio can instill. If you have a radio where one set of antenna components gives you a good signal on a band but the other antenna components do not, you learn to suspect that the receiver must be fine. You then concentrate on finding a failure along the feed line or check to see whether antenna is functioning properly.

What might I have done if my travel plans did not take me to Cape Cod the following week? I might have purchased a replacement antenna via the internet and explained to the auto body shop in person that all they needed to do was drop the headliner for me and reinstall it once I swapped antennas and connected the replacement.



3830 Scores

For additional contest scores, beyond those shown in this issue of Cheese Bits, (the September VHF, 144 MHz Sprint, 222 MHz Sprint contests) check out the individual contest reports at <http://www.3830scores.com/>. Just click on the contest of interest under "Summaries of Recent Contests". Once at the contest you're interested in you can scan down the "Club" column for Mt Airy VHF Radio Club to quickly find the entries reported by your fellow club members.

Reports at 3830 are voluntary and so are not necessarily comprehensive, but there are lots of them there.

Well worth looking at.

73, Lenny W2BVH

The Wayback Machine **In CHEESE BITS, 50 Years Ago**

Nibbles from September 1966. Vol. IX Nr. 7
de Bert, K3IUV

(author's comments in italics)

- **“Our Prez Sez”**. Prez W2EIF, Jo, reported on the September contest, and said “activity this year was lower than normal”. He encouraged the group to begin preps for the January contest, stating “... get ready now, ...” (*nothing changes!*)
- **Marconi Honored**. An International Center for telecommunications studies was opened in Italy on October 2. It was set in Marconi’s country villa near Bologna where he conducted his 1st successful experiments in transmitting a radio signal in October, 1895, at the age of 21. Guglielmo Marconi was an Italian Physicist credited with developing wireless telegraphy. He died in 1937 and was buried in a mausoleum on the grounds of the villa.
- **Transmitter Hunt**. Rescheduled from 10/23 to 10/30, to avoid conflict with the Penn-Jersey auction being held in Trenton.
- **October meeting speaker**. W3CJU, Don, will speak on “The Acutron watch, and how it works. (*Don was the club watchmaker whose store [Kraut Jewelers] was in Doylestown. He kept many of the member’s watches in good running order. That included rebuilding my Grandfather’s pocket watch.*)
- **SJRA 50th Anniversary Banquet**. Forty seven (!) Packrats and wives attended the event. Among the highlights: Susie, wife of our prez, W2EIF, won the first prize (an RCA Color TV). W2JAV, Phil (Mr. Teletype) conducted an antique wireless demonstration. A number of dignitaries from ARRL Headquarters and from RCA were in attendance. Among them were Clarence D. Tuska, the founder of the ARRL, and W1LVQ, John Huntoon, Editor, QST. It was reported that it took 3 hours to finish serving the meal, due to a “waitress strike at the Ivystone Inn”!
- **W3CL TVI Situation**. A lengthy story was related by EI, K3JJZ. W3CL, Harry, was being harassed by a neighbor that had a TVI complaint. EI related many of the details, including threats made by the neighbor, and a visit to Harry’s shack by the Abington Police. The saga continued, with contacts and visits to the Police, the FBI (*yes, the FBI*), and the FCC. (*Interesting note. Mention is made of Harry being in QSO with WA3EHD, Jim, when some of the threatening calls were made. Too lengthy to repeat the full story here, but I recommend you read it on the W3CCX web site.*)
- **Technical Topics**. “A Transistor Oscillator That Works Every Time”. From an exchange paper, authored by W6GGU. Schematic and details for constructing an overtone crystal oscillator. Tested and worked well to the 11th overtone! Also. Hidden transmitter hunts were very popular in this time period. A couple of construction articles were included, to

support hunting. First was an easily constructed 6-meter “loop” antenna, with a diameter of 18” Second was a detector and amplifier circuit , that “hunters can use without a tuned circuit so that one detector can be used with different antennas for the different “hidden” bands”.

- **Swap & Shoppe.** The monthly column by W3ZRR. Included an interesting offer by WA3EHD, Jim. (*Yes, 50 years ago*). To Trade. A 3-element Telrex with 60’ of RG/8, plus money. For, a Heath Sixer in fairly good condition. (*I wonder if Jim remembers that offer?*).

As in previous editions, 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 www.W3CCX.COM and read the full issue posted there by our Webmaster, Ron, W3RJW).



thirty, de K3IUU

Optical Illusion

<http://www.theverge.com/2016/9/12/12885574/optical-illusion-12-black-dots> has a remarkable optical illusion. Hard to believe even when you see it. Things like this get you to understand how our perception is limited. Check it out.

--W2BVH

OCI and DCI Intermod Filters

For those of you who have lamented the lack of availability of DCI filters, here is good news!

Ralph Olds, the owner of DCI retired in 2007. He is now restarting the business in a smaller way, and is offering 2M and 440 MHz bandpass filters as his first products. They are not the narrow versions that I bought while he was still in business, and the 440 MHz version of course wouldn't work for our weak signal portion of that band, but I suspect that Ralph would be happy to build a version for the frequency and passband width that you want.

His new website is:

<http://www.ocicom.com/index.php/2-uncategorised/1-about-us>

DCI is also still around. They cater to commercial and military, but still have Amateur filters too:

<http://dci.ca/?Section=Products&SubSection=Amateur>

73,
Roger W3SZ

All About Circuits

All About Circuits is a web site catering to those interested in Electronics and Electrical Engineering. It has plenty of feature articles on electronic design and industry news. It's a bit cluttered with ads, but still a very good resource. You can also sign up to receive periodic emails from them (about once every week or so).

For more info see their web site at <http://www.allaboutcircuits.com/>

--W2BVH

Events

For inclusion, please direct event notices to the editor.

Fall Sprints 432MHz - Contest - 7 to 11 pm local Wednesday October 5, 2016. Full rules available at http://svhfs.org/2016_Fall_Sprint_Rules.pdf

Fall Sprints Microwave (902+) - Contest - 8am - 2pm local Saturday October 8, 2016. Full rules available at http://vhfs.org/2016_Fall_Sprint_Rules.pdf

MUD 2016 - Conference - October 13-15, 2016. St. Louis, MO. <http://www.ullmann.us/MUD2016/index.htm>. See details, next page.

EME - 50 MHz to 1296 MHz - Contest - October 22-23, 2016. See <http://www.arrl.org/eme-contest-1> for details

ARRL January VHF Sweepstakes - Contest - January 21-23, 2017. Details to follow

ARRL June VHF QSO Party - Contest - June 10 - 12, 2017. Details to follow.

CQ WW VHF - Contest - July 15-16, 2017. F Details to follow,

Proposed 222 MHz and Up Distance Contest - Contest - August 5-6, 2017. Info on whether this will be held, to follow.

10 GHz and Up – First Round - Contest - August 19-20 , 2017. Details to follow.

September VHF QSO Party - Contest - September 9-11, 2017. Details to follow.

10 GHz and Up – Second Round - Contest - September 16-17, 2017. Details to follow.

Note: EME dates have not been finalized yet for 2017

Elio (AI) Collusi W3RZU, SK

From the Packrat Reflector

I am passing a message from Rick, N3ND. He told me that W3RZU, Elio (AI) Collusi passed away yesterday 9/9/16). RIP Elio.

--Ed, WA3DRC

I was just thinking about him yesterday.

I worked with him at Solid State Scientific and worked for him at AEL .

May he Rest in Peace.

--Dan WA3NFV

Very sorry to hear about Elio.

Some of you may not remember that Elio was one of the "founding fathers" of the Packrats, some 60 years ago, on May 15, 1956.

Another chapter closes.

--Bert, K3IUU

Elio was my boss at Solid State Scientific in Montgomeryville. After the HK1TL moonbounce expedition to Colombia, he was so impressed that he kept bugging me to come work for him which I eventually did.. Long story there, but at any rate I got to know AI really well and am sorry to hear of his passing.

(Not many "originally issued" W3 calls left!! *sigh*...(

--Bill, K1DY

I remember Elio was looking for a good technician. He asked me as Packrat President if I could recommend anyone. "Sure," I said, "Bill Olson must be tired of fixing motorcycles he'll be a good candidate." Many are the stories of Packrat and industry interconnections. Farewell to Elio a founding father of the Packrats.

--Tony, W3HMU

I am so sorry to see the passing of Elio. He was one of the great Packrats that inspired me. I would take a bus from Doylestown to Willow Grove then catch a ride with K3CIV Ralph Hersh (SK) to the West Oak Lane Community Center for the Packrat Meeting. Many times Elio would be making a presentation usually to do with aircraft radios. Many years later at AEL we would get together on some project or proposal. Elio had on his office wall the first 2 foot square combined impedance and admittance Smith chart I had ever seen. He also gave many great presentations to various Packrat activities typically on solid state design. Elio was a wonderful person and will be greatly missed.

--Walt K3BPP

Sad to hear that another PackRat has passed.

Elio Colussi, W3RZU was one of the founding fathers of the club, so he was a member for 60 years in May 2016.

Rest in Peace Elio.

The next longest member of the club is Bob Fox, W3GXB, since 01/1957.

--Dave W3KM

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Microwave Update 2016

Microwave Update (MUD) is an annual event held since 1985. MUD is a conference dedicated to microwave equipment design, construction, and operation. It is focused on, but not limited to, amateur radio on the microwave bands. The 2016 conference will be held on October 13-15, in Saint Louis, MO.

Conference activities:

- Antenna Range
- Noise Figure Measurement
- Technical Presentations
- Flea Market
- Equipment Auctions
- Banquet with Prize Table
- Hospitality Room
- Friday and Saturday Lunches with guest speaker
- Free hotel breakfast on both conference days

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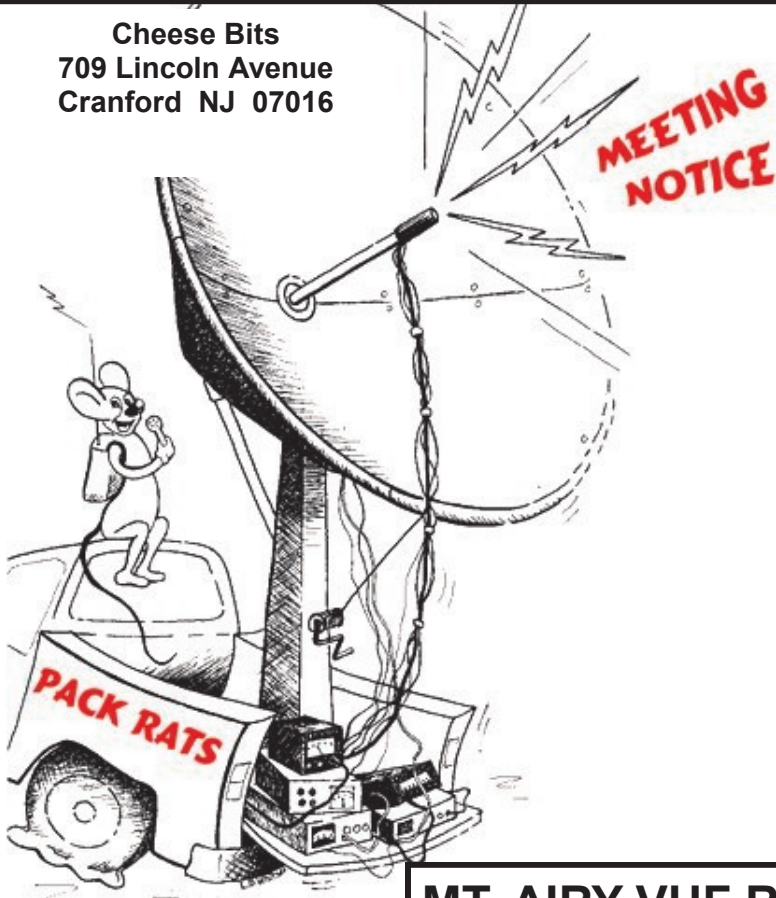
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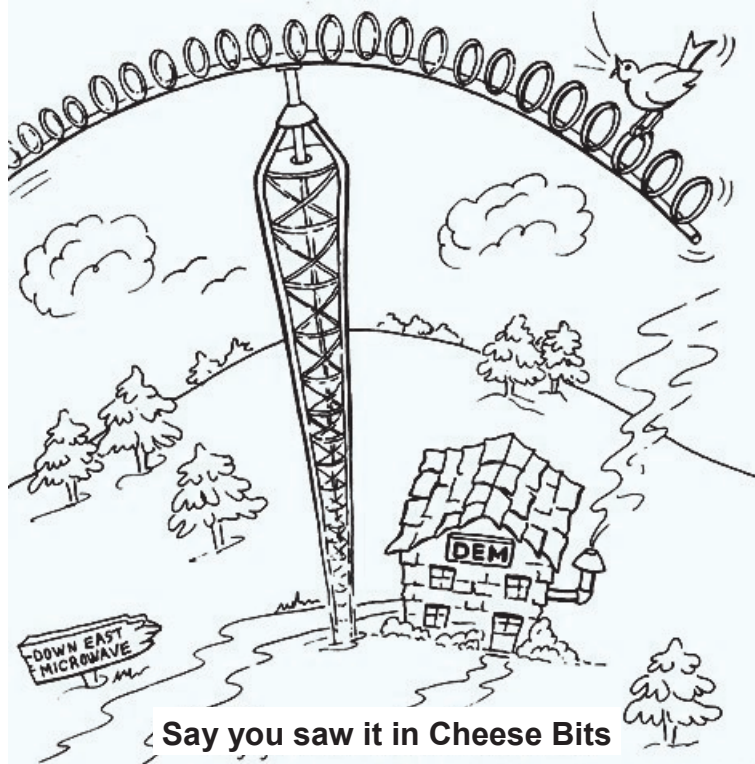
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