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

CHEESE BITS

W3CCX
CLUB MEMORIAL CALL

ARRL Affiliated Club

Volume LV | August 2014 | Number 8

PREZ SEZ:

It's hard to believe how fast the summer is flying by. Here it is August and the ARRL UHF Contest is upon us. I want everyone to at least get on some time this weekend and make some UHF and above noise. There will be folks on from 222 on up through 24GHz around here. The Contest runs from 2 PM on Saturday until the same time on Sunday. I know of at least three of our rovers who will be out and about both on Saturday and Sunday. This is now also a club event, so we want as many logs as possible. Most of the action will originate from either 222.100 or 432.100 but some rovers will use their usual liaison frequency of 144.260. FM works as well with either 223.500 or 446.000 being the place to be.

Seems as though this is the time that my 5 and 10GHz signals seem to fade away, so this week I climbed the tower to see what was up. Now some of you may be saying, I remember last year that you went up on the tower to install a piece of 2 mil teflon to keep the feeds dry; and you would be right. But I didn't learn a lesson. Keeping water out of the feeds on my one meter offset dish is the largest maintenance challenge I have. There was so much water that I exhausted the air can I took up with me and the water was still gurgling in the feed. That sure puts a damper on the signals. When the contest is over I will be lowering the whole feed arm and attempting to invoke a permanent solution to the tattered radome situation on both my 5 and 10 GHz feeds. I will be on from 222 to 3456 plus 24192 this weekend. If you are nearby and can get through the watered feed, then we can attempt 5760 and 10368 as well.

Two more major events in the month of August: first and foremost the Packrat Picnic will be held once again at the QTH of N3ITT. Al and Carol have refurbished their pool and will have the meat ready to cook on Saturday the 16. Let Al know what side dish you can bring and come join the fun. Some are going to be on 10GHz and up that same day starting early in the morning. It's when many operators go to high places and try to work on 10GHz and above. With liaison on 144 SSB many operators will be available to attempt on those high bands. This is the first of two weekends for the ARRL event, the second one being in September.

Two more major events will grace us in September, the ARRL September VHF Contest and the Annual Mid Atlantic VHF Conference that the Packrats host in Bensalem. Make sure your equipment is working for the September event; it's a great time to shake things out for the January VHF Contest while there is still time to effect repairs during the comfortable fall months. It's even a great time to add that new band you've been waiting to construct. And now is the time to register for the Conference. Of the registrants to date half are not from the club. We certainly love our out of town visitors, but we want all of you locals to get registered and come to the Conference. Register today!

If you like contesting this is a great time of

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PACKRAT BEACONS - W3CCX/B
FM29jw Philadelphia, PA
50.080 144.284 222.064 432.286 903.072 1296.245 MHz
2304.043 3456.207 5763.196 10,368.062 MHz (as of 1/08)

MONDAY NIGHT NETS

TIME	FREQUENCY	NET CONTROL
7:30 PM	50.145 MHz	K3EOD FM29ll WA3QPX FM29di
8:00 PM	144.150 MHz	N3ITT FN20kl
8:30 PM	222.125 MHz	KB1JEY FN20je
8:30 PM	224.58R MHz	W3GXB FN20jm
9:00 PM	432.110 MHz	WB2RVX FM29mt
9:30 PM	1296.100 MHz	K3TUF FN10we
10:00 PM	903.100 MHz	WA3SRU FN20le

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

the year. Now that I've talked about the August and September events, October brings not only the Sprints, but also the CQ WW events as well. In November we have Sweepstakes along with another CW WW CW Contest. December brings both the ARRL 10 meter and the 160 meter Contests. For the EME fans we have Contest activity in October, November and December **so there's something for everyone**.

Don't forget to use the CW contests to sharpen your code skills in anticipation of the VHF weak signal operation. Good CW skills can be used to improve your score.

The second half of the year is well under way, and we have lots of ways to enjoy it.

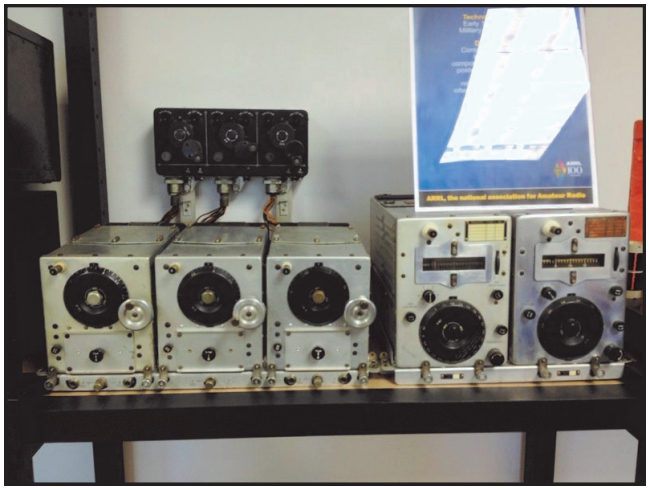
Lets work on lots of bands,

Phil, K3TUF

THE 2014 ARRL CENTENNIAL CONVENTION

Many club members attended and spoke at the ARRL Centennial Convention, held in Hartford at the Convention Center on July 17-19, 2014. There were over 2,000 hams that attended, and the convention hall was filled with exhibitors. A few folks arrived on Wednesday evening to be there first thing Thursday morning to attend various forums. Phil K3TUF and Michael KB1JEY both attended "**Contest University**." I hope they share some of their pearls of contesting that we all can use on VHF and up. I arrived Thursday afternoon, and after checking into the adjacent Marriott hotel, headed to the convention registration booth and exhibit hall. Six VHF clubs shared the expenses of a double-sized carpeted booth with electricity. Thanks to Michael, we had comfortable chairs, while Mark, K1MAP brought a flat screen monitor. Paul, W1GHZ brought a 10GHz radio and dish, and Mark had his portable 10GHz rig/horn. With this equipment, Paul and Mark demonstrated 3 centimeter communications live. We also had a collection of pictures and videos of VHF, UHF and microwave rigs and their operation. These were contributed by members of the N.E.W.S. and the Packrats. The videos played continuously on the flat screen during the exhibitor hours. Packrat members attending included Al K3WGR, Jon W2MC, Phil K3TUF, Rick K1DS, Michael KB1JEY, Joe K1JT, Doc W3GAD, George N2CG, Tom KA3FQS, John K3MD, and Steve W1SMS.

Thursday evening's special reception for ARRL major donors was held at the ARRL Headquarters in Newington. Both Phil K3TUF and Al K3WGR were honored invitees, and I went as Phil's guest. It was a delightful evening with a light dinner and open bar, served al fresco on the tented lawn. The HQ building was open to use the facilities, and they had a small but neat display of some classic vintage radios, including the ARC5's in their racks with dynamotors, a set of three Benton Harbor lunchboxes: Tener, Sixer and Twoer (http://www.heathkit-museum.com/ham/hvmhw-19-29-30.shtml), and some of the Gooney box 2m sets with the magic eye tube. Toward the latter part of the evening, we all gathered in front of the HQ building, where there was a brief thanks to the donors from Kay Craigie N3KN and Dave Sumner K1ZZ. Three large granite markers were then revealed with the names of many of the major donors for the second century campaign who have given between $10,000 and $1,000,000 toward the preservation of the ARRL and amateur radio for the next 100 years. I was convinced to make my own modest donation, and there were pledge cards at the banquet the following evening to begin to "pay forward" for the next century of ARRL.



Friday was a full day of presentation. Phil gave a comprehensive talk and slide show regarding tower safety and rescue. My topic was, “VHF Rovers, Past, Present and Future.” I showed slides of early rovers, the usual suspects and the newest and most unusual rovers. Some had crank-up towers on trailers; others had dishes and EME arrays. When attendees were not at some of the 60 or so seminars, they were busy winding their way through the exhibitor spaces. Michael and I made a few trips to the “flea market” area of the exhibit hall and found some worthwhile bargains. The ARRL Lab was being cleaned out, and most of the items were being sold at almost “give-away” prices to get the stuff a new home. I picked up another microwave power meter, several ammeters that measure DC to 50 amps, and a nice baggie full of microwave connectors, including some swept SMA connectors. Michael was equally happy with a similar collection of goodies. There were also some calibrated attenuators that we added to our stock.

Friday evening was the banquet with almost 1,000 attendees. Not only was it a delicious meal, the program was excellent. We saw vintage pictures of many of the hams who were on the air in the 40’s, 50’s and 60’s. There were welcoming speeches from Kay Craigie and Dave Sumner. There were multiple presentations to the ARRL from various radio societies around the globe. The keynote speaker was Craig Fugate KK4INZ Federal Emergency Management Agency (FEMA) Administrator. He spoke fondly of the amateur radio service and our capabilities to be organized and provide communications assistance when needed. Each attendee also received an etched glass with the ARRL Centennial logo. One of these will be auctioned off at the Mid-Atlantic States VHF conference at the end of September.

Despite feeling a bit tired, I had made a reservation to attend the “midnight” (actually 10PM) ARRL Wouff Hong Ceremony. All that I can relate is that it was impressive, entertaining, educational, and now a part of my 55 year ham radio career. I am officially a member of the Royal Order of the Wouff Hong.

Saturday’s schedule was similar, with multiple seminars and the exhibitor area sales and information booths. We had a continual flow of visitors at our booth and gave out many flyers for the Mid Atlantic VHF Conference while the N.E.W.S. folks sold several more of their conference proceedings discs. We encouraged all visitors to be active on VHF, and for those in the area to try and check in to the nets. During the days of the convention there were almost continuous shuttles to the ARRL HQ and station for tours. At noon, Joe Taylor K1JT made his presentation to hundreds of attendees in the main ballroom. His focus was on the efficient use of the amateur radio spectrum and the many tools that we now have at our disposal (thanks to his efforts). He focused on the digital modes for both HF, VHF and microwave and how their use has enhanced communication ability,

experimentation and propagation prediction. Joe received a medal from the ARRL for his contributions. With a few of the club members on hand, we managed to snap a picture of the folks assembled.

For my finale, I went to hear Gordon West WB6NOA speaking on VHF/UHF tropo propagation. He had a nice set of pictures of the VHF gear on the island of Hawaii up at high altitude, as well as demonstrative satellite pictures and Hepburn forecasts. There were plenty of audio clips played to supplement his talk about the ducting between the west coast of the US and Hawaii. It was a fitting ending to an excellent convention. Having met many of my friends from New England and doing various VHF activities, I returned home with a bagful of goodies and great memories. **73, Rick, K1DS**

MY 15 MINUTES OF FAME AT W100AW

By Michael KB1JEY

After attending the ARRL 100th Anniversary Convention, I decided to stay in Connecticut overnight and visit the ARRL Headquarters and W1AW, the Hiram Percy Maxim Memorial Station. Both HQ and W1AW were open last Sunday to accommodate ARRL visitors who were in the Hartford area for the convention.

Upon reaching the parking lot, I made the obligatory contact with W100AW on 2 meters with my trusty HT. W100AW was the special events call sign for W1AW during the run-up to the 100th ARRL anniversary. I poked my head in the station building where it was suggested that I might wish to operate. So I walked across the parking lot to the ARRL HQ building to schedule a 15 minute operating appointment.

What band should I chose for my "15 minutes of fame"? I do most of my operating on VHF and UHF SSB, which were not available as a choice. When I operate HF, 40 meters is a favorite band. So I signed up for a 15 minute slot at the 40 meter [phone] station at 11:30 AM. **I did not consider which bands might be active for a mid-morning QSO.**

I watched another visitor operate the 40 meter station to pick up tips. When he left early without making any contacts, I slipped into the operator chair. The Yaesu FT DX 5000 HF transceiver had a whole lot more buttons, knobs, and display elements than my venerable ICOM IC-746 and **it intimidated me.**

I started to call CQ, only to notice that the LCD display on the Yaesu Quadra VL-1000 amplifier reported an ominous warning that the SWR was greater than 3:1. I had visions of **getting a nasty repair bill** from ARRL HQ. I called over the station manager, Joe Carcia, NJ1Q. He chuckled a little, flipped up a trap door on the amp, pressed the tune button and all was good again.

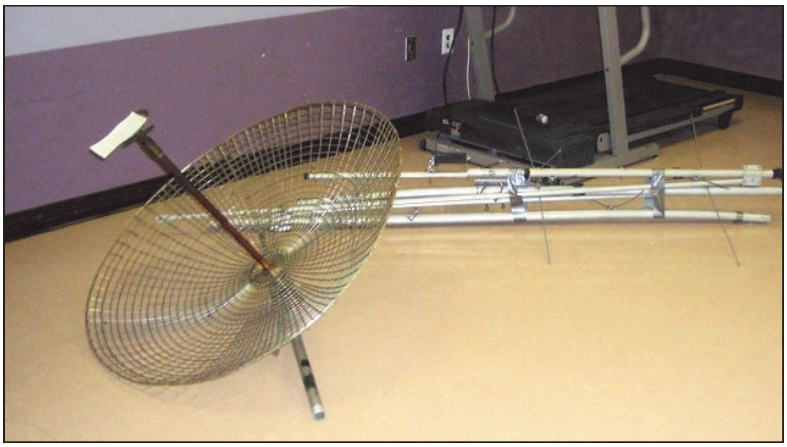
Joe left the rotator at a beam heading which favored the South. I called CQ for about 10 minutes with no success. So I switched to "search and pounce". Tuning down the dial, I heard a couple of hams in a QSO. One of them announced that he was about to QSY to another band. So I gave my call. "Mac" Gray W8LMG came back and we had a friendly conversation for a minute or so. Mac was operating from Hillsboro, WV.

Having made a contact, I slid out of the operator chair and collected my certificate for operating at W100AW. On the way out, I spoke with Steve Ewald WV1X, who seemed as relieved as I upon hearing that I actually worked another station. I told Steve that VHF contests were good practice in calling CQ with few hams coming back to you.

WHITE ELEPHANT AUCTION 2014

Due to the National ARRL Centennial Convention being held starting the third Thursday of the month, this year's event was moved to a week earlier, and held in the air-conditioned facilities of the Ben Wilson Senior Center. Although I anticipated a smaller selection of items and a thinner crowd, I was pleasantly surprised by the volume and quality of many of the items and the nice turnout. There was substantial time for inspection of the goodies, and after a very brief meeting, the action started. Our Auctioneer, Elliott, K3JJZ was in his prime, as he reviewed the bidding rules. There seemed to be something for everyone, from antennas, to parts and power supplies, VHF and microwave amplifiers, and several excellent microwave dishes.

Thanks to the members cleaning out their shacks and garages, many quality items were sold at bargain prices. A 2304MHz commercial transverter was sold for a bit over $100. Astron 12 amp power supplies went for under $50. A complete cable and connector crimper set in its case was had for $35. I bought two



boxes full of milliammeters to use as output power indicators for less than $1 per meter. Even most of the boat anchors were sold—perhaps to go to eBay, hamfests, or the scrap yard for cash. A vintage Hammarlund HQ-195, rack mounted receiver brought $15. The left-over's included several 25'-35' of LDF-50 hardline, likely to be recycled as the scrap copper price is up. An old "studio quality" TV monitor is also finding its way to the electronics recycling center at Best Buy.

A nice commercial 10GHz 30" dish and feed was snatched up by K3TUF, hopefully for the future needs of the club, or others going out for the 10GHz and Up ARRL Contest. The majority of the remains of a Cushcraft 2m Boomer was bought by K2WB for a song. W3ICC got a beautiful vintage homebrew 40" dish with a 1296MHz feed, measured at 20 dB gain. A Yaesu 550 elevation rotor, control box and cable was picked up by KC2TN for a great price. Everyone seemed satisfied with the event and their purchases, including the auctioneer who wound up the event before 9:30PM. Thanks to Drex, W3ICC for the refreshments, Dave for managing the buyer and seller tabs, and helpers Bert, K3IUV and Bruce, WA3YUE for moving the items. **73, Rick, K1DS**

THINGS THAT GRIFF NE3I THINKS ABOUT

Radio Waves and the Speed of Light

1. You are on a starship stationary in outer space. An object is approaching you at the speed of light. Would you see it coming?

2. You are on the same starship, (the day before the above collision), parked above a planet on which a Packrats operator has been transmitting a series of Vs in morse code at 20 WPM on 144.200 MHz, (of course a Packrat would never do this and tie up the National Calling Frequency). Your starship Captain (Kirk) orders the ship to travel away from the planet at a speed of 20,000 mph. At what rate of Words Per Minute would you receive the Vs?

3. Captain Kirk now orders the ship, (the Enterprise), to accelerate up to the speed of light still moving away from the planet on which the Packrat is transmitting the Vs. Would the CW seem to slow down?

4. The Enterprise, still moving away from the planet achieves the speed of light. What would the Vs transmitted in CW sound like?

5. (Bonus Question). Captain Kirk orders the Enterprise to go to Warp Factor 2, (assume that means twice the speed of light for the purposes of this exercise). The Enterprise, still traveling away from the planet is now out racing the radio waves sent during the past year. Would you be able to receive and decipher the Vs previously sent by the Packrat Operator "below" and, if so, how would the text read?

Sorry, just finished reading, (or at least trying to read), Physics of the Impossible by Michio Kaku. That prompted this. 73. Griff

Hi Lenny. I am not sure if I am correct but, assuming that some of the physicists in our ranks reply, we will see.

Griff's Answers to Things that Griff NE3I thinks (wonders) about, -Radio Waves and the Speed of Light

1. No, since the object is traveling toward the ship at the speed of light, its past visual images would all arrive, (collide), with the ship at the same time that it does.

2. The CW speed would still be 20 WPM, the message would just arrive a fraction later than it would otherwise have.

3. Yes, as the ship accelerates away from the transmitter, the speed of the CW transmission would appear to slow down.

4. Depending upon whether the ship attained light speed along with a dot, dash or space, dots and dashes would sound like a continuous tone, and a space, like silence (white noise?).

5. The receiving operator would receive "B B B".

These are my conclusions. 73. Griff ne3i

THREE DAYS LATER, GRIFF RECONSIDERED:

Actually, I think that my answer to the bonus question may be wrong. If you were traveling away from the signal at slightly faster than the speed of light, you would receive the dots and dashes in reverse order. At twice the speed of light, i.e. Warp factor 2, would the cw have ever reached your position? Griff ne3i -I need a real physicist for this. Maybe K1JT can help.

And Roger W3SZ asked us to check out:

https://www.princeton.edu/~achaney/tmve/wiki100k/docs/Alcubierre_drive.html
AND
http://www.industrytap.com/nasas-ixs-enterprise-make-captain-james-t-kirk-proud/

Russ K2TXB Answers Griff's Questions on Radio Waves and Speed of Light

1. No. Due to Doppler shift the frequency light will be shifted upwards from 400 THz to over 1.2 * 10^11 THz, theoretically to infinity, way way way above the range of human eyesight.

2. He will not hear it at all unless he tunes his receiver about 4.3 KHz low to account for Doppler shift. If he does the cw speed will still be 20 WPM.

3. No, but the signal will quickly drift out of the pass band of his receiver and out of the tuning range, most likely .

4. If he can tune to 72.1 MHz he would hear the signal normally.

5. Doppler will lower the signal to 48 MHz, but the code will still sound normal.

73, Russ K2TXB

Two Meter Transatlantic Trial

Transatlantic signal from Pouch Cove sets record **http://www.cbc.ca/news/canada/newfoundland-labrador/transatlantic-signal-from-pouch-cove-sets-record-1.2699961**

A group of amateur radio enthusiasts set a new record when they sent a radio signal across the Atlantic ocean from Newfoundland to Europe.
Roger Sturtevant, part of the group from Nova Scotia, said they wanted to use new technology to replicate, in reverse, Guglielmo Marconi's 1901 transatlantic signal. He said the group was successful, and managed to send a two-meter signal from Pouch Cove to the U.K., setting a record and surprising many amateur radio enthusiasts.
"In our hobby, this is really reaching for the limits — most people think it could not be done. Theoretically, perhaps it could. We'd have to have exactly the right conditions at the right time."
Sturtevant said the group was thrilled when their message was heard across the Atlantic Ocean, and they weren't the only ones celebrating.
Sturtevant said the group hopes to win the Irish Radio Transmitter Society (**http://www.irts.ie/cgi/index.cgi**)'s Brendan Plate, one of three coveted Brendan Awards, for their achievement.

MUD 2014!

Now's the time! If you're planning on attending MUD2014 in Rochester this year, PLEASE register for the conference and let us know you're coming!

The conference promises to have plenty of interesting topics, including 78GHz work in VK-land and undoubtedly presentations about receiving systems and solid-state transmit power amplifiers.

Time is getting short (though you wouldn't know it by the calendar and the summer weather). The conference will be held October 24-25, 2014 in Rochester, NY. The Rochester VHF Group has gotten commitments from the hotel for great rates and we've planned some activities for early arrivers before the conference and spouses during the conference days.

Registration is open and is reasonably priced.

Airline fares to Rochester are also reasonable; we are served by the major carriers, through New York, Philadelphia, Washington, and Chicago.

Go to: **www.microwaveupdate.org** to register for the conference, which will be held at the Rochester Airport Marriott.

We're looking for presenters and articles for the proceedings, as well. So if you're doing anything microwave-related, please consider doing a presentation or at least submitting a paper for the proceedings.

I hope we see you at MUD2014!

73
Dave Hallidy K2DH
MUD2014 Co-chairman

GOT A LOTTA WATTS AT PAUL'S

After completion of integrating the W6PQL 432MHz 500W SSPA into its chassis, I needed a trusted Packrat to guide me through the testing and tune-up. While I was at it, I managed to bring along a few 2304 SSPAs and my Toshiba 3456 SSPA. We arranged a mutual time on a Sunday and I made a list of all the power-supplies, transverters, amplifiers and power meters to bring.

I loaded the car on Saturday evening, removing the microwave shelf of transverters from the rover to have the units to drive the amps.

I woke up early Sunday and made final preparations, jumped into the car and pushed the start button, but apparently the battery gnomes had better ideas for me. I tried the charger, the boost, and finally called AAA. The young man showed up in a Jeep, carrying his hand-carried starter unit and a tester. He put the digital meter clips on the battery and the current yolk on the cable. The unit tested a whole set of parameters while he turned on the headlights, and then tried to start the engine. Lo and behold, the charger and boost I had given the battery apparently now worked, as he never had to use his starter unit. This 4 year old original equipment battery will be replaced ASAP.

On to Paul's (WA3GFZ) now. I am always happy to be under his guidance, as I know he has all of the test gear, attenuators and savvy on how to get the best from my equipment. The first test was checking the 3456 rig, which seemed to have some intermittent transmit problems. A possible problematic SMA or the TR relay might have been to blame—we found the amp putting out the usual 10 watts and found no obvious intermittent issues. Next was the test of the Toshiba amp which easily registered 30 watts output for a little less than 0dBm in. No sense in squeezing any more out of it, as the 40 watt rating is not significantly different and won't change any results from the rover.
Next we tested the 2304 amps—I have two—the first is the Spectrian single board amp and it gave us about 35 watts out for 1 watt in. Not the 80 watts it is supposed to give, but we decided not to fine tune the bias and moved on to the next amp, which was a 10dB amp that was easily driven by my 8W Kuhne amp to 80W. OK, time to put all that stuff back in the boxes and move on to the main event: the 432 amp.

The W6PQL 432 MHz amp has a single device that puts out 500W for 5 watts of drive. I spent many hours in the workshop this past winter assembling it onto a chassis, adding the output filtering, power connectors, control board and cooling. First instruction tells us to put a 5A fast-blow fuse in the 48VDC line and check the idling current. It's exactly 1 amp as advised. Next step is to drive with ½ watt and adjust the input cap for minimal SWR and maximum output. We completed this step using a 10W slug in the Bird on the input and the Telewave power meter in the 500W position. It's only measuring 50 watts,

…Lotta watts cont'd

and the specs tell us it should be almost 90 watts. We double-check the output power with another Bird meter, but it also shows 50W. Let's move to the final step, increase the drive and check the output. We move to 2.5W drive and find there is no current draw and no output. Heavens! What happened? There was no smoke, no bang or pop…just the hum of the cooling fans.

Thoughts flashed through my mind about having to get another unit. Dejected, we go through a check-list of power and connections, bias and keying. AHA!! The step we forgot was to replace the 5A fast-blow fuse with a 20A fuse. We removed the obviously blown culprit, and voila, we have a lot more power out with 2.5 watts and eventually 5 watts drive gives us 500W out.

The critical tuning step was adjustment of the input cap. The meter was easier to watch on the higher power settings.

I headed home with a good feeling of success, with thanks to Paul for his patience and guidance in testing and tuning these units. Now to install the higher power units in the rover, replace the TR relays, and get the 432 MHz amp to play a little EME.

73, Rick, K1DS

2304 Amp Checkout

Jon's White (Red) Elephant

Hello again Lenny
Attached is a photo of the contents of the "Red" box. In this box were such wondrous things, like a 100 foot tape measure (with the first foot missing), some copper RF gasket material, a handful of diodes, an inkjet cartridge refill kit, some carpenter's pencils, two torroids, a key chain, some sort of 11 Meter noisemaker, a wine bottle cork popper refill..and a booklight. My XYL liked the booklight!
Jon W2MC

Technical Topics de K3IUV

From a notice I received from the IEEE

No, this is not an April 1st story!

Introducing the Vacuum Transistor: A Device Made of Nothing. Move over traditional silicon, there's a new vacuum-channel transistor that could be replacing you. Jin-Woo Han and Meyya Meyyappan, researchers at the NASA Ames Research Center, explain how they married vacuum-tube technology and modern semiconductor-fabrication techniques to create this hybrid. It can also be made as small and as cheap as any solid-state device, which gives it a competitive edge. Although Han and Meyyappan say their research is still at an early stage, their prototype could operate at 460 gigahertz—roughly 10 times as fast as the best silicon transistor can manage.
More at **http://spectrum.ieee.org/semiconductors/devices/introducing-the-vacuum-transistor-a-device-made-of-nothing/?utm_source=techalert&utm_medium=email&utm_campaign=062614**

TOWER CLIMBING SCHOOL AT K3TUF'S

Seeing the need for more Packrat climbers in the general Philadelphia area two energetic members attended a tower climbing school at the qth of K3TUF on the last day of June. We needed to schedule the session early in the week so as to avoid the heat of the sun later in the week; temperatures were forecast to go above the 90 degree mark.

Classes actually started on Camelback with the first session focusing on the equipment for a safe climb. It is important to use a full body harness so that any fall arrest attachment will be made above the center of gravity keeping the person in an upright position in the event of any mishap.

For these sessions George and Michael (KA3WXV & KB1JEY) attended along with the support of Elliott, K3JJZ.

The second session began at 9 am and after some class work the instructor (K3TUF) and the students ascended to the tower for hands on training.

All aspects of safe climbing were covered along with tips for maintaining your strength and fortitude on a long project up on the tower.

Now that these members are prepared; be sure to say something to them about your next antenna / tower project; they are ready for action.

Thanks to K3JJZ for photos

902 MHz EME Trial

Hello Friends

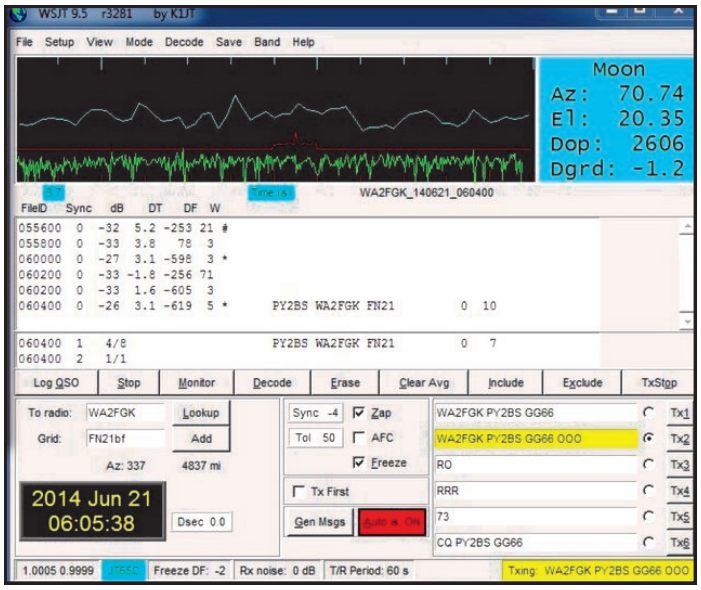
Had last night (6/20/14) a half QSO with Herb WA2FGK, at his moonrise. Herb used his terrestrial setup: **no elevation**, 400 watts, 120 feet of 1 5/8 hardline to 4 x 45 el loops. **No preamp** up top due to a cell tower located 1000 feet away throwing out much garbage on 903, he uses cavity filter to be able to operate even on 902 with a WD5AGO preamp at the shack.

Got two good decodes from him, at -26dB and -25dB, but my small signal, 200W sspa on JT, plus cable loss, some 150 W at feeder, was not received on his side.

Regardless, it was a great test, I was quite happy decoding his signal despite the local noise. **Thank you Herb !**

Looking forward to the upcoming test with Al K2UYH.

Bruce PY2BS



Thanks to Al, K2UYH for this report

High Power 6 Meter LPF Design

Following in the footsteps of K1WHS, who built a high power low pass filter for 6m here: **http://www.bigskyspaces.com/w7gj/50MHZLPF.pdf** I have built an easily duplicated high power low pass filter based on a design by YU7EF that will attenuate all harmonics over 60 dB:

http://www.bigskyspaces.com/w7gj/50MHZQROLPF.pdf

One of the most convenient things about this new filter is that it fits nicely into a standard commercially available enclosure ;-)

Enjoy!
GL and VY 73 Lance Collister, W7GJ

Thanks to N.E.W.S. for this design reference

"Why K2UYH was not at Camelback: He was meeting Marconi's daughter, Princess Elettra at the Sarnoff Museum.

The Pennsylvania Amateur Radio **Conference (PARC)**

Oct 4, 2014

The South Mountain Radio Amateurs (SMRA) of the Carlisle, PA area are pleased to announce a conference devoted to inspiring new technologies in our beloved hobby. This will be held at the Whispering Pines Lodge, north of Carlisle, PA 4 Oct 2014.

We have been able to schedule speakers who are outstanding in their specialty. The **fee is $9** for this one day event.

Agenda includes:

- Building High Quality VHF and UHF Antennas… yourself!
- Live demonstration of the latest HF Flex Radio software defined (SDR) transceiver.
- Working the World on the low power HF WSJT-X data mode
- A photo visit to an outstanding HF, VHF, UHF, microwave, contest station
- Automating Your HF/VHF Station logging and control of radios

Registration with payment processing and receipts is on the following SMRA Web site …..**http://n3twt.org/events/parc** (all lower case)

For program/technical questions not addressed above, please contact **John Jaminet, W3HMS**, at EMAIL: w3hms @aol.com.

DONATIONS PLEASE!!

We are currently soliciting donations of items for the Mid-Atlantic VHF Conference. If you or your employer has the availability of test gear, components, logo items, tools, antennas, radios, power supplies, cables, texts, gift certificates, computer related items, discs, software, or anything else that would be useful or pertinent to the hobby, please let me know and we can arrange shipping to my QTH or to the conference venue. I have several interesting microwave items that were sent to me from Reno, NV by our member **Randy, NR6CA**. Please look around and see what can be made available. All donors are given publicity at the conference. **Thanks, Rick, K1DS 215-284-5517**

New 24 GHz EME World Record

On 5 March 2014 Rex, VK7MO and Charlie, G3WDG extended the 24 GHz EME record to 17405 km using JT4f. The difficulty with long distance 24 GHz EME, as opposed to lower frequencies, is atmospheric absorption due mainly to water vapor. **Long distance necessarily means that the Moon's elevation is low at both ends and atmospheric absorption much highe**r. Both stations ran 10 watts and Rex used a 1.14 meter dish in a portable operation from Mt Wellington near Hobart Tasmania, while Charlie operated from home with a 3 meter dish. Rex and Charlie had made some **four unsuccessful attempts** on earlier occasions when the degradation and spreading were at a minimum. For the successful attempt they adopted a different strategy and looked for a time when the lunar declination gave **higher elevations** at each end to reduce atmospheric losses and also a longer common window to give more time for averaging the very weak signals. By Rex operating from Mt Wellington at 1270 meters this further reduced the amount of atmosphere at his end giving an estimated improvement of 2 dB over operating at sea level. Even so signals were marginal and with cloud cover much of the time it took over an hour to complete the QSO. The URL below is a video of a talk which Rex gave on how this QSO was achieved.

https://www.youtube.com/watch?v=XfReoQOWqUo

Thanks to AL, K2UYH for this report.

K2UYH FB EME with XVTR / Amp / Filter Borrowed from K1DS

(6/22/14) Had good results and no problem with stability. Because of the fear of rain, I had the rig consisting of a 100 W SSPA and AGO LNA in my shack with only the dual dipole feed at the dish. Despite the extra loss (~ 1dB), I easily found my echoes and QSO'd at 1311 VE6TA (549/559), 1321 VE4MA (449/559) for initial #3, 1342 PY2BS (15DB/17DB) on JT65C mixed initial #4* and SA and 1357 PY2BS (O/559) on CW #4. —-Al K2UYH

The Wayback Machine

Gleaned from the pages of
Cheese Bits, July 1964
(Vol. VII Nr. 5)
(Authors comments in *italics)*

Note: the Vol. VII summer issue of Cheese Bits was a combined issue for July and August. Here is a summary (nibble) of the second half designated Nr 5.

- Electrical Indicating Instruments (Meters). The title of the talk given by W3SAO, Frankie at the March meeting. W3CPT, Ken assembled notes and provided a detailed summary of the talk, with the following synopsis. Three basic types of meters are 1) Permanent magnet moving coil (D'Arsonval), 2) Moving Iron Vane, and 3) Electrodynamometer. Primary usage, limitations and precautions to be taken for each of the 3 types are explained in the summary. (*With limited availability at one time, these panel meters now bring little interest at the club auctions*). (*In passing, an interesting historical note. During WWII, the scarcity of meters led the US government to appeal to Hams to turn in their meters, to be used for military equipment*).
- Construction. W3IA, Tom provided a schematic and comments on a metering circuit for monitoring multiple transmitter functions. (*Used a D'Arsonval meter, calibrated shunts and a rotary switch*).
- ARRL Bulletin. An alert issued concerning the dangers caused by the failure of bypass capacitors in the ac input of equipment. Amateurs have been electrocuted or injured when such a bypass shorts, **since it can place the chassis at line voltage potential.** Easily prevented by using a common ground system for all equipment. It was also noted that an error in a QST article Aug 64, pg 53, inadvertently showed the white wire to the shield, and the green wire to the transformer. Readers were directed to "correct the circuit in your copy". (*Today, that might have led to a recall*?).
- Two Meter report. W3LHF, Dave notes stations in New England asking: "Where do the Packrats go between contests?" He paraphrased the old adage: "you can't work them if you can't hear them", as "you can't hear em if you ain't on!". (*Still a problem*!). He notes that W3NSD (*Wayne Green, editor and publisher of 73*) is on nightly from New Hampshire, together with K1IED/4 and W4VCC in VA, with "remarkable signals".
- **UHF.** K3IUV, Bert (*ye author*) reports that 30 members are now on 220; however, most activity comes on 221.4 from 10 stations nightly from 9:30 – 10:30. Others are urged to "turn the rigs on". Monday net calls average 14. DX being worked on SSB at low end. **432.** A number of stations heard nightly on SSB from Md to MA. Several recent tropo openings noted .

2-way taxicab rigs now available can easily be converted to give 50-watts on 432. **1296**. "All we have now are promises. K2HQL and WA2EMB near completion of their APX-6's. Many club members have these rigs in their garages, doing nothing. Let's get them done so I have another signal to listen to beside the TACAN stations in Willow Grove and Johnsville!". (*Note that the APX-6 was a modulated oscillator, surplus IFF unit. We used one for the pre-Rodanthe trial from SNJ – Long Island*). **Six Meters**. K3ACR, Rich reports sporadic-E openings, with the Bahamas and Guadeloupe worked frequently. West Coast openings gave several members a Washington State contact.

- Humor. In his inimitable style, K3JJZ, El, wrote an "Open Letter to XYL's" article. He reports on the difficulty of getting the XYL's to accept radio time for the Ham, while they take time for their own activities. The editor noted "Send all replies to Elliott, not me."!
- Reported that member W3PXT, Carmen won a $25 US savings Bond for his article submitted to QST for the 50th Anniversary Contest. Details, Pg 22, August 64 QST. (*How many remember the "Saving Stamps" we collected in booklets, to redeem for a "Saving Bond". I have samples of many in my collection. An example is shown here*).

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 K3IUV

Editors note: Extra thanks this month to Bert for doing the "Wayback Machine" twice. The first edition somehow found its way to /dev/nul without anyone knowing how it happened.

Strays: K3HS Looking for Newsletters

Harry Schools K3HS asks if anyone has the following newsletters ca. 1970's / '80s:
From Six Meter Int'l Radio Klub: **SMIRK Six Shooter**
From Sidewinders on Two: **SWOT Bulletin**
From Art Reis: **220 Notes**

Contact Harry at:
1832 South Limekiln Pike
Dresher, PA 19025

He is without Internet at the present time

More June Contest Pictures

More pictures from the June Contest, by Bob, N2SCJ can be downloaded from his temporary site at **http://n2scj.net/sites/default/files/n2scj/Pics.Zip**. The download is around 0.5 GB, so be patient, it will take awhile even with a broadband connection.

MID-ATLANTIC STATES VHF CONFERENCE SEPT 26-27-28

InnPlace Hotel, Bensalem, PA (soon to be a Holiday Inn)

Special Conf rate $79/night + Tax, includes light continental breakfast

>>>STILL ACCEPTING PAPERS AND PRESENTATIONS<<<

Early Bird Registration ($40) now available on-line at

http://dataandwireless.com/packrat/2014_vhf_registration.php

Fri Sept 26-Hospitality and table-top selling 7P-11P

Sat Sept 27- Conference 8A-5P Pizza lunch and snacks included for paid registrants

Technical equipment testing by **Rohde & Schwarz**

Antenna range testing--please let us know what you are bringing.

Saturday evening buffet banquet and door prizes* $40

Sun Sept 28-8A-11A mini-outdoor flea market

TENTATIVE SPEAKERS & TOPICS:

K3RWR-Quit Jamming Yourself and Let the Weak Signals Through!

K3TUF-Look What I can do with my SDR

K1JT-Optimized Small-Station EME: X-pol at 432 MHz

K2UYH- Getting started on 1296MHz EME

N1JEZ- Linearization of Your Transmitted Signal

W1GHZ-Comb-line filters for VHF and Up

ARRL LAB SPEAKER-Dealing With Noise

K2WB- The W2EA Contest station- History & operations

Group--Lumps and Bumps: What happened and how I fixed and prevent a recurrence

WA3GFZ- Station Automation

WB2RVX- Applied Station Automation for VHF Contesting

Check the web page for updates and speaker list www.packratvhf.com

Questions or paper & presentation submissions to rick1ds@hotmail.com

or call Rick 215-284-5517

*You must be registered and paid for both conference and banquet to be eligible for door prizes

Events

For inclusion, please direct event notices to the editor.

ARRL August UHF Contest - August 2-3, 2014. Begins 1800 UTC Saturday, ends 1800 UTC Sunday . Bands 222 MHz and up. Seven submission categories. See http://www.arrl.org/august-uhf for additional details.

10 GHz and Up (round 1) Contest - August 16-17, 2014. Work as many amateur stations in as many different locations as possible on bands from 10-GHz through Light. Amateurs are encouraged to operate from more than one location during this event. See http://www.arrl.org/10-ghz-up for additional details.

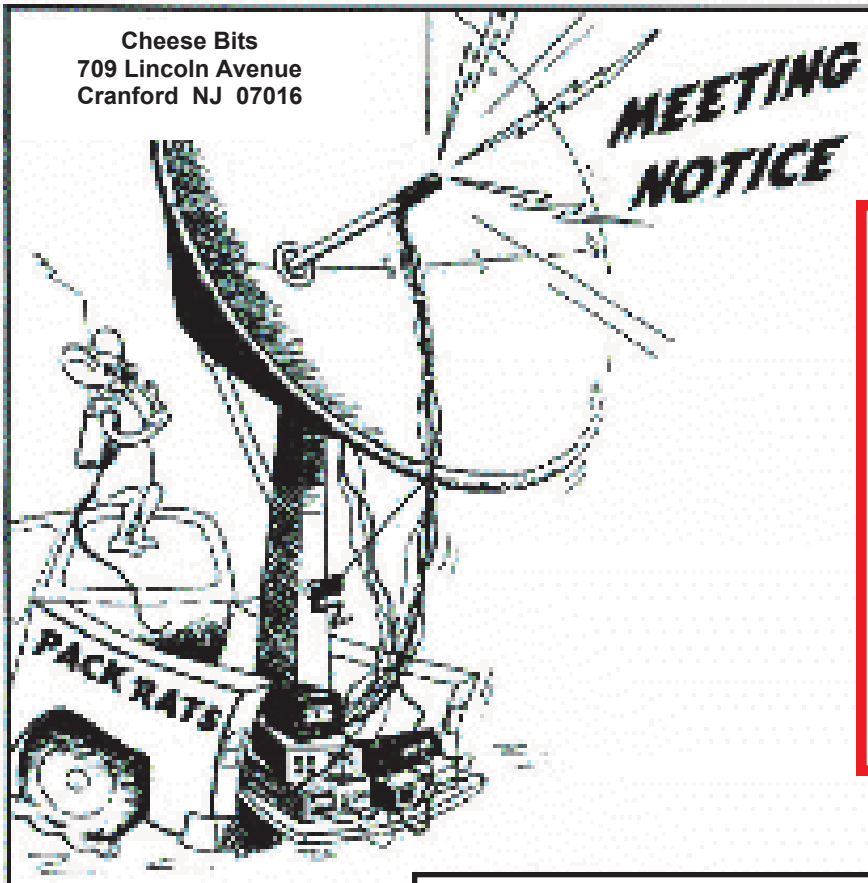
September VHF QSO Party - Contest September 13-15, 2014. Details to follow.

10 GHz and Up (round 2) Contest - September 20-21, 2014. Details to follow.

EME Contest 2.3 GHz & Up Contest - October 11-12, 2014. Details to follow.

EME Contest 6M - 23 cm Contest - November 8-9, 2014. Details to follow.

Cheese Bits
709 Lincoln Avenue
Cranford NJ 07016



FIRST CLASS

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