



CHEESE BITS

W3CCX
CLUB MEMORIAL CALL

ARRL
Affiliated
Club



Volume LVI

June 2015

Number 6

PREZ
SEZ:

June is now upon us and we are about to experience the highlight of our external activities for the year. The **ARRL June VHF Contest** brings many new vistas for us.

First of all we are making a departure from the traditional truck rental for use as operating enclosures. We have our own trailer now which doubles both as a storage unit and operating shack.

It will house all bands except 6 and 2 meters. Those bands (6 & 2) will be housed in the 'rebel rats' travel trailer. We will be erecting 6 towers which consist of a dedicated tower for each of the lower four bands and a 902/1296 tower and finally, the microwave tower with all the rest (2304-24192).

Something else new is that each of the trailers will be environmentally controlled, a welcome addition, since you never know what the weather will be like on Camelback Mountain.

The next major change for the June contest is the use of assistance. We have made special arrangements to have internet access for the contest and will be watching the spotting networks and spotting the stations we work.

I have noticed that fewer folks are setting up schedules. I've even heard about rovers who will not hand out a schedule, but instead will direct all takers to see their spots on the cluster. This is great. We are sure hoping for greater and enhanced

activity levels this year due to the assistance rules, and the enhanced propagation that has been promised. (I can't seem to remember who promised, but I'm sure I heard it somewhere :-)

Nevertheless, we are all in high anticipation to see how the assistance will work this first time out of the gate.

If you can't make it to the mountain, (and I sure hope you will try), be sure and get on the air to experience the activity that only comes on that weekend in June. Get your logger connected to the internet and attach to one of the cluster nodes and watch the traffic during the contest; then every time you catch W3CCX on the air, spot us, it will help us get more contacts.

Also if you can't make the mountain, you will be missing some mighty fine baking. I am the recipient of the fine smells of fresh homemade fruit pies as they bake, not to mention the bowls before they get cleaned. We are going to have **good food** on the mountain.

Six meters has started to give some fine propagation to EU and to the western part of the continental US, so I have high hopes for the second weekend in June.

Timing for the event begins at noon in Tannersville. We meet at the Village Deli and usually head up to the top of the summit around 1 PM. We can use all the help we can get.

Pack Rats **CHEESE BITS** is a monthly publication of the
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PACKRAT 222 MHz REPEATER - W3CCX/R

222.98/224.58 MHz (PL 136.5) Hilltown, PA

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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 / TUESDAY NIGHT NETS

VHF/UHF Monday:

<u>TIME</u>	<u>FREQUENCY</u>	<u>NET CONTROL</u>
7:30 PM	50.145 MHz	N3RG FM29ki, 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

Microwave Tuesday:

7:30—8:30PM Coordinate QSO's on 144.260 with net controllers, for all Microwave bands you'd like to work. Also setup Q's at w4dex.com/uhfqso

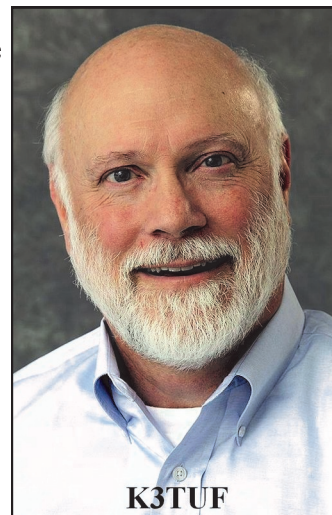
Visit the Mt Airy VHF Radio Club at: www.packratvhf.com or www.w3ccx.com

Last month was the end of the Spring Sprints. We had the Microwave and the Six Meter sprint. Sure hope you had a good time with it, I worked many stations during the Six Meter sprint, but was otherwise occupied for the microwave sprint.

Dayton is over for 2015 and it was a good one. Many of the Packrats attended and it's such a large venue that we didn't get to see everyone. Next year promises to be even better with venue improvements coming this year.

Don't forget that the registration page for the Mid-Atlantic VHF Conference is up and running and taking registrations. You can also check the list of who has already registered. Please take the time and register early, it will be another information and fun packed event. So clear your schedule for the contest weekend, and lets work on **LOTS** of bands,

Phil, K3TUF



MAY MEETING



Phil started introductions and the question to answer Yes/No was: Have you ever been to the Dayton Hamfest? The majority of members have been there at least once.



Bob, WA3PZO gave a presentation on the history of the 13 Colonies on-air event --- using all bands including VHF this year, and the certificate is issued for a log showing QSOs with the 13 original US Colonies. There is also going to be 2 **special** event stations, one from England and one from the Philly area. He asked for participation, both as a colony station (you have to sign up and also as a seeker of QSOs with your home call to work the 13 colonies stations with special call signs during this event and get a colorful certificate. No QSLs needed, just send in a log.



The regular business meeting was next with approval of minutes, treasurer's report (\$10K +/-), and report on the **VHF Conference** imploring members to sign-up on-line and to solicit door prizes. We also hope to enhance the Sunday AM flea market with more member participation.

Next was a round-robin among those who went to Dayton to discuss their experience and unique finds. Most made the rounds of the 500+ vendor booths and the acres of flea markets, while others concentrated on the sessions like Contest University and various other forums.



Tnx K3JJZ for pix and K1DS for captions

A HOMEBREW REFLOW OVEN — PART 2

By Roger W3SZ

This month, we discuss the specific requirements for the major components (oven, heating elements, controller and thermocouple). In July we'll describe the construction of the oven, the software used to drive it and the solder quality resulting from using the oven. Note: Look for footnotes at the end of part 3 in July.

Oven and Heating Elements. The goal when building a reflow oven is to have an even heat distribution within the oven that follows as closely as possible the recommended reflow profile for the solder paste being used, so that one can avoid the problems described last month. These occur when the profile is not closely followed.

To accurately follow the profile the oven needs to have adequate heat generation to be able to ramp up the temperature rapidly enough to follow the suggested temperature vs. time curve during the preheat and reflow stages. Furthermore, the oven needs to have an even distribution of temperature, to avoid the situation where some portions of the board are exposed to excessive temperatures while other portions are inadequately heated. Additionally, the oven must not have excessive thermal inertia, which would prevent an appropriate rate of cooling during the cooling stage.

Size is an important consideration. Too small and you won't be able to fit your project boards into the oven. But if the oven is too large, there is more potential for uneven heat distribution, and for inadequate temperature ramp-up. Most toaster ovens use infrared heating elements, and these are the preferred heating elements. Single-element ovens are problematic, as they tend to lead to very uneven temperature distribution, leading to component damage and inadequate solder joints. Dual element ovens, with one element at the top of the oven and the second element below, provide more even temperature distribution. The toaster oven that I chose to use for this project is a dual element oven. Quad element ovens potentially provide even more uniform temperature distribution within the oven. In general quad element ovens will be more expensive than dual element ovens, and I have had good results with the dual element oven I chose.

The next issue is how much heating power is needed to achieve adequate results. Based on what I have seen on the web, it appears that 1300-1500 watts is sufficient to achieve a good temperature profile. My oven is rated at 1300 watts and provides excellent performance.

The final considerations are whether or not to get an oven with a fan, and whether or not to add a fan to an oven that doesn't have one. Having a fan might reduce temperature gradients within the oven cavity. But if it causes cooler outside air to be sucked into the oven cavity, it might exacerbate temperature gradients rather than reducing them. Additionally, if the fan produces too much air movement, it might cause components or boards to shift position, which would be undesirable. Finally, having to control both a fan and the heating elements might complicate the control circuits needed for this project, because one might want separate control over the fan and

the heating elements. I chose to use an oven without a fan, and to not add a fan.

Controller. The PID²⁸ (Proportional-Integral-Derivative) controller is the heart of this project. A PID controller is a control loop feedback mechanism that attempts to achieve the desired output (in this case temperature) based on three factors: (1) the difference of the current variable value (in this case temperature) from the desired result (the proportional term), the integral of past errors (differences of the measured temperature from the desired temperature) over time (the integral term), and a prediction of future error, using the rate of change of the error (the derivative term).

Commercial/industrial PIDs are easily obtainable. I chose to use the osPID for this project rather than a commercial/industrial unit because of the osPID's versatility. The osPID uses an Arduino Uno or Duemilanove compatible device along with Brett Beauregard's PID Library to create a fully functional PID. Because the osPID is based on the Arduino and open source software, it is extendible and modifiable in a way that a commercial/industrial PID cannot be.

During usual operation of the osPID with the provided software, the user has full control over the three typical PID tuning parameters K_p , K_i , and K_d which respectively control the magnitude of the effect of the proportional, integral, and derivative error values on the output of the PID. The osPID consists of a main board which contains an Arduino-compatible CPU as well as the LCD display, USB jack, and four input buttons on its front side and two edge connectors for input and output cards on its back side. The input card will receive temperature input from either a thermistor or a type K thermocouple sensor. The output card has two relay outputs and one digital output for connecting an external solid state relay (SSR). Pictures of the osPID with and without its covers are below in Illustration 2.

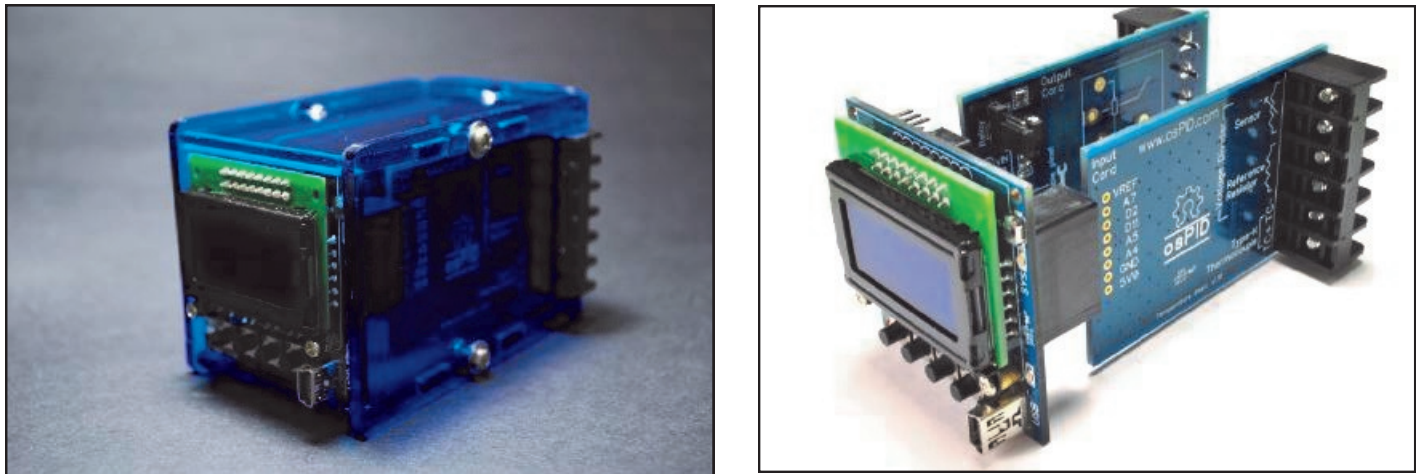


Illustration 2: osPID with (left) and without (right) covers

The osPID onboard firmware permits it to be run without connection to a computer once it has been programmed with the desired solder profile and tuning parameters. However, its full power is realized when it is connected to a computer during operation and the actual temperature vs time curve can be watched in real time, and saved if desired.

The osPID front-end software allows the user to define the temperature profile, as well as enter values for K_p , K_i , and K_d . In addition, as noted above, it allows the user to watch the actual temperature curve in real time, and to save the temperature curve for reference/future analysis if desired.

Thermocouple. Actual temperature in the reflow oven is measured by the type K thermocouple. The sensor end of the thermocouple is placed adjacent to the circuit board in the oven cavity, and the leads at the other end

are connected to the appropriate ports on the osPID. Sparkfun, the supplier of the thermocouple that I used for this project, suggests that the thermocouple bead be clipped to the PC board to avoid overheating the components on the board due to a possible difference in air temperature and board temperature during the reflow cycle²⁹

SSR. The solid state relay (SSR) is driven by the osPID. The relay used in this project is specified to handle 40 amps. I chose to use an SSR rather than a mechanical relay due to the well-known advantages of the SSR, which include (but are not limited to) faster switching time, acoustically silent operation, greater lifetime, and clean bounceless operation³⁰.

Next month in the final installment, we describe the construction of the oven and describe its software. In addition, results from operating the oven are discussed.

WA3QPX 2M DXCC

Paul, WA3QPX reports receiving certificate #141 May 22nd for 2M DXCC!!! Congratulations Paul!

Feedback from fellow 'Rats:

Wow! Congratulations! -- Griff ne3i

Congratulations Paul! -- 73, **Bob W2SJ**

You da man, Paul! -- Joe, K1JT

Paul, Congratulations for a job well done!
Also, thanks for all the help you're given me and others with our EME setups. Best 73 de,
N3RG - Ray

Great Job Paul! -- Phil K3TUF

That is great Paul! I know that is a lot of work, not only making the contacts but getting confirmation on them all. I started over again when I moved, and have not been very active lately, but maybe I will get there someday too. Congrats and best wishes for DXCC on a new band now. -- 73, **Russ K2TXB**

K2UYH 23Cm DXCC

As reported in the June "432 And Above" EME Newsletter, Packrat Al Katz achieved DXCC on 1296 MHz. Congratulations Al!

K2UYH : alkatz@tcnj.edu

May was very special in a number of ways. One of the biggest was completing 1296 DXCC thanks to the Athleticoteam. I worked on 11 May at 0720 DC9UP (12DB/15DB), 0744 RA3DA (11DB/5DB), 0751 DG5CST (11DB/5DB) and 0840 G4FUF (24DB/10DB) for mixed initial #495* - all were on JT65C, on 12 May, the big day, at 0757 7Q7EME (21DB/23DB) for #496* and DXCC

Pre-Camelback Trailer Pix

Phil, K3TUF sent along the following pix on June 8th.



Mid Atlantic States VHF Conference

The Mid-Atlantic States VHF Conference will be held on the weekend of October 2-4, 2015 at the Holiday Inn Bensalem / Philadelphia 3327 Street Road, Bensalem, PA

Registration now open on-line and by mail. Go to the Packrat Website PACKRATVHF.COM and click on the VHF Conference link for all information. **Make hotel reservations** at 215-639-9100 for Special VHF Conference rate \$79+tax/nite til Sept 4, OR USE: http://dataandwireless.com/packrat/2015_vhf_registration.php

EARLY BIRD CONFERENCE REGISTRATION \$40 (TIL SEPT 20)
EARLY BIRD BANQUET \$40 (TIL SEPT 20)

Fri eve: Hospitality and table-top indoor selling

Saturday: Conference 8a-5p registration includes pizza lunch and snacks and proceedings disc

Saturday: 10a-4p Technical test bench with Greg Bonaguide of Rohde & Schwarz

Saturday eve: Banquet, speaker, door-prizes*

Sunday AM: limited outdoor flea-market free to all.

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

ADDITIONAL PAPERS STILL SOLICITED FOR PROCEEDINGS

Contact Rick, K1DS at 215-284-5517 or rick1ds@hotmail.com

Tentative Speakers and topics:

Joe Taylor	K1JT	New VHF & Up Features of WSJT-X
Roger Rehr	W3SZ	Open HPSDR for VHF/UHF/uW Operating
Phil Theis	K3TUF	Radio Server for VHF/UHF/uW Contesting
Chris Wilson	N0CSW	Yaesu Fusion System Innovations
Rob Renaud	K3RWR	SDR and Noise Reduction
John Jaminet	W3HMS	Roving in the Pennsylvania Boondocks
Mario Filippi	N2HUN	uWave Satellites
Al Katz	K2UYH	Devilish Doppler
Joe Horanzy	AA3JH	Talking to the Astronauts
Michael Davis	KB1JEY	Painful Tower Lessons
Al Waller	K3TKJ	Six Meter Magnificence
George Heron	N2APB	Scalar Network Analyzer
Gary Hitchner	WA2OMY	New Packrat Beacons (Can You Hear Me Now?)
Steve Simons	W1SMS	RF Safety for Radio Amateurs

Cabrillo, Or, who was that masked man, and why was a file format named after him?

by K3IUV, Bert

Did you ever wonder why the Cabrillo file format is called “The Cabrillo File Format”? I did, and here is probably more than you wanted to know about it.

Juan Rodríguez Cabrillo, birth unknown, death – January 3, 1543) was a Portuguese explorer noted for his exploration of the west coast of North America on behalf of the Spanish Empire. Cabrillo was the first European explorer to navigate the coast of present day California in the United States.

His discoveries went largely unnoticed at the time, so none of his place names were permanently adopted. Despite this, Cabrillo is now remembered as the first European to travel the California coast, and many parks, schools, buildings and streets in California bear his name. There are also bridges and clubs in CA that bear his name.

In the state of California, September 28 is officially "Cabrillo Day". (Ref: California Government Code, [Section 6708](#))

In 1992, the United States Postal Service issued a 29¢ stamp in honor of Cabrillo. A copy of this stamp from my collection is shown for your interest.

The **Cabrillo Specification** was originally developed by Trey Garlough, N5KO in 1999, to provide a method for consistent data formatting that sponsors could use in the submission of contest logs. Contest sponsors including CQ, ARRL, and DARC quickly supported the idea and adopted the standard. Logging program authors quickly included the format in their software.

When Trey created the standard, he needed a name for it. Trey lived in an area of California where lots of things carry the Cabrillo name. E.g., Cabrillo College, Cabrillo Street, etc. He picked it as an interesting name and it stuck. Nothing more mysterious than that!

The WWROF (World Wide Radio Operators Foundation) administers the Cabrillo Specification on behalf of the contesting community.

My thanks to Randy, K5ZD who supplied me with some of this information.



13 Colonies Special Event VHF Operators Needed

Greetings Members,

Who lives in the 5 county Philadelphia area and can get on the air?

We need operators who live in Philadelphia, Delaware, Chester, Montgomery and Bucks Counties. Please get back to me with your availability, even if you just get on one evening.

73,
Phil K3TUF

You can also go to

https://docs.google.com/spreadsheets/d/1giaS5GuEOwK1C9sbhGvCHmzevmsjg_M25Dr2P6Sz2QQ/edit?pli=1#gid=0 to sign up.

Additional details from Bob, WA3PZO at WM3PEN@aol.com who's running the show.

DOOR PRiZE SOLiCiTATiON

It's never too early to ask your boss and suppliers for contributions for the raffles and door prizes at our VHF Conference. I have started the collection here. We have some donations of manuals from ARRL, a few items left over from last year, and some items from the W3VIR estate. We also have a few items from NR6CA that can be used for door prizes. Whatever you can provide will be useful. If you don't ask, we don't receive. Old test equipment, logowear, coffee cups, travel mugs, cables, connectors, parts over-runs, obsolete stock, tools, radios, antennas, electronic parts, etc. Let me know what you can get your hands on. **This is one of the highlights of the conference.**

TNX, Rick, K1DS

CENTRAL STATES VHF CONFERENCE

Central States VHF Society is pleased to announce that our Annual Conference for 2015 will be held in the Denver Colorado Metro area between Thursday July 23rd and Sunday July 26th. Our convention site is the Denver Marriott Westminster; the venue is now available for booking. Please plan on booking your vacation around the conference .

The conference will feature the traditional activities, Banquet, Luncheons and hospitality suites, technical programs, noise figure measurement, antenna range, Rover vehicle show and tell. Our Saturday evening banquet speaker is Rick Roderick K5UR First Vice President of ARRL and an avid VHFer. We have a wide variety of activities available along the Front Range of Colorado and will be offering a choice of side trips designed to entertain the entire family. Operating opportunities under consideration include operating from the Rocky Mountain Ham Radio HF remote base station in Pueblo, microwave operating from local mountain tops and the chance to score a microwave VUCC in a weekend! WE will have introductory programs geared to newcomers to weak signal operation on the VHF+ bands that will be promoted locally and designed to encourage younger hams to get involved in DX'ing and contesting.

We are currently soliciting papers, presentations, and Poster displays for the 49th Annual CSVHFS Conference. Our deadline for receiving papers prior to getting them to ARRL for publishing is April 22, Contact program chairman John Maxwell W0VG (w0vg@arrl.net) for info.

Conference registration, as well as a link to the conference venue for bookings, is now available now at <http://2015.csvhfs.org/> Please visit the site if you need any other additional information

73 Doug K2AD Chairman,

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

(Nibbles from June 1965. Vol. VIII # 3)
de Bert, K3IUUV (*author's comments in italics*)

- “**Our Prez Sez**”. Prez K3GAS, Doc, said “Get ready for the June contest at **Hilltown**. It will be a weekend of fun for all participants”. (*See, even 50 years ago, we were “having fun”*). He included a reminder to attend the June meeting when elections will be held. “Your vote is a privilege you should exercise. It will reflect how you want your club to run. Missing this meeting without a valid reason will indicate a lack of interest on your part”. (*Still true today! C U all at the meeting?*)
- **ARRL Bulletin Nr. 5**, 5/13/65. All amateur individuals, clubs and groups are invited to participate in the annual Field Day on June 25 and 27. This exercise allows testing of your emergency equipment. (*Still true*).
- **ARRL Bulletin Nr. 6**, 5/24/65. The 1965 ARRL Merit Award will be presented to **Project Oscar**, in recognition of Oscar 3. Congratulations offered to the ITU (International Telecommunications Union) for its Hundredth Anniversary (1865 – 1965, **hard to believe?** *The ITU was founded in Paris in 1865 as the International Telegraph Union. It took its present name in 1934, and in 1947 became a specialized agency of the United Nations.*).

- **K.U.I.** by W3HKZ, Ed (SK). Ed wrote a tongue-in-cheek article about the law of R.A.T. Similar to Murphy’s law it explains outcomes opposite to the desired result. (Read the full article in the issue found on W3CCX.com).
- **Did You Know** (tidbits picked up by Helen). \$1.00 to the ARRL will get you a copy of “Fifty Years of ARRL”. (*Can we now get “100 years of ARRL” for a buck?*). A note from Member W5NFD: George reported a sensational opening on 220 from his QTH in Houston to FL (*George worked for Philco at the time, setting up the Mission Control Center in Houston*). He reported a lot of activity from the NASA radio club, but very little 6-meter activity due to TVI (*our nemesis at the time*).
- **Another** blurb about the “Packrat Award”, which was wallpaper for working a certain number of Rats. (*Might be a good idea to resume, to foster activity? Hint hint.*)
- **Full page** announcement for the 10th annual Packrat picnic at Fort Washington State Park. Gifts, Games Soda and Fun for all. \$1.00 per family at the gate.
- **FCC Public Notice-8**, 5/4/1965. The first permit for operation of an alien’s amateur station in the US was issued to Costa Rican operator TI2MAG who is now in the US. This was issued under Public Law 88-313 which was enacted in 1964.

- **Band reports.** None included. (*Helen published on time, as a reminder for members to “get their articles in early”.*)
- **New Products of Interest**, by W3NSI, Lynn. Eddystone of England announced a 10-transistor, 5-band communication receiver. Front panel tuning uses a #898 dial having 55 turns to tune each range. This does make tuning the 10, 15 and 20 meter bands a little difficult (*an understatement!!*). Price \$215. RCA announced the 8627 Nuvisor (**Michael – take note.**) which will provide a power out of **1.4 watts at 1 GHz.**
- **Swap & Shoppe.** This monthly column by W3ZRR, Ray (SK) listed “for sale” and “wanted” items for members. This month’s offerings included an R-48 receiver and a “Barry” rig for the club 221.4 intercom frequency. (*A reminder that most of the members kept a squelched rig on the air at all times, making it easy to pass news or reach someone. What our repeater can do now, but no one is using it!!*).
- **Technical article.** A schematic and parts list gave details on building a **25 watt plate modulator** (AM), operating from a 12-volt supply. **Intended for mobile use**, it used 4 transistors and a few Thordarson transformers.

Six sheets, double-sided, heavy stock, legal size. Postage still 4-cents.

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

Grapeful Microwaves

High power 13 cm microwaves can be surprisingly destructive. Especially if you’re a 1/2 wavelength grape. In fact you’d be capable of making a high voltage arc including at least some plasma.

See the You Tube demonstration at <https://www.youtube.com/watch?v=0i2lhO3bSjQ>

An excellent follow-up is at the Stack Exchange Physics page: <http://physics.stackexchange.com/questions/37836/why-do-grapes-in-a-microwave-oven-produce-plasma?newsletter=1&nlcode=268864|3e3d>

And an explanation from the Physics Department at University of Illinois can be found at <https://van.physics.illinois.edu/qa/listing.php?id=818>

Legally Hacking WiFi

From an article in "Electronic Design", magazine reported by K3IUUV, Bert:

Hams are apparently trying to hack Wi-Fi routers for two-way communications. Hams are allowed to operate in the 2390 to 2450 MHz range, which overlaps with the 2400 to 2485 MHz Wi-Fi band.

This apparently requires some trickery to get the ICs to find a channel to avoid interference to hot spots. But it is happening and some suspect that unlicensed hackers are playing around with this, too.

2016 EME Conf Web Page

No real info yet, but there is a page where you can enter your name and call to get info when it is available.

<http://www.eme2016.org/>

--Rick, K1DS

AA3C Ham Radio Career

The May issue of "QRZ News" from SPARC (Southern Pennsylvania Radio Club) has a very nice article on pages 6-10 by Jim AA3C (K3ITG) (SK) about his early radio career. Well worth a look. Write George W3FEY (w3fey@verizon.net) for a pdf of the newsletter.

Events

For inclusion, please direct event notices to the editor.

ARRL VHF+ Contest - June 13—15, 2015. "The Big One at Camelback, PA". Info at the next meetings and at <http://www.arrl.org/june-vhf> Plan on participating from Big Pocono Park, Camelback PA or your home QTH.

EPA Section Convention and Firecracker Hamfest - July 4, 2015. Harrisburg, PA. Details at <http://www.arrl.org/hamfests/eastern-pennsylvania-section-convention-firecracker-hamfest-2>

Murgas Hamfest and Computerfest - July 5, 2015. Plains, PA. Details at <http://www.arrl.org/hamfests/murgas-hamfest-and-computerfest-2>

Valley Forge Hamfest - July 11, 2015. Kimberton, PA. Details at <http://www.arrl.org/hamfests/valley-forge-hamfest-3>

CQ Worldwide VHF Contest - Planned July 18-19, 2015. Details to follow.

Central States VHF Conference — July 23 - 26, 2015. See description in this issue of Cheese Bits and <http://2015.csvhfs.org/>

ARRL August UHF Contest - August 1-2, 2015. Details at <http://www.arrl.org/august-uhf>

ARRL August UHF Contest Round 1 - August 15-16, 2015. Details at <http://www.arrl.org/10-ghz-up>

VHF Fall Sprints - TBA

2015 Eastern VHF+ Conference Proceedings Available

A reflector email dated 5/19 identified the procedure for ordering the CD(s) for the referenced conference. I ordered the CDs for both the 2015 and 2014 conferences. They arrived within 5 days. A real treat to look at some of the presentations. A number of contributions from Packrats (K3TUF, K1SMS, ..) are included.

The N6NB (Wayne Overbeck) presentation on 50 years of roving includes a photo of Rick, K1DS operating in his rover. If you haven't already ordered a copy, I recommend you do. A few bucks well spent.

-- Bert, K3IUUV

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...Events cont'd

EME 2.3 GHz and Up Contest - September 5-6, 2015. Details at <http://www.arrl.org/eme-contest>

ARRL September VHF Contest - September 12-14, 2015. Details at <http://www.arrl.org/september-vhf>

ARRL August UHF Contest Round 2 - September 19-20, 2015. Details at <http://www.arrl.org/10-ghz-up>

RF Hill ARC Hamfest - October 18, 2015. Sellersville PA. Details at <http://www.arrl.org/hamfests/39th-annual-rf-hill-arc-hamfest>

Mid-Atlantic States VHF Conference - October 2-4, 2015. Currently soliciting papers. Details to follow.

ARRL EME 50MHz - 1296 MHz Contest - Round 1 October 31 - November 1, 2015.
Round 2 November 28 - 29, 2015. Details at <http://www.arrl.org/eme-contest>

January VHF SS - Contest - January 30-February 1, 2016. Details to follow.

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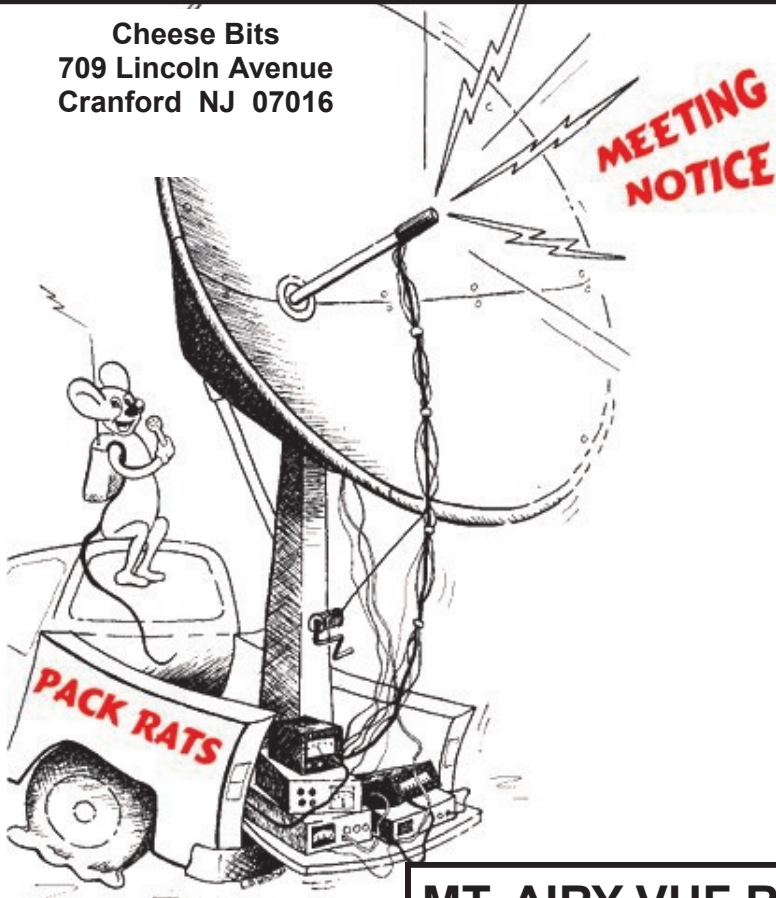
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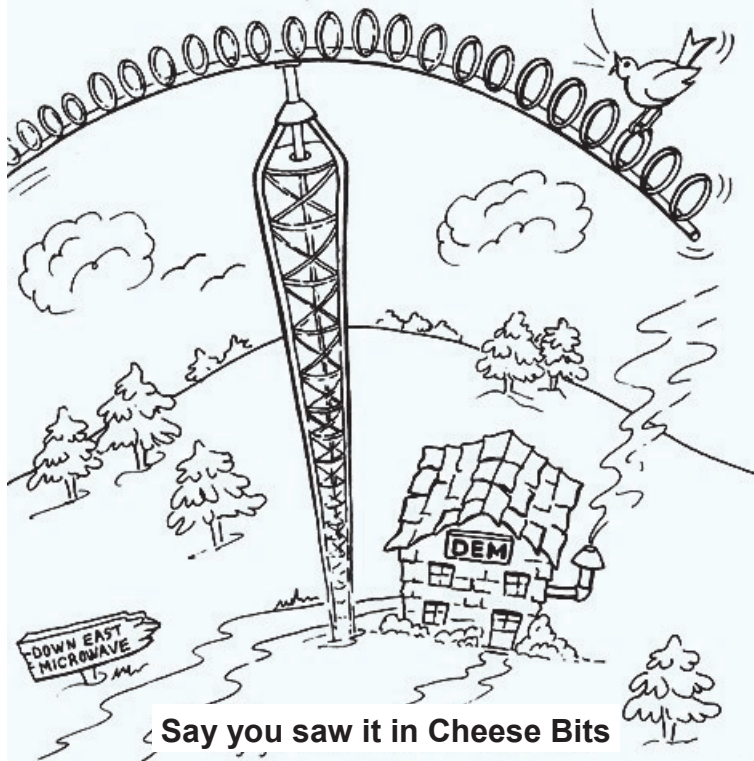
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