



CHEESE BITS

W3CCX
CLUB MEMORIAL CALL

ARRL
Affiliated
Club



Volume LX

June 2019

Number 6

PREZ
SEZ:

I'd like to welcome our newest Packrat to the club, Phillip Isard, WF3W. Phil started out right by spending the entire weekend learning and helping out on Camelback!

I want to thank all the Packrats who looked for and worked us on Camelback this year. I also want to thank all the Packrats who helped us get ready with planning, assembling and testing the equipment before it went to the mountain. We operated out of two air conditioned areas, the club trailer and a great new addition this year, Nick's van. The van was used for 6 and 2 meters and the Packrat trailer for 222/432 and all the micros. So remember when you think about if you should come up next year - great equipment, great location and air conditioned operating positions! This June we had some new faces to help set up and take down the equipment which makes it easier on the whole gang and it was much appreciated. Our tower specialist (Nick) has been looking at ways to decrease setup time and effort. This year we had a military surplus "rocket launcher" tower for the 6 meter station. So we are looking for more. This worked out well and is easier on us older guys. Al Wells KB3SIG and Ben Kelsall WA3RLT made a 18.3 mile LASER contact while on Camelback between grids FN21 and FN20. Congratulations guys! Al should be proud of the research, design and construction that went into the pair of LASER transceivers he constructed

and brought to the field.

Food was a little different (a lot different - HI). We had "Take out" for all meals except Sunday night which was Hot Dogs and Hamburgers on the grill. Meals might have been considered "junk food" but were a change of pace for many of us. The weather was great this year until near the end. We started the tear down late Sunday to avoid the predicted rain early Monday.

Were there problems this year? Yes, but plans are already afoot to work out the kinks and make next year even more successful! Thanks to all who came out this year whether it was to help set up/tear down, operate or help the effort in any way.

We are looking for Band Captains for 902/1295 and the Micros for next year. Ask me about these positions.

On Field day "Team VHF" (some Packrats and friends) will join the WARC club at Our Lady of Czestochowa by adding a 6 and 2 meter station to the mix. We will be looking for fellow Packrats so whether it's Saturday in the afternoon, late in the evening, or early Sunday morning, try to work us. If you're close by and can find some time stop in and say hi, please do. We can find you a spot at the operating table and a cold soda. We'll have a K3S on 6 and an FT847 on 2.

The White Elephant Sale will again be held at the QTH of Bruce, WA3YUE on July 18th, our normal Thursday meeting night. Come about

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PACKRAT BEACONS - W3CCX/B

FM29jw Philadelphia, PA
50.080 144.300 222.062 432.290 903.072 903.3 1296.264 2304.3
3456.200 5760.3 10,368.034 10,368.3 MHz (red = temporarily off the
air see Packrat web page for details)

MONDAY / TUESDAY NIGHT NETS

VHF/UHF Monday:

TIME	FREQUENCY	NET CONTROL
7:00 PM	224.58R MHz	WR3P FN20kb Ralph
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
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

7 pm to check out the tables and plan your bidding strategy. There will be hoagies and refreshments. This is always a fun night



The annual Packrat Picnic will be at Michael's (KB1JEY) QTH on Saturday, August 10th at 2 pm. Rain date is Sunday, the next day. Bring your significant other, the kids, and a covered dish. Hot dogs and hamburgers will be supplied by the club. Let Michael know your coming and what dish you would like to bring. Don't forget Michael has a pool, so bring your swim suit too!

There's a good Hamfest in Sussex in mid July. It's a bit of a drive but it's one of the better ones for both size and selection. There's usually a dozen or more Packrats that make it. Sussex Hamfest July 14, 2019 "Rain or Shine" at the Sussex County Fair Grounds 37 Plains Rd. Augusta, NJ 07822

Two great contests, the August and the September VHF contests are just around the corner. They're only 24 hours long and lots of fun. In September W2EA will be operating from High Knob in the Poconos. They will be on all bands from 6 through 10 GHz. Be sure to work them and remember the W2EA score goes toward the overall Packrat score for that contest!

Well, now it's time to repair or improve all the equipment we took to Camelback. We're planning several trips this fall (September) to sort out the towers and antennas we need next year.

Don't forget your work bench, have some fun, learn more.

Build something!
73, George KA3WXV

From the Editor

Prez Sez arrived very late this month. Since we're closer to the end of the month than the start, I'm abridging Cheese Bits (a little) for June. Have no fear, the remaining material (including some stunning pictures from Camelback) will show up in subsequent Cheese Bits.

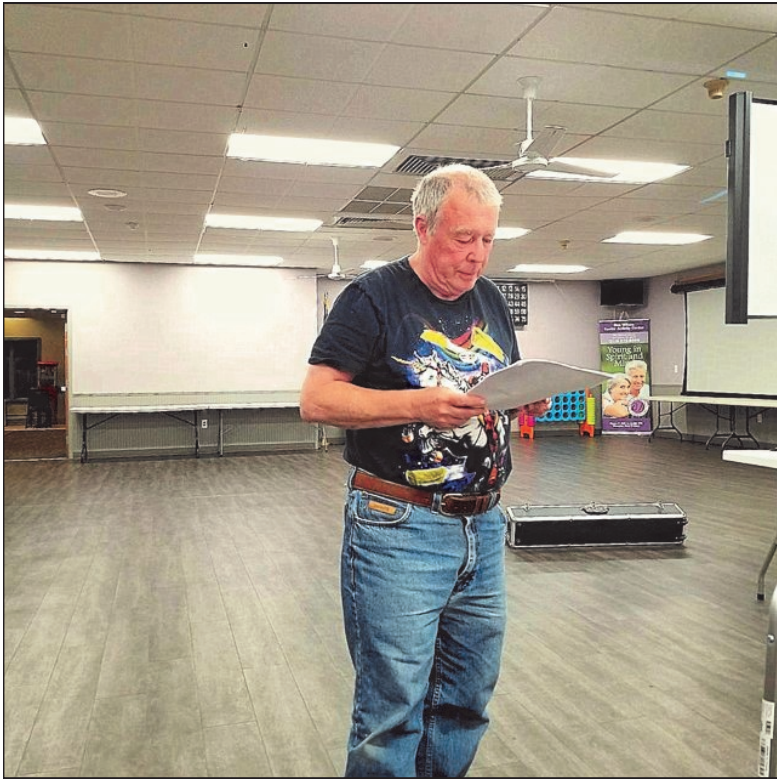
73, Lenny

May Meeting Pictures



Newest Packrat Phil WF3W.
Welcome!





Impressions from Dayton Hamvention 2019

by Michael Davis KB1JEY

By way of introduction, I have been attending Dayton Hamvention for about five years. I had wanted to travel to Dayton for many years but was not able to make the trip until about a couple of years before the IRS seized the Hara Arena. Originally, I traveled with Tom KA3FQS and George KA3WXV. Later, Tom K3GM and Guy WA3JZN joined our happy group. WA3JZN and I drive the 513 miles in the Mighty Manly Minivan and share one room. Tom, Tom, and George hop into KA3FQS's Honda Pilot and share another room. About 30,000 of my closest ham friends attend Hamvention with us.

It takes us about 9-10 hours to make the trip across the PA Turnpike, I-70, and various local roads to our hotel in Washington Court House. Washington Court House is 35 easy highway miles from Greene County Fairgrounds in Xenia, OH. We have a dining schedule. Thursday night, we visit a local tavern or restaurant. Friday, some of us dine at Jay 's Seafood, others at a local Mexican restaurant. Saturday night is Pizza Night. We might change the restaurants but **woe to the ham** that messes with the "formula".

We get a pair of flea market spots as much to save walking to the buildings as to vend surplus items from our shacks. Normally, a Dayton Hamvention visitor can count on a good amount of rain and mud but this year (2019), there was no rain during Friday and Saturday daytime hours. I finally remembered to bring my heavy-duty poncho, which did not see any use. Instead, I managed to pick up an annoying sunburn. Please do not share this foolishness with my dermatologist!

Normally, I am more a buyer than a seller but boxes of stuff have been accumulating in the Florida Room at my QTH and I need to make room for the Packrat picnic. This year I bid farewell to about 40 Harbor Freight digital meters, left over from the SJRA conference, at the "bargain" price of two for \$5 (KA3WXV moved some to an educational program at a severe discount). That pesky Milwaukee Hole Hawg of mine found a new home rather quickly. Various other items that have been cluttering the shack have new homes. I tried to sell the ICOM IC-746, which is surplus to my current shack needs but Dayton discounts on the IC-7300 have depressed the resale price of the IC-746. It came back home.

If you like county fair style food, Dayton Hamvention is your kind of place. Tom K3GM and I swear by the sirloin tip dinner. Main problem is that you could wait in line for a half hour or so at all of the food booths during peak lunch times. I think a "grab and go" offering would be welcomed. Someday, I will have to feast upon the pork chop sandwich and perhaps the giant turkey leg. [If they're the same as the Disney World turkey legs, you're in for trouble. Don't ask how I know. --Ed.]

From my perspective, both the indoor vendor booths and the flea market have their charms. Gary WA2OMY deputized us to find a WR90 transition/flange for a beacon project. If you want to find something at Dayton, my advice is to put Tom KA3FQS on the job. He came up with the desired item. One small tip: if you want to buy some coax from the RFC, tell Joel before he packs up his truck for Dayton because he does not bring rolls of coax to his booth.

What did I see that was new and exciting for me? Our friends at Elecraft showed a prototype of the K4. It looked dandy but I am still trying to figure out how to use my K3S and P3 to best effect. The folks at DX Engineering showed Geochron 4K world map / clock with the layer that shows amateur satellites. This feature has been promised in an update to existing customers but no final word has been given as to when that software update will make it to my shack.

...KB1JEY Dayton cont'd

I will leave with a story that is funny, at least to WA3JZN and me. On the way home, we were running about 15 minutes ahead of the Honda Pilot. When we asked the boys on the intercom (146.52 MHz) what to do about lunch, we decided to meet in New Stanton, PA, just before the PA Turnpike. Guy and I suggested Cracker Barrel but the boys in the Pilot voted for Subway, mostly for speed of service. When Guy and I arrived, we were the only folks in the Subway and received our order promptly. Shortly after we arrived, a bus with about 30 students and chaperones from Lima OH piled in. When Tom, Tom, and George arrived, they decided that McDonalds might be the wiser choice. Even Cracker Barrel would have been faster.

DARA HAMVENTION 2019

The weather was by and large great this year. There were still some muddy areas to which my car tires will attest but it was otherwise pleasant. I thought that the big introduction this year was the Elecraft K4 which apparently is not yet for sale and equally apparently will be very expensive. Elecraft has been improving the look of their radios along with the performance and the K4 struck me as looking like it could have been offered by one of the big three Japanese manufacturers. The thing that struck me most in the flea market was the number of really nice radios of older vintage that were for sale. If you wanted a Collins S line or a Drake 4 line or even an Elecraft K3 or a late model Flex they were all there ready for your offer. It is my impression that many of those went home with the people who brought them to sell. It seems to me that if you have a radio you like but that does not have the latest features it is financially better to learn how to incorporate that function into your present radio than to try to trade up because your trade is not worth as much as you hope that it is. One other impressive thing I saw in the flea market was a woman who had a monstrous pile of blond hair on her head ala Marge Simpson with a model of an antenna tower protruding from the top.

It was a good time spent with good friends.

Tom
KA3FQS

ps - George found the waveguide transition in a box of misc microwave stuff and I paid for it (see KB1JEY's article above for context.)



Pictures courtesy Dave Lundy (MVUS)

Light Communicators

Al Wells KB3SIG

2 June 2019

The first time I went to Camelback with the club, I saw the laser communicators everyone had and saw the points we got from making the laser QSO's. I made my first laser contact using a receiver that we cobbled together on a picnic table and a laser pointer modulated by shining it through a fan. It was something different, and I immediately thought, "Hey, that's FN20 (and another multiplier) just down the hill."

The next year I brought my green laser, hoping to see if it could reach FN20. I found out that Stephanie WX3K lives in FN20 in sight of Camelback at a distance of about 8 miles. We found her location in the daylight with binoculars and then spent a quarter to see it with the Camelback viewer (pay-binoculars) so I could get an azimuth reference from the markings on the viewer base. That night, when Stephanie was at home, she went up on her tower while I held my laser against the viewer and pointed it her way. She immediately saw it, and took a photo that appeared in July 2017 Cheese Bits. It proved that light communications from Camelback is possible!

I read the ARRL rules and discovered that:

1.8. While no minimum distance is specified for contacts, equipment should be capable of communications at a range of at least 1 km.

1.10. Above 300 GHz, contacts are permitted for contest credit only between licensed amateurs using mono-chromatic signal sources (for example, laser and LED) and employing at least one stage of electronic detection on receive. Laser usage is restricted to ANSI Z136 Class I, II, IIa, and IIIa (i.e.; output power is less than 5 mw).

My laser is 30 mw, so I was going to have to find something different. I found the modulatedlight.org website, and in particular the pages by KA7OEI. I decided to try using high power LED's with fresnel lenses. For 2018, I cobbled together 2 crude setups. I had tested them over a 800 ft path, and it was ridiculously easy. I took them to the mountain in a state that required further assembly and adjustment, but it was obvious that the weather wasn't going to cooperate and they stayed in the truck. I decided I'll build better ones for 2019.

While discussing this at one of the monthly meetings, I was asked to also take a look at the communicators the club is using to see if they are capable of working over a kilometer. This led to some interesting evenings.

Test 1 4/13/2019

This test was conducted by myself and Ben WA3RLT over a range of 1.1 km in daylight. A "cat toy" laser (labeled as ANSI Z136 Class IIIa) was mounted on a length of 2x2 wood with a Cvlife 3-9x40 air rifle scope. The laser was modulated with the free running 555 oscillator described in the January 2001 Cheese Bits. The front of the board was rested on a shooting bag, and it was aimed by hand.

At the receiving end, an 8" reflecting telescope was used. We tried a BPW34 photodiode connected directly to the input of a Radio Shack 2771008 amplifier/speaker. We also tried a solar cell obtained from Micro Center. The sensors were first held at the eyepiece of the telescope. After some difficulty in aiming (due to the way the scope was zeroed), we were able to get a good signal on the receive end

with either sensor. Attempts were made to then hold the raw sensors in front of the telescope, but no signal was received.

Test 2 4/23/2019

This test was conducted by my partner Cindy and myself over the same 1.1 km path at dusk. The same laser was used, but with the scope was re-zeroed and a rifle vise was used to hold it. (See Figure 1). On the receive end, the Micro Center solar cell was mounted at the focal point of a 8.5x11 plastic fresnel lens (Figure 2). To aid in aiming, a 8x12 reflector was made with a piece of plywood and some reflective tape. It was held in front of the fresnel lens for aiming, and was then removed. We were able to receive a fairly strong signal through the fresnel lens. The sensor was then removed from behind the lens and was held in front of it. No signal was received without the lens, but no attempt was made to move it around to look for the signal.



Figure 1

Test 3 4/24/2019

Ben and I conducted this attempt after dark over a path of 1.16 km. (See Figure 3) I used the same laser setup that was used in Test 2, and Ben had a similar laser clamped to the spotting scope of his 8" reflecting telescope. The 8" telescope was pointed at a spot 1.16 km away in daylight, and Ben directed me to that spot using 2 meter handhelds. For receiving, we had identical Packrat solar cells mounted in PVC pipe "laser receivers". This is exactly what has been used by the Packrats for years.



Figure 2

I was able to easily aim my laser because I could see the reflection in Ben's telescope mirror. By moving around a bit, Ben was able to hear my signal using only the hand held Packrats laser receiver. I was able to hear Ben's signal by doing the same. Except for assistance with aiming, no lenses or reflectors were used in the light path in establishing 2 way communications. The Packrat laser and receiver **are capable of communicating** over a 1 km path.

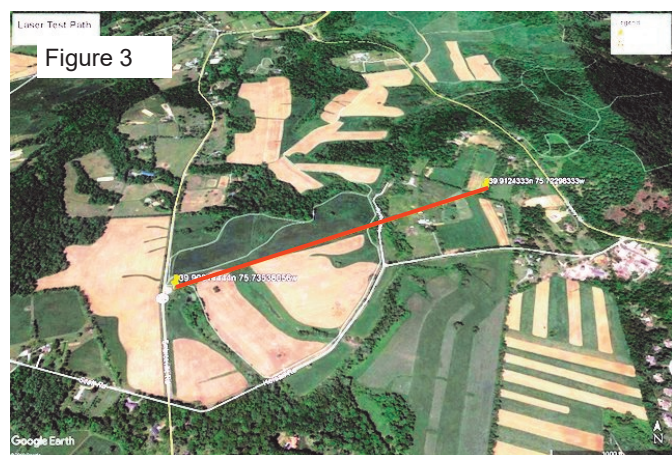


Figure 3

Test 4 approx 5/7/2019

We wanted to see if this could be done without scopes and a rifle vise. I rounded up Ben and Sheryl, KC3LXQ and we got set up just before dark in the same locations that we used in the last test. I had taken the rifle scope off of my laser and put on a very crude peep sight setup. I had 2 plastic bags filled with stone screenings to rest the board with the laser on. Ben and Sheryl had their laser clamped to a tubular rake handle, hoping to be able to sight through the tube. The front of the rake handle was rested on a piece of pipe held horizontally a few feet above the ground by a vertical pipe and a tee.

We used lights to find each others' locations. This is a very dark path, and neither end is silhouetted against the sky. I had a hard time seeing my front sight against a pitch black background, and Sheryl was having a hard time getting a steady hold on her laser. I got my laser pointed and steadied well enough for them to see, but Ben could not find a signal with his receiver. All we got on both ends were pings as we moved the lasers around trying to aim. We gave up after about an hour. Yes, these things are capable of going a km, but if you want to do that, there is a better way. The low power lasers and the solar cell in a pipe receiver require pretty precise aiming to work over a km.

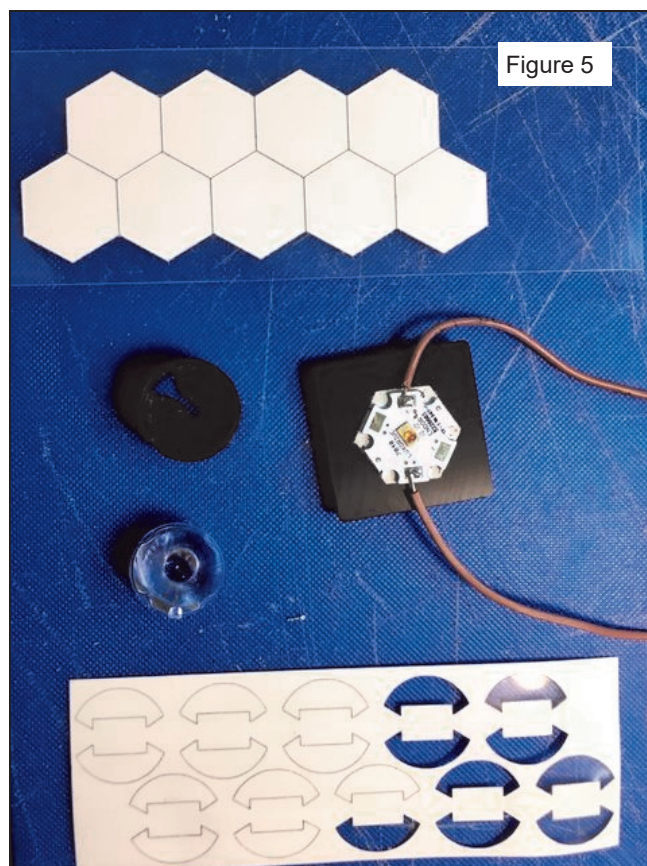
For the 2019 June contest, I built 2 "transceivers". They are wood boxes with separate transmit and receive fresnel lenses. See Fig 4 for the state they were in as of this writing. For transmit, I'm using a Luxeon Rebel 660 nm LED. It comes mounted on a "star" that you solder to and then mount on a heat sink. You can get sticky pads that transfer heat to make mounting easy. I also found that it works better with a secondary lens. "LED Supply Co." sells lens holders and lenses made just for this purpose, as well as sticky pads to mount it to the LED (see Fig 5). For receive, I'm using a BW34 photodiode into a K3PGP JFET front end. This is connected to the trusty old Radio Shack amplifier. The diode and front end is mounted in a Hammond box with the diode at the focal point of the fresnel lens. Someone please tell whomever gave us those Hammond boxes at the 2017 conference that the one they gave me is the best 3 bucks they ever spent. I love those things.

Since I'm working feverishly to get these boxes finished for the contest, you'll have to wait until next month for final details and a report on how it worked out. I know at least one Packrat who will be happy to know he'll have an article coming for next month's newsletter. 73, and see y'all on the hill.

Light Communicator Update

Al Wells KB3SIG

On June 9, a 660 nm light QSO was completed between W3CCX at Camelback (FN21) and KB3SIG/R at Blue Mountain (FN20). At the time it was thought to be 17.4 miles. Later evaluation revealed that the path was actually 18.3 miles. It was armchair copy. There was a lot of noise from mercury vapor lights at the Blue Mountain end, but the W3CCX signal was strong enough to get through it. Tune in next month to see how we did it!



MY JUNE VHF ROVE

by Andrea K2EZ

As told on the Packrat reflector

Rover Challenge #162

It has been a long first day of the contest. While nothing spectacular has happened, it has been going okay. The multi-ops seem to drag their feet as usual and the telephone number you have for the biggest multi-op in the area doesn't work. Digital modes have produced contacts, but QSY opportunities are lacking. You hear tons of digital mode signals that would be easy to work on SSB if someone would just call CQ. This seems to be the new normal however.

It is getting very late and most activity has wound down. You are about 40 minutes from your overnight stop and looking forward to a shower, and some rest. It won't be a long rest since you are planning to get out around 6am-ish but the shower and rest will be enough recharge. If all goes well you will be activating three new grids by 10am. Two of those are really good locations and you expect to pick up lots of Qs and mults.

You come up on a rest area on the highway. You stop to get some water, and a little snack. It is now that you discover your wallet is missing. It isn't in the rover and you think back to the last time you had it out. That was over five hours ago and 140 miles back. It was when you last filled the tank and got some dinner. You hope it was there.

No cash, no credit cards, no driver's license. This isn't looking good. Good news, you looked up the place you used it last, called, and they have your wallet!

Can you continue your rove and pick it up on the way back? You didn't have a room reserved much less pre-paid since you weren't certain you would make it all this way. Maybe sleep in the car? Oh wait, you aren't out of fuel yet, but there is no way to get thru four or so hours in the morning without needing to fill up.

Okay, you think maybe better part of valor is to head back and get the wallet? By now it is after 2am and it'll be 4:30-ish by the time you get to where it is. What then? Stay there? But that is over 3 hours away from the grid corner you intended to activate in the morning. If you turned around immediately after getting your wallet, you would be an hour and a half late for your intended start time and have gotten no sleep at all. This does not bode well for your rove plans.

Then you have an unwanted thought. Can you even get back to where your wallet is? The fuel gauge shows two thirds of a tank but you know it is very non-linear and at a half tank it seems to go towards empty at an incredible rate. Experience also suggests a half tank indication is usually a bit under a third of a tank. So two thirds doesn't give you much confidence.

Maybe some math is in order. You know with all the antennas, the rover's highway MPG is just a hair over 15 mpg. That is with the antennas facing forward and you have been swinging them all over during that 140 miles. That can't help. With 22 gallon tank, that should be a 330 mile range. Okay you only went 140 miles and with 330 mile range, you should be good. Then you remember that yes, it may have only been 140 miles, but it also has been five hours since you filled the tank. The rover's engine has been running the entire time. It is looking very iffy.

It gets better though. You are on a toll road and can't just turn around. You must proceed to the next exit, pay the toll and double back and paying the toll again as there is no practical alternate route.

And then there is still the problem of how to pay the toll. Fortunately you are prepared for that. You routinely dump your extra change into one of the cup holders specifically for tolls. And since you got tired sorting out the quarters from the pennies and dimes, you pretty much only have been dumping quarters in it, and it looks fairly full. So maybe there is enough to pay the tolls and get some extra fuel?

You look at the toll slip and see for the next exit the toll will be \$4.10. So right off the top \$8.20 of that precious change will need to go for tolls. And that next exit isn't for another five miles adding 10 miles to the route needed to get your wallet. That is another two thirds of a gallon you will need.

Will the rover make it all the way back to get your wallet? Will there be enough change for the tolls? Will there be enough extra change to feed the tank if needed? And wouldn't it be your luck that law enforcement will take an interest while you don't have your driver's license on you?

And now, for the rest of the story...

As many have guessed, this was the challenge I faced in the June contest. I was at a rest area on the Pennsylvania Turnpike out by Blue Mountain when the discovery was made and my wallet was back in Hazelton. I decided I would go get my wallet. I wasn't sure what I would do for the rest of my rove, but considered it unlikely I would make it out to the FN00/FN10/FM09/FM19 grid corner.

The first challenge was the tolls. I proceeded west to the next exit. The toll was \$4.20, but new to me, this exit had no nighttime toll taker. I had to simply scan my ticket and it would send me the toll in the mail based on my license plate. None of my precious change was expended. I made a U turn right outside the toll, took a ticket and proceeded back east. When I got off again, there was a toll taker who got \$4.20 of my change.

The challenge from there was having enough fuel. And to that end I did make it all the way back to Hazelton to the Turkey Hill gas station where I had left my wallet. It was, as predicted, about 4:30am. There I got my wallet without issue. All cash and credit cards were there. I filled my near empty fuel tank, gave the clerk \$40 reward, and decided it was best to head home to get some sleep. I would go out and catch the eastern grids Sunday and scratch the western ones. The trip home was about 90 minutes.

As it turns out however, I did have some extra resources I might have been able to draw upon which gave me a bit of a cushion.

The first of those resources is one I didn't remember till half way back to Hazelton. I was carrying a gas can which had two and a half gallons of fuel. Enough for perhaps 40 miles. I started carrying that gas can a couple years ago when I didn't pay close enough to my fuel gauge. Just when I realized I needed fuel, I got stuck in traffic. I tend to forget I have that spare fuel.

Another potential resource is that I had my phone configured with Apple Pay. I had two credit cards configured such that I could use them thru Apple Pay. I took that action after I had a close call where I thought I lost my entire purse while on a road trip. It turned out it was in the back of the car so not an issue then, but it got me thinking about how stuck I would have been if I had lost it.

At my next fuel stop I noticed they took Apple Pay. It occurred to me that Apple Pay could make a good

...June Rove cont'd

backup payment method in such a circumstance since I rarely put my phone in my purse the odds of losing both were limited.

Apple Pay is not taken everywhere so relying on it is iffy. And while I noticed it was taken at that one gas station, I really haven't paid much attention to see what major stations accept it and which don't. This is something I should find out. I did look to see if I could fill up at the rest area using Apple Pay and it appeared I could not. I had visions that if push came to shove, I would be going from gas station to gas station with my dwindling fuel trying to find a station that accepts Apple Pay.

The last resource is the most important one and why I had some confidence I would manage somehow. That resource was ham radio itself. When this issue cropped up, I had contacted Dave K1RZ knowing he was up. Dave kept me company on the phone for a bit of the drive back to Hazelton. I knew that if needed we could find someone to get fuel to me.

Yes it was in the middle of the night, but there were people who could be woken and who would come to the rescue. I expect even among Packrats help could have been found. If necessary I could have gotten on HF and tapped the network of the folks I know there. When I am not VHF roving, I can often be found doing HF mobile ops while on road trips. This is one of the great things about ham radio. The willingness of many ham radio ops to put themselves out to help.

June Roving Experiences

As told on the Packrat reflector

Keep truckin' Andrea. As a now retired rover of about 25 years who has been in some other but similar types of predicaments (described below), I got a grand chuckle out of your story..... And I can't wait for the Paul Harvey-esque "rest of the story." 73, **Rick, K1DS**

- *The year it was freezing in the single digits and Leon and I roved with a leaky gas tank that I kept secret from him...(replaced the tank the next weekend).
 - *The first rover year with the white van and we lost the transmission going up the hill of Camelback mountain and wound up backing up the rest of the hill as reverse was still operational, then having the van flat-bedded back to home for a new transmission (ouch!).
 - *When we ate some Mexican food on the road and then made multiple bio break stops...(I bought a camper potty for the future, never had to use it since).
 - *The year we descended from Mt Wachussett in MA with the parking brake still engaged and having that certain burning smell....(bought a fire extinguisher and mounted it in the rover, but never had to use it since).
 - *The multiple times we have been chased off of various rover spots by uncompromising park rangers and law enforcement....(I always carried a trifold explanation of ham radio and emergency communication and my licenses).
 - *The year we decided to start in FN51 at Cape Cod, expecting a 6 hr drive, which on Friday night became a 10 hour odyssey...(Never try FN51 at the start of the contest, no-one looks that way 'till late Sunday!)
 - *The year I went a bit quickly over a bump in the road and the main antenna mast on the rover fractured in two at the roof-line, saved only by the bundle of coax.
 - *The year the batteries aged and required keeping the engine running to charge them for the entire contest...(what engine noise???)
 - *The rove I stopped on the side of the road to use my emergency urine bottle only to have a trooper pull up behind me with flashing lights to check "If everything was OK!!"
- As Roseanne-Rosannadana (Gilda Radner of late memory) said on Saturday Night Live, "It's always something, isn't it?"

Packrat June Contest Reports

From Michelle KB3MTW

Hi Lenny, Due to the eskip coming in from the West we had some very impressive grid squares (unique to me). Made some phone and FT-8 contacts and when I make contact with K1TEO from the North I am a very happy camper. The cherry on the top would be a contact with you. Now if only we had these kind of conditions during the January contest and couple it with the fact that those dozen or so different call signs merged into 1 - in June W3CCX is 12 different hams - we'd increase our score greatly. Hoping to do this well in Sept. Come on guys and gals we got another chance to have fun and help our club. Go Rats!!!

From Rick K1DS & K1DS/R

I was able to lash together some of the gear I kept here in PA to manage a brief rove and visit to the mountain and then make a few dozen QSOs from the home QTH also. Not much of a score, but it kept the passion going. I'll have a few pix and write-up in Cheese Bits. TNX all who worked me. Rick

From Bill K1DY

Wow, well this was certainly an interesting contest!! I knew I only had a few hours on Saturday to operate and chances of being able to get on Sunday were slim (ended up being none).. BUT what the heck I got on pretty much at the start and since there was e-skip started on 6M. Holy smokes, all of a sudden I was

...Contest reports cont'd

running stations some times 3-4 per minute (I am running 90 watts and a 4 el beam so I am NOT a big gun!). Stations were single hop mostly to the midwest/south EM and and FM a few EN. After 2 hours I had around 140 QSO's !! This was all on SSB of course.. I suppose I could have picked and chosen new grids on 6M FT8 but the Q rate was so high I never even looked there!! The skip shortened up around 1900Z and I was working a few FN10/FN20/FM29 stations so started looking for skip on 2M but nothing. In fact the band was empty except for a few locals on FT8.. back to 6.. After 2000Z my time to operate was short and spotty but I did manage a few more 6M Q's and get this.. 7 QSO's on 2M all on FT8 (all stations I would normally work on SSB)!!! (I heard no one on 2M SSB/CW at any time).. Here are the totals: 50 - 160 Q's 55 grids, 144 - 7 Q's 6 grids, Total operating time 3 hours. I don't even know what to say about that!! BUT, it was fun and thanks to all who got on..

From Griff NE3I:

This is the FN20 QTH (daylight photo) from which AI KB3SIG made a Light QSO with W3CCX in FN21. The NE3I Mini-Rover points toward W3CCX on the end of that distant ridge line. In a less impressive performance, NE3I/R-FN20 was able to manage Qs on 4 Bands with W3CCX, 6,2, 223.5 FM and 432 using the verticals shown. Likewise on the Mountain itself. However, despite EI's helpful technical competence in battery replacement and Dr. Bert's diagnosis of its optics, NE3I/R-FN21's Laser was too weak to overcome the strict and stringent requirements of the W3CCX LASER Range. Where does one acquire a new Laser Pointer? Will my B&D Laser Chalkline Unit work or, would that present a potential polarization issue?



From Joe K1JT

Hi 'Rats and Friends! I trust that the gang on the mountain had a great time! I operated from home, 6m only, digital only, mainly to see how FT8 plays in a June VHF contest. I was on the air for 21 of the 33 contest hours, and left the receiver running on 50.313 when I was not in the shack. During the contest period I decoded 45,375 transmissions from others in the 4 kHz window starting at 50.313 MHz. That's an average of about 11 decodes per 15-second Rx cycle. I made 433 QSOs (21 dupes) in 152 grids. Two QSOs were MSK144; the rest were FT8. For comparison: my best previous 6m QSO/grid totals in ARRL VHF contests were 301/47 (January 2004, using SSB, CW, and FSK441; I was a multi-op), 262/46 (January 2002, ditto), and 242/54 (January 2019, using FT8 and MSK144). Most of the time there was enough sporadic-E and tropo-scatter to keep things busy using FT8. In this event, meteor scatter using MSK144 was not score-wise time-efficient. Interesting note: I seldom, if ever, found that a single 3 or 4 kHz window was "too crowded" with activity. There were nearly always some open spots, even with nearly everyone in the first 2.7 kHz of the window. Interesting question: How would FT4 have fared, with something like 4 dB less sensitivity? (FT4 is similar to FT8 but is twice as fast, about 4 dB less sensitive, and uses 80 Hz as opposed to 50 Hz bandwidth. It will be available for future contests.) My guess is that something like 80-85% of my QSOs could have been completed using FT4, most of them in half the time than it took in FT8. However, with the existing propagation and activity level I pretty much worked the 6m band dry. My hourly QSO rate dropped nearly monotonically from around 30 in my first six hours (5-11 PM EDT on Saturday) to around 15 in the last six 4-10 PM EDT Sunday). Many of the QSOs made with S/N -16 dB or lower were new grids. Tentative conclusion: in this contest, at least, in the future there will be good reasons for using both FT4 and FT8. A side benefit would be that distinct dial frequencies for the two modes would have the effect of spreading people out, just a bit.

...Contest reports cont'd

From Lenny W2BVH

I decided to take a more relaxed approach to the June contest this year. I usually take a quick ride up to Camelback (an easy 1 1/4 hours each way on Saturday morning), just to say hi and see how things have progressed, and then arrive back home in time for the start of the contest. This year I just plugged everything in at 2 pm and started. I also took the time to catch a good part of the Yankee game and also went out to dinner with the family. I was slowed down by a failure of my 2 Meter 2 x 4CX250B power amp on Sunday. Just turning it on blows the breaker on the power strip; didn't even have to key it up to cause the failure. I found my Mirage 2M brick and decided to use it for the rest of the 'test. To do that I needed to make a power cable (doubling up 12 Ga. power wires, and fabricating a 75 amp powerpole connection). I also built a key line cable for the Mirage. When I started making the cables I discovered that my \$300+ Weller soldering station was kaput (only 4-5 years old). So I pulled out my old iron and finished the job. This killed around 3+ hours. Results: 165 Q's, 75 Grids, 16K+ points on 7 bands. Very happy to have a band sweep with W2SJ, K1GX, K1TEO and missed just 6M with K1RZ. Q's on FT8, both 6M and 2M were lots of fun as was the Saturday single hop Es opening on 6M. A more relaxed approach to contesting is something I expect to repeat in the future. I'm not looking forward to working on the 2M amp with 2.2 KV inside -- everything has to go in slow motion in order to work safe. And while it's extremely well built, its not designed for easy maintenance. My Larcan amp needs to be converted to 2M; now is the time to get going on that.

A fellow in the Ham community Robert Hecht - N3AAK has been looking at the Lifetime membership rates for ARRL. It is 25 years x the current yearly rate which is $\$49 \times 25 = \$1,225$.

Bob just turned 74 and thought this rate to be outrageous for most seniors ~60+ years of age. So he contacted ARRL with this issue and found they were very interested in discussing this.

There was some correspondence back and forth between Bob and the Atlantic Division Director Tom Abernethy. Bob suggests if you agree to write to the ARRL. He gives suggestions of how you can word this. I hope many of you agree and can take some action. Please pass this. I hope this can spread like wildfire.

73

Michelle London
KB3MTW

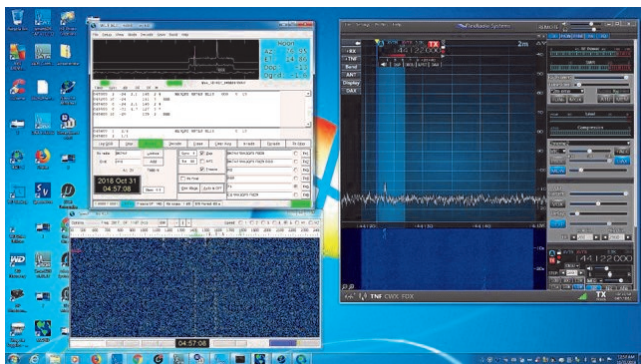
The Transistor, An Amplifying Crystal

Page 10 of the March issue of "Anomalous Propagation", the newsletter of the MidWest VHF/UHF Society (MVUS), as a photocopy out of the article in October 1948's QST. Interesting reading. See http://www.mvus.org/apnews/AP-News_2019-03.pdf

Software Radio

Page 5-7 of the same issue of "Anomalous Propagation" has a nice article on SDR with emphasis on <\$30 SDR USB "dongles". Take a look. http://www.mvus.org/apnews/AP-News_2019-03.pdf

Paul WA3QPX recently completed 2M EME Q's with Nepal 9N7AP and Saipan KH0/W2AZ. Congrats!



WR12 Bending Tool

OE5VR has a YouTube Video showing his custom made bending tool for small waveguide. Good craftsmanship with good results. https://www.youtube.com/watch?v=4BWIY_eAvuY

The Wayback Machine In CHEESE BITS, 50 Years Ago

Nibbles from June 1969. Vol. XII Nr. 6
de Bert, K3IUV
(author's comments in italics)

“Our Prez Sez”. The Prez, Charlie, K3HSS stressed member attendance at the club meetings, and reminded us that June would be elections. “Your chance to pick who ‘runs’ the club.” He acknowledged that “not everyone enjoys the January contest, because of the long hours required. But the June contest provides an opportunity to participate for a few hours at the club station site on Hilltown, and enjoy the fun.” He also commented on the “clique” that some members complain is running the club. He observed that the “clique” is a group of 15 to 20 members “willing to accept the work, and the responsibility.” Interestingly, he listed 16 members of the “clique,” together with their past and current contributions. *(Yes, K3IUV and K3JJZ were among those listed.)* He closed by inviting others to join the “clique,” by Volunteering!

ARRL Bulletin 219, 5/4/69. This bulletin provided an overview of many of the topics covered at the Board of Director’s annual meeting, held in New Orleans on May 2 and 3. “ARRL will support: 7-MHz Maritime mobile operation; RTTY from 28 to 28.5 MHz; and a move of the CW band on two meter to the low end *(a change that “stuck”)*. Also: VHF repeaters will be covered each month in the VHF column in QST; A separate booklet on repeater details was

authorized *(another thing that “stuck”)*; and a VHF Beacon will be established.” *(I don’t remember, was this one of the first?)* Other details can be read on our website.

Hamtronics Ad. More nostalgia. A full page ad by Hamtronics featured: A Saturn 6 Halo (the three-wheeler) for \$19.95; a CDR AR22 rotor with control box for \$29.95 *(can’t touch that price now!)*; and a “vest-pocket multimeter“ for \$3.95 *(reminiscent of the ones that KB1JEY provides now for a buck!)*

“From the Book Rack.” This month, the book review net, conducted by member Paul Behrman, K3WEU reviewed a two volume set titled “How to Choose the Best HI-FI and Stereo Equipment.” Written by Murray Rosenthal, the books covered acoustics, speakers and enclosures, preamps, amps, tuners and receivers. They also covered record players, tape recorders, phono arms, styli and related issues *(no CDs then!)*. Paperback, Volume 1, \$3.25. Volume 2, \$3.75. The volumes also included troubleshooting tips for keeping the system operating properly. The review was positive.

Antenna Problems. The Evening Bulletin *(another “things that aren’t there anymore”)* reported that “Radio Antenna Draws Ire of Neighbors,” in their 4/3/69 edition. In Ridley township, Jay Bucher (call not identified) was the target of two petitions by neighbors, against his operation. He asked the planning commission *(big mistake)* about the legality of his antenna. One

of the commissioners stated "He has lengthened (*raised?*) his antenna to 60-feet without a permit, and annoyed his neighbors 2-1/2 blocks away. The Board stated that "a recent resolution forbids construction of a new antenna without approval from all members of the board." (*So our current HOA problems are nothing new! We'll wait for the outcome in a later issue.*)

June QSO Party. Chairman K3ZPN, Lloyd invited all to "join in the fun." The club will operate from the community field in Hilltown. Setup will be on Friday afternoon and Saturday morning, 6/13-14 (*just like now!*). Contest runs from 1 pm Saturday to 5 pm Sunday. Help is needed for setup and teardown, and operators should schedule time at the stations. (*Another perpetual Packrat event.*)

Swap Shoppe. By W3ZRR. (*Always nostalgia.*) Wanted to swap, a Gonset G50 6 meter transceiver for a 2-meter transceiver, by K3HWZ/4 (*member "Grandpop Bill, recently moved to FL.*) For sale by Ken, K3NEA, a 15" RCA Color Monitor (*with book, make offer!*) and a Hallicrafters SW-500 for \$30. From Mort, WA3EPS, a package deal including an HQ170C receiver, a TX62 transmitter, an HE69 6 & 2 vfo and a T Craft 2-meter converter, all for \$325..

Meeting Notice. Next general meeting will be elections. The slate included K3JJZ, EI, competing with K3UJD, Mario for vice-president.

Did you know? Tidbits about the club and members. 1. Member WA3EPS, Mort Mazer, reported his daughter Randi is preparing to take her novice test. She is proficient with Morse code, but is having a bit of trouble with the novice questions because her reading skills are not quite good enough. She is 5 years old!! 2. Last month's speaker, Ed Tilton, W1HDQ was presented with a plaque making him an honorary Packrat.

Miscellany. *Postage for this copy (It was from Harry, W3CL) was a single 6-cent Roosevelt stamp. (6 double sided, 8-½ x 11" sheets.) As usual, many "folksy" comments about members, their families, and activities were included in this edition of Cheese Bits. If interested, or for more detail on the above items, visit our website (www.W3CCX.COM) and read the full issue scanned by K3IUUV (me), and posted on the website by W3SO, our webmaster. Remember, I have also posted the club Officers history, club Membership history, and Packrat Inventory (updated frequently) on the W3CCX website. These files are password protected, and only accessible to registered members. Have you registered? I hope you enjoyed reading these bits of nostalgia as much as I did in writing the article. If yes, you might let me know. Thanks to those that did.*

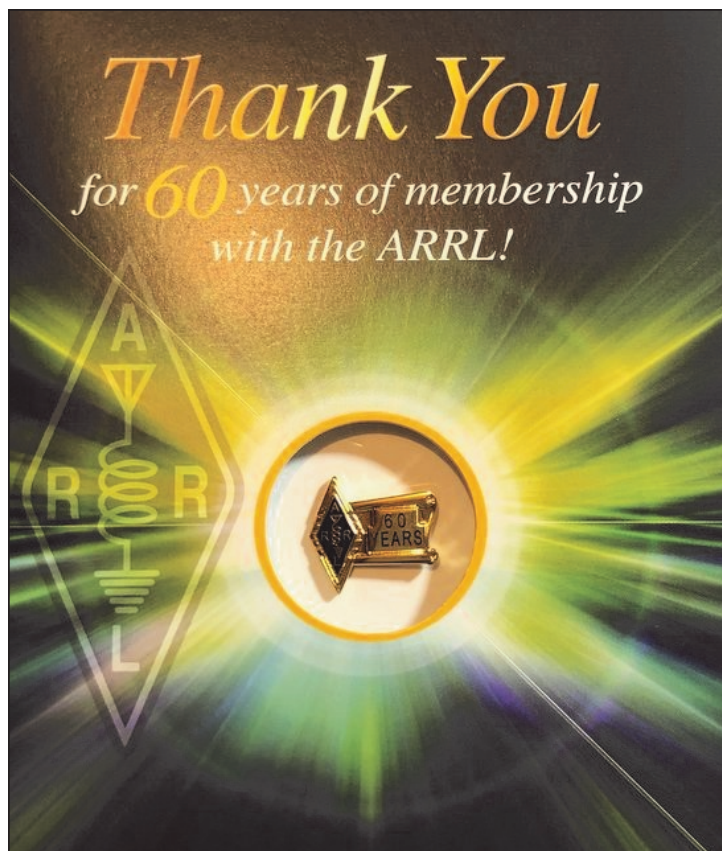
**thirty, de
K3IUUV**



Nice Surprise

Had a nice surprise in Saturday's (4/27) mail. I got a 60 year member recognition Lapel Pin from the ARRL. Wow, time flies when you're having fun!

Bert, K3IUW



Events

For inclusion, please direct event notices to the editor.

Murgas ARC Hamfest & Computerfest - Hamfest

- July 7, 2019. Plains PA. See <http://hamfest.murgasarc.org/> for details.

Sussex County (NJ) ARC Hamfest - Hamfest -

July 14, 2019. Augusta NJ. See <http://www.scarcnj.org/> for details.

CQ WW VHF - Contest - July 20-21, 2019. See

<https://www.cqww-vhf.com/> for details.

222 and Up Distance - Contest - August 3-4,

2019. See <http://www.arrl.org/222-mhz-and-up-distance-contest> for details.

10 GHz and Up Round 1- Contest - August 17 -

18, 2019. See <http://www.arrl.org/10-ghz-up> for details.

September VHF- Contest - September 14 - 16,

2019. See <http://www.arrl.org/september-vhf> for details.

10 GHz and Up Round 2- Contest - September

21 - 22, 2019. See <http://www.arrl.org/10-ghz-up> for details.

EME 2.3 GHz and Up - Contest - September 21 -

22, 2019. See <http://www.arrl.org/eme-contest> for details.

EME 50 to 1296 MHz Round 1- Contest - October

19 - 20, 2019. See <http://www.arrl.org/eme-contest> for details.

EME 50 to 1296 MHz Round 2 - Contest -

November 16 - 17, 2019. See <http://www.arrl.org/eme-contest> for details.



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Welcome Allen Oldfield

Allen W9KXI was voted in to the Packrats in January. He'll be visiting from upstate New York on Thursday. Please welcome him when you see him.

Hi Lenny,
I am in process of rebuilding my entire remote station, internally and externally. I will be off the air a large part of the summer. The good news is when I return I will be very active on tropo and EME and will have lots to report and discuss. I will be missing on 1296 for awhile but should return with a setup that can work everyone on ssb/cw much easier and consistently. We shall see.
73, Jerome - K3GNC, fn20jb

Project Diana

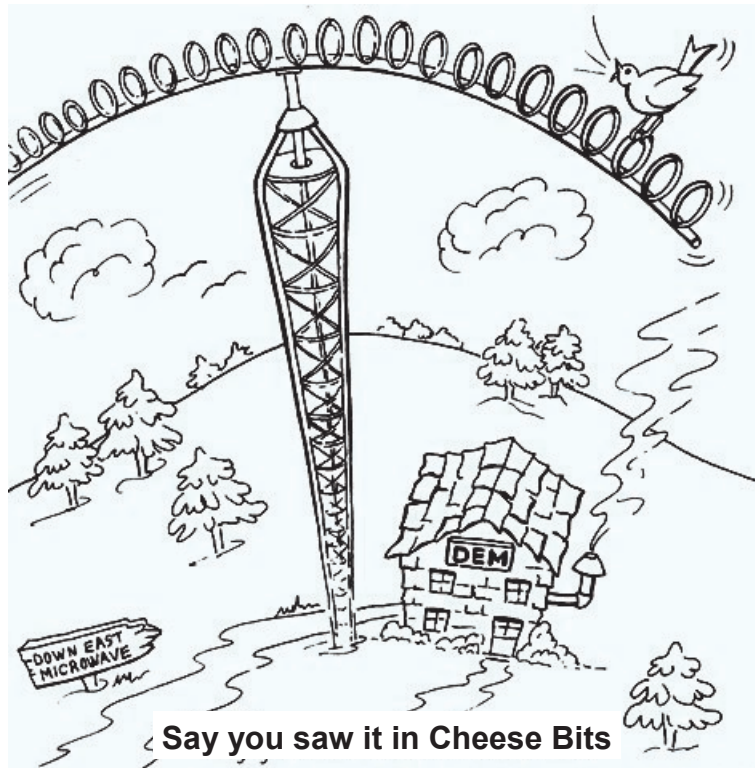
In 1946 engineers at Camp Evans (Fort Monmouth NJ) bounced radio waves off the moon for the first time. In May, representatives from IEEE unveiled a Milestone Plaque for Project Diana at Camp Evans. See <https://spectrum.ieee.org/the-institute/ieee-history/project-diana-honored-with-an-ieee-milestone> for a very nice article on the achievement.

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