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[www.mvus.org](http://www.mvus.org)

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**Club Memorial Call W8KSE**

There is **no August Meeting** (we had the picnic on the 12<sup>th</sup>); the September Meeting will be on Fri. 22<sup>nd</sup>.  
at 7:30 PM at the Perkins Restaurant at SR 73 and I-75.

Meeting Topic: TBD

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**Upcoming Events.**

Microwave Update/ Philadelphia, PA.....	28/30 Sept.
AMSAT Symposium / Portland, Main.....	27/29 Oct.

*Drive carefully! Be responsible! Don't follow too close! Don't speed!*

## De N8ZM

Ok, let's get this part out of the way. There will not be a meeting on the usual 4<sup>th</sup> Friday in August, because we had the meeting at the picnic. Which, if you missed it, was another really great time! Good food, good friends, and good weather. As always, thanks to Daun and Karen Yeagley for allowing us to disturb their domestic tranquility. And a special thanks to Gerd for doing all of the errands needed to put this party together, since I was out of town all week and didn't get home until early (!) Saturday morning.

In response to my comments in the last Anom Prop about writing up your projects for publication, I am happy to report that KA8EDE has responded with a very well done piece on the beacon project, and although it isn't quite finished, I expect he will see it in print soon. So the rest of you have no excuses for not putting your ideas into words. And as I mentioned at the June Meeting, even an article with an idea for a project is welcome if it is well thought out. And the offer for editorial help still stands, bolstered by similar offers from Sherwin, KA8LLO, and Daun, N8ASB. So get busy!

Red, W8ULC, attended Central States at the end of July, and managed to get elected to their board. Congrats, Red! Also, Lloyd, NE8I, recorded a video of some of the presentations, of which Mike, WB8GXB has made copies. There are two available, Mike has one, and I have the other, so call one of us if you'd like to see the show.

Cinergy, the Power Company in Cincinnati, recently donated several pieces of Motorola 2 GHz point-to-point gear to MVUS for experimental use. These are in very good shape and modular, including preamps, filters, power amps, circulators, and lots of cables with SMA connectors. The nameplates list frequencies at 1.8 to 2.0 GHz, and we haven't yet had the opportunity to sweep the devices to see if they can be pushed up to 2.3 -2.4, or down to 1296, but hope to do that soon, so stay tuned. There are several of these units in our hands, so once we see what they will do, we can spread them around. Hopefully, there is the core of some weak signal or P3D station here. And our thanks to Cinergy for thinking of us.

Elsewhere in this issue, Gerd has written up other news, so I won't be redundant, except to add my thanks to John, WA9OUU, for his generosity and support of MVUS.

Those of you who have attended the meetings recently are aware that we have had some problems with the Perkins restaurant due to some changes in their policies for serving large groups. These changes mainly involve them wanting to lump all of our checks into one big one, including the gratuity. This is not practical for us to deal with in our meeting format, and we have told them so, but the issue hasn't been resolved yet. Plan B is to look for another meeting site which is centrally located, has enough space, doesn't cost much, and will tolerate our bringing in large pieces of gear for presentations. Guess I'd better get busy and get this straightened out before our September Meeting!

Obviously, more next month! Tom, N8ZM.

**For sale:** 50MHz Icom IC-551 Transceiver, SSB/CW/AM/FM; 10 watts; \$380. Kenwood TR-9000 two meter CW/SSB/FM xcvr, great for use with vhf/microwave transverters, \$250. Rohn SSV 60ft. self-supporting tower; 2-1/2 ft. leg-to-leg at the base; three 20 ft. sections, with base & 3 ft. top piece, \$1600. RG-331/U Times Wire & Cable 1/2 inch 50 Ohm Hardline, .50/ft.; Wilson WR-1000 rotor, \$500. Aluminum masts; Prop-pitch rotor; 28-1296 Mhz antennas. T/R relays (sma & bnc); 3.4 GHz xmt/rcv converters; QST/Ham Radio/73 magazines/books. Call or email for 6-page list. Joe, WA8OGS, 513-385-4198 ([burkej@greatoaks.com](mailto:burkej@greatoaks.com)).

## This and That 8-00

- **Preying on its Own.** The human is the only creature that goes out and preys on its own kind.  
[Sten Nadolny]
- **Why California's Cellphone Towers are so Low?** This state has a *lot* of users and since the number of channels is limited, the cells are a lot smaller and the towers can be rather low; however, there are lots of them. [ DF800]
- **Going back to a Simpler Age.** ...But history shows, the past was not that wonderful. It was not so bad for the privileged minority, though even they had to do without modern medicine, and childbirth was highly risky for women. But for the vast majority of the population, life was nasty, brutish and short.  
[Stephen Hawking]
- **Canadian Rules.** Engine starting is controlled by the ignition system. This system meets all Canadian Interference-Causing Equipment standard requirements regulating the impulse electrical field strength of radio noise.  
[Ford Auto Owner's Guide]
- **5 Years or 50,000 Miles.** Sounds good! But if you just drive at 30 Mph 24 hours a day, then the in-warranty life is only 70 days! [ Dr. Joseph L. Capitano / Accelerated Aging Discussion]
- **"Windows to Space".** There are only two windows into space which are "Microwaves" and "Light".
- **Telephone.** This "telephone" has too many shortcomings to be seriously considered as a means of communication. The device is inherently of no value to us. [ Western Union Internal Memo, 1876]
- **Broadcasting.** "The *wireless music box* has no imaginable commercial value. Who would pay for a message sent to nobody in particular?"  
[Associates of David Sarnoff responding to his urgings to invest in radio in the 1920s.]
- **Talking Pictures.** "Who want to hear actors talk?" -- H.M. Warner, Warner Bros, 1927 –
- **Human Progress.** An unknown author wrote: "There are four things that hold back human progress: ignorance, stupidity, committees and accountants." And who makes corporate decisions? Committees of accountants!  
[ Dale Dauten]
- **Theory and Practice.** Theory is, you know it all but nothing works. Practice is, when everything works but nobody knows why. In the case of Microsoft both statements are true. Nothing works and nobody knows why.
- **Mighty Big Antenna.** Since he built this antenna (an array of 36 long long Yagis) 16 years ago, David, W5UN, has logged 10,000 EME contacts with 2,400 different stations. Among the smallest stations was ZD8MB, who was running 25 W to a single short Yagi. His excellent web site tells you all about 2m EME, how to do it, and whether you could do it right now! There is some info on the bottom of page 7.  
[ QST 9-00 and web.wt.net/~W5UN]
- **P3d.** This year's event (UK AMSAT Symposium, late July) was planned to have a lot about P3D, and there were no disappointments. Apart from several items of hardware being discussed, attendees were also told that the new provisional date for P3D's flight into orbit is now 31 October. The launch campaign should start on 11 September (fingers crossed). [Info via Richard W L Limebear, G3RWL]

# MVUS Picnic and Antenna Measurements 12 Aug. 2000

By Gerd, WB8IFM

The weather could not have been nicer: sunshine, beautiful cumulus clouds and temperatures in the upper 70s. What had me worried was that since early in the week the “weather people” had predicted a super weekend.

The xyl and I arrived shortly after 10AM having stopped on the way to pick up some fresh corn and tomatoes. Our first act was to put up the MVUS banner at the foot of the driveway. Mark’s (KB8ZR) wife made this banner many years ago.

After driving up to Daun’s (N8ASB) house and unpacking all the “stuff” (food, equipment) Traudl retreated with a book and beach chair under a nice shade tree. Daun’s place out in the country is an ideal choice for picnic and, of course, antenna measurements. It has acres of land, a few trees, a large pond beside the house, and a large barn. And it is adjacent to the Clinton county airport, where Daun rents a space for his airplane to satisfy his second hobby.

After a short while there were four of us, Mike, WB8GXB and Joe, WA8OGS, the “dean” of antenna measurements, Daun and myself. Four is the “critical mass” needed to put up the main antenna source mast (26 feet) and the canopy, which we borrow every year from Fred, W8LLY. This latter item is always complicated to erect, eventually someone will read the instruction, and then the numbered pieces find their correct position.

We selected a 150’ range and mounted the source antennas (small to medium size beams). 2m at 22’, 220 MHz at 14.4’, and 70cm at 7.3’. The test antennas then were at 11’. More members had arrived and doing a quick survey of the antennas we found that the bulk were dishes for 2304 MHz. So we mounted a wideband (1 to 10 GHz) conical antenna at 25’ distance about 10” above ground which would permit us to hand hold the dish antennas. The HP 8753C network analyzer with R/T (transmission/reflection bridge) was connected by cable to the source antennas (RG-8 type for VHF and 5/8 heliax for 2.3 GHz) and the signal from the test antenna.

After measuring six 2.4 GHz antennas, the call came from the spacious deck attached to the house, “picnic is ready”. So we decided to take a break from the measurements and join the families.

The ladies had done a super job and Tom, as usual, was manning the grill. There was a lot to eat: hamburgers, hot dogs, corn, green salad, potato salad, baked beans and a lot of other items (jammy but not recommended by the “doctor”)

There were 20 people in attendance including two children. A brief “official” meeting was called by Tom, N8ZM, and a few announcements were made and some business conducted: Red was made an alternate director at the Central States Conference in July. John, WA9OUU, his small business doing well donated \$ 200.- to the club and the club in turn decided to help the NAAPO (North American AstroPhysical Observatory), the “big ear people”, with a \$ 100.- donation. Check out their website to get an idea of their projects: [www.bigear.org](http://www.bigear.org) Finally officers for the next year were elected and as you might imagine, Tom was reelected president and I treasurer, Steve, K8UD is succeeding Bob, N8EHA who had moved out of the area as secretary. Thanks Bob for many years of service to the club. Then, what we’d been waiting for: Keith, KB1SF, gave us the latest on P3d after he had extracted an oath of secrecy from us. So I can’t tell you, only so much: it doesn’t look bad!

After that we went back to measure antennas for the VHF/UHF range, nobody brought anything beyond 2.4 GHz, so we were soon done and had plenty of time left to chat. Daun had a bunch of “unclaimed” microwave stuff like brand new heliax connectors, jumper cables with connectors, relays, couplers and other items at very attractive prices. After that we started to pack up, By 6:45 we were on the way home. Following are the measurement results:

13 cm, 4 tube push-pull double ended coaxial resonator amp. using 6x4 tubes

1. 3/4 wavelength each side of center.
2. Push-pull has no anode bypass cap.
3. 2 tubes work well and 4 tubes can still have a common output coupling.
4. inputs are 180 deg. out of phase from a hybrid splitter(s).
5. Water cooling and 13± at the center micrf Point.
6. initial testing at low drive and anode voltage show proper operation with 100±watts out.
7. Efficiency is 15%+ and similar to single tube amps per K9EK, Ed Krome's info. Ed is getting 150w from a single tube in high drive and voltage conditions and this was the motivation for this EMII amp design.
8. I need more drive power and 2500v at 1A to test the next level.
9. Results will be in the Midwest VHF-UHF Soc. news letter as this develops.

## **2m EME Anyone?**

If your 2 meter station outputs 100 watts or more to a good 16 element Yagi antenna, and your receiver front end has reasonably low noise, you may be able to work W5UN via 2 meter moonbounce. Tune to 144.028 mhz cw, and point your antenna at the horizon as the moon nears set or shortly after it rises (of course I must be able to see the moon in Texas). I call CQ there regularly whenever eme conditions are favorable. Skymoon (a computer program, a free version that works can be downloaded from his web site. *Ed.*) can help you determine the best operating dates & times. Check into the 2 Meter EME Net Saturdays & Sundays on 14.345 MHz, beginning around 1700 UCT to arrange a schedule. Dave, W5UN

## More IMD Measurement Results (3-18-2000)

Previous results and description of measurements in AP Vol 14 No 5 (June/July 2000)

### ICOM 551 D (KA8SSB)

MDS -136 dBm

--- 6m ---

S1	S2	S3	S4	S5	S6	S7	S8	S9	S9+10	S9+20
-97	-94	-92	-90	-88	-86	-84	-81	-78		-64

Pin -30 dBm

IMD3 S4 = -90 dBm >>>

IP3 0 dBm

### ICOM R-7000 (WB8GXB)

MDS -130 dBm

--- 6m ---

S1	S2	S3	S4	S5	S6	S7	S8	S9	S9+	S9+
-96	-94	-92	-89	-85	-80	-76	-71	-66		

Pin -30 dBm

IMD3 S6.5 = -78 >>>

IP3 -6 dBm

### ICOM R-7000 (N8ZM)

MDS -129 dBm

--- 6m ---

S1	S2	S3	S4	S5	S6	S7	S8	S9	S9+	S9+
-83	-80	-78	-73	-70	-66	-63	-58	-53		

PIN -20 dBm

IMD3 S4 = -73 dBm >>>

IP3 +5dBm

### ICOM 451A

MDS -130 dBm

--- 70cm ---

S1	S2	S3	S4	S5	S6	S7	S8	S9	S9+	S9+
-98	-96	-94	-91.5	-89.5	-86	-82	-78	-70.5		

PIN -30 dBm

IMD3 S5 = -89.5 dBm >>>

IP3 0 dBm

### Hallicrafters SX 25 Receiver (?)

MDS -123 dBm

--- 40m --- Pin

- 10 dbm

IMD3 -55dBm >>>

IP3

+ 12 dBm

### Radio Shack HTX 404 (W9NBS)

--- 70cm ---

S1	S2	S3	S4	S5	S6	S7	S8	S9	S9+	S9+
		-105				-97		-93		

Pin -40 dBm

IMD3 S3 = -105 dBm >>>

IP3 -7.5 dBm

### IC-W2A (Steve)

MDS -117 dBm

--- 70cm ---

S1	S2	S3	S4	S5	S6	S7	S8	S9	S9+	S9+
-106				-100.5				-91.5		

Pin -40 dBm

IMD3 S1.5 = -105 dBm >>>

IP3 -7.5 dBm

### YAESU FT 50R (WB8GXB)

DS -117 dBm

--- 70cm ---

S1	S2	S3	S4	S5	S6	S7	S8	S9	S9+	S9+
			-90		-84		-80			

Pin -40 dBm

IMD3 S5 = -87 dBm >>>

IP3 -16.5 dBm

### IC W 32 (N8ZM) MDS -116 dBm

--- 70cm ---

S1	S2	S3	S4	S5	S6	S7	S8	S9	S9+	S9+
		-101				-97		-95		

Pin -40 dBm

IMD3 S9 = -97 dBm >>>

IP3 -12.5 dBm

CSVHF July 2000 in Winnipeg  
By Lloyd from Lower Whoville, NE8I.

Made it to Central States up in Winnipeg. It was a another excellent conference. **Barry VE4MA**, and all the VE4 volunteers did quite a wonderful job. The event was held at the Fort Gary Inn on Pembine Hwy. The Wx cooperated also. Beautiful sunny clear skies, very enjoyable temperatures. I think the Texans called it "natural air conditing." About 150 attended the conference, and over 200 were at the banquet. W9FZ gave a nice talk on Rovering.

The antenna range Friday worked well. Many people shyed away from bringing antennas, preamps and stuff for the flea market, mostly fearing customs. Some did have some difficulties. Most I talked to did not. For me, customs was about normal. Took a couple minutes. I was able to buy a couple things at the flea market, and get them and some tourist souvenirs through US customs with minimal hassle.

Enjoyed the talks. Ranging from Aurora and Northern Propagation, KG0VL and W3EP (my favorite) American Samoa DX pedition, included 6M by N0JK. He is also a HF contester and DXer, I also enjoyed that. The latest Oscar news W5IU, technical programs such as VE5TR on Filters, a subject near and dear to my heart, living in a urban area full of interfrance. New Data modes, Power measurement, Control panel tricks, the latest in CW id PIC keyer designs, EME, Building towers.

Speaking of building towers, and antennas the presentation by WA8WZG, the night before at the flea market, someone put out a donation glass for his new antenna farm, and \$3.08 mostly in Canadian money was raised. It all helps.

Pre amp measurements results were something else. Our designs are getting so good, it is now very difficult to measure the results. 144 MHz results of .11 dB (+25dB gain) are quite something. Almost beyond the capability of the measuring equipment.

Quite a successful effort by all concerned. Thanks for the most enjoyable conference! P.S. Next year's conference will be in Dallas.

**PPS**, along with several others, drove back around Lake Superior, the Canadian side. First time for that drive. Saw 2 moose. Some spectacular scenery, found many locations that would make for great rovering locations. At night, saw the Northern Lights, in a very clear dark sky. Heard some aurora on 2M, and the VE4VHF beacon, on aurora.

Lloyd J. Ellsworth NE8I P. O. Box 2132, Dearborn, Mi. 48123-2132 USA  
e-mail: [ne8i@arrl.net](mailto:ne8i@arrl.net) Packet: ne8i under repairs

**Conference Proceedings.** Barry, VE4MA, sold all the copies he had. However, they should still be available from the ARRL.

**IP3 List (3-18-00 Measurements)**

Equipment	Call	Band	IP3 (inp) dBm	Comments
IC-745	WB8GXB	20m	+40	
RC-4	W8ULC	20m	+29	
FT-707	KA8SSB	20m	+11.5	
TR-7	KA8EDE	20m	+28	
FT-920	W8ULC	20m	+14	
“	“	6m	+22	
“	“	“	-2	w. preamp
Hallicrafters SX-25	WB8GXB	40m	+12	
IC-551D	KA8SSB	6m	0	
ICOM R 7000	WB8GXB	6m	-6	
ICOM R 7000	N8ZM	6m	+5	
IC-451A		70cm	0	
R/S HTX 404	W9NBS	70cm	-7.5	
IC-W2A	KB8UHY	70cm	-7.5	
FT-50R	WB8GXB	70cm	-16.5	
IC-W32	N8ZM	70cm	-12.5	



## **Announcing Microwave Update 2000**

Microwave Update 2000 will be held on **29 through 30 September** 2000 at the Holiday Inn Select, Bucks County **just north of Philadelphia**, PA. This year, Microwave Update will be hosted by the Mt. Airy VHF Radio Club, Inc. ("The Pack Rats"). The Holiday Inn Select, Bucks County will be providing accommodations for the event. This is a 215 room full service hotel with a restaurant, lounge, indoor pool, fitness room, etc. It is centrally located between the Bucks County countryside and historic Philadelphia. We will have full use of the conference center Friday and Saturday. Two smaller meeting rooms will be available for the evening flea market(s).

Call for Papers: Anyone wishing to present and/or submit papers equipment design, construction, and propagation at frequencies above 900 MHz for inclusion in the printed copy of the proceedings should contact John Sortor, Conference Chairman at [JohnKB3XG@aol.com](mailto:JohnKB3XG@aol.com). Deadline for papers is Monday, August 7, 2000.

For those of you that are unfamiliar, the Pack Rats are a group of VHF and Above enthusiast's with a 44 year history. The club was started by a small group from Philadelphia with the sole purpose of promoting VHF activity. The club has sponsored one of the area's best hamfest (Hamarama) for the past years and has hosted the Mid Atlantic States VHF Conference since 1975. The Packrats provide beacons on 10 VHF/Microwave bands from 50 MHz through 10 GHz and are active in all VHF contests.

Room rates will be in the low to mid \$80's. There is no additional charge for double occupancy. We have blocked out 100 rooms under the key code "Microwave Update" which will be held for us until September 7th. This might sound like a lot of rooms but don't wait until the last minute to make your reservation. This is a busy area. Holiday Inn Select, Bucks County 4700 Street Road Trevese, PA 19053 (215) 364-2000 (800) HOLIDAY [www.basshotels.com/holiday-inn](http://www.basshotels.com/holiday-inn)

In addition to ham activities we are tentatively planning some extra curricular activities for stranded ham family members. Most attractions can be reached in less than 1 hour. A list of activities will be included with the registration package to see who might be interested in what. Atlantic City Casino bus trips Franklin Mills Outlet Mall Liberty Bell & Old Philadelphia NJ State Aquarium Philadelphia Park Race Track Sesame Place

### **Valley Forge National Park**

Of course it wouldn't be Microwave Update without the surplus tour. There are more new and surplus houses within a 50 mile radius around the Holiday Inn than you will be able to visit in one day. I said new equipment because Down East Microwave Factory Tours will be on the list.

There will be evening flea markets at the hotel and don't forget Hamarama on Sunday. Please add flashlights to your packing list. The doors to the Pack Rat hamfest (Hamarama) open Sunday at 8 am but Hamarama has always been known for the "Flashlight Shoppers."

Noise Figure testing will be provided as well as an equipment tune-up clinic.

Advance Registration is \$40.00 with forms available at the web site below. Send registration to Microwave Update, PO Box 682, Hatboro, PA 19040. Hamarama and Dinner tickets will be available at the door.

For more information contact [JohnKB3XG@aol.com](mailto:JohnKB3XG@aol.com) and visit the Packrats web page for the latest news on Microwave Update 2000 at [http://www.ij.net/packrats/MUD\\_2000/mud.html](http://www.ij.net/packrats/MUD_2000/mud.html)