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Club Memorial Call W8KSE 10 GHz Beacon, presently off the air.

Meeting at the Old Country Buffet !

near SR 725 and Yankee Rd. in Centerville

Sept Meeting on **Friday 23 Sep.** 7:30 PM Topic: **Microwave Update 2006**

Contents

De N8ZM.....	3
This and That.....	4
MVUS Picnic & Measurements.....	6
10 GHz Cumulative Report.....	9
History of microwave Update	10

Upcoming Events!

2005 Microwave Update, 27-30 October

Sheraton Cerritos Hotel

12725 Center Court Dr Cerritos, Ca 90703

Sponsored by the San Bernadino Microwave Society

And cohosted by the Western States Weak Signal Society

Jam Session Bill Eaton, K9AYA

I am planning to have a **Microwave Jam Session** at my QTH on October 8. (9 in case of rain)

The Idea is to get those guys over here that have microwave gear and need a little operating experience. Or maybe need a few bugs worked out. I talked to Dave K4TO and he will be available for the day. This would be a great opportunity for some of the guys to get a 100-mile plus QSO. Brad K4EFD and Rich W2RG will also be available. (our two resident rovers)

I will supply snacks and drinks. There are beacons operating here in the Hamilton Ohio area on 5760 and 10368 I also have 24 GHz available. Cu here, Bill, K9AYA

Correction

Mars is getting closer, but not quite that close!

Hi - Pardon the intrusion, but you have the facts on Mars in the August 2005 issue of AP incorrect - this occurred in 2003, not 2005. Mar's closest approach this year will be in October - on Halloween no less (shades of "War of the Worlds")! Please see the following from NASA:

<http://search.yahoo.com/search?p=mars+closest+approach+2005&ei=UTF-8&b=21>

73, and I DO enjoy the newsletter - Bruce KC8VEB

De N8ZM.

This year's picnic was, in my estimation, a huge success. We had great weather, although we had to postpone a day to get it. And I apologize to anyone who made the trip to Daun's on Saturday, only to find out we had decided somewhat down to the wire, to delay it. We did try to call as many folks as we could to get the word out. We only had a couple of the YLs show up, and that was disappointing, but, at the risk of creating the impression I have a death wish, maybe that was OK for everyone concerned.

The measurements went very smoothly, and although I know we didn't get to everything, we covered almost all of the requests. If anyone still needs something checked for frequency or power or noise figure or tuning, let me know and I'll try to work out a schedule with you.

Once again, many thanks to Daun and Karen Yeagley for hosting the event; it is a great place to do what we do.

I had a call from Al Ward, W5LUA, this morning, and he is concerned about whether we are seriously planning to host the **Microwave Update conference in the fall of 2006**. MUD 2005 is coming up at the end of October, and they really would like to be able to announce the location for next year. We have discussed this at several meetings, and I have always come away with the feeling that the collective attitude was "sure, we want to have it, but I don't personally want to take on a committee". I called Gerd after talking with Al, and his opinion was that we COULD do it. He even volunteered to handle the registration responsibility (and I think he knows a lot about that task!). If Mike Schulsinger will continue working on getting us a hotel, I think we can count on some help from Tony, WA8RJY, and Tom, WA8WZD, to line up speakers. That leaves maybe 5 jobs: Flea market, advertising, prizes, banquet, and a family outing. As Gerd pointed out, we should soon start having monthly meetings to stay coordinated.

I will be out of town for the meeting on the 23rd, so Gerd will be running the show, and this will definitely be a topic for discussion. Whatever conclusion comes out of that meeting, I must pass along to Al as soon as possible.

As a reminder, please check your mailing labels for the expiration date of your membership, and please get your dues paid up if it is time to do so.

Also, it looks like we have finally **sold the trailer**, for \$650, so that will help support our beacon projects. Speaking of which, I hope to be able to report that there will be an antenna installed for the 1296 beacon by the end of October. It all depends on when the tower climbers finish painting and then head back up to install antennas for the TV station.

Also on the tower will be a **UHF repeater** that will have the MVUS club call sign, W8KSE, on it. The frequency will be 444.25 MHz, +5 offset. I suspect that to keep down the ker-chunks, it will have a full time PL tone on the receiver, but I don't have that information yet. At roughly 1800 feet ASL, it should be useful to most of us for coordinating microwave contacts from Cincinnati to Sidney or beyond, and letting the rest of us listen in on the action. I see no reason why it couldn't also be used for informal discussions of topics of interest to MVUS members, and maybe even a more formal net, similar to what Rod, WG9F, runs on 2m SSB on Sunday mornings.

I have booked the following dates at the Olde Country for our meetings: **9/23; 10/28; 11/25; and 12/23**. The November date is the day after Thanksgiving, and the December date is the Friday just before Christmas. If you collectively feel that this latter date should be changed until after the 25th, that is OK with me.

That's all for now. Tom, N8ZM.

This and That 9-05

- **Easy Commuting.** It will not be long before the automobile will compete with the railroad, and the life of the cinder-begrimed commuter will be freshened by a rapid ride to business through the clear morning air from his countryside twenty-five to fifty miles away. [Scientific American, 1902]
- **World's Greatest Consumers.** Americans are! Why? Because we are overpaid and spoiled, which is the definition of the "Perfect Consumer". [Dale Dauten]
- **Experience.** "Experience, by the way, is what you get when you don't get what you want." [Pete Lane]
- **Don't Call.** If you want to have a nice QSO, don't call a station that has an S9 signal. He will be most likely the type that has a semi contest running trying to knock off as many "Americans" as possible. All you will hear your signal report and ...next please... [Freddie, N2II]
- **Some Numbers.** Our conscious mind operates at about 40 bits/second. Our five senses are reporting in 11 million bits/second. Millions and millions of bits are condensed to a conscious experience that contains practically no information at all. (Great news for magicians! Ed.)
[Book: The User Illusion by Tor Norretranders]
- **How Much Spam?** About 67% of all e-mail today is spam, according to statistics from e-mail scanning and security company MessageLabs Ltd. That's down from an all time peak of nearly 95% about a year ago, but still up from when the CANSPAM Act was introduced.
- **The Power is off!** If the power is off, the Internet server down or the battery drained, life comes to a standstill. [Francis Shrum]
- **2005 Fuel Economy.** Averages of all passenger cars: USA 24 mpg (Cal 25 mpg), Canada 27.5 mpg, Australia 31 mpg, China 34 mpg, Europe 40 mpg and Japan 46 mpg. [CSM]
- **Hi Fi and Stereo.** A long time ago you had sets of speakers (bass, midrange and high frequency) far apart in your living room. Now you have just one low frequency speaker and it can be positioned anywhere since it does not give you much sense of direction. Direction comes from the fairly small mid and high frequency speakers still positioned far apart. Now come TVs with stereo that is generated with two speakers only about 20 inches apart. How do they do it? The only way is to modify the phase of the waveforms. I think it's done in the set with DSP. Sure works and is impressive if the recording was done well! Gerd, WB8IFM
- **Quality Control.** It seems we are backsliding on that. Recently, I had to return two brand new TVs because they had defects. Low and behold the "Warranty" contained a paragraph labeled: "Over-the-counter exchange of initially defective units." Gerd, WB8IFM
- **Zero Spots.** Of course we will see many days, sometimes weeks, with no sunspots at all. Solar flux drops below 70 to a background level, around 67. A typical low period was September and October 1996, in which the average sunspot number was 2.6, and average solar flux was 69.3. Perhaps we'll see these low numbers again about 12-18 months from now. [ARLP038 Propagation de K7RA]
- **Katrina "Hello!"** One of or the major failures during the tragic hurricane Katrina disaster was the lack of communication. Hams got involved in a few cases. I think we all could learn a few things and be better prepared in the future. I am thinking in terms of a simple (a few channels) portable radio, like an old Icom 2AT but SSB for low frequency (75 or 160m) and a longwise antenna w tuner, extra batteries and a solar panel for charging. We would need a whole bunch of these! Gerd, WB8IFM

Glimpses of the Annual MVUS Measurements and Picnic- 28 August-2005

By Gerd, WB8IFM

Postponement: Saturday morning, on the date of our scheduled antenna measurements, Tom, N8ZM, informed me, that “management” had decided to call it off for the day due to wet grounds and more rain in the forecast. Now we were scrambling to get in touch with all the usual “suspects”. Two of them were already on their way. I could reach John, N8VZW, who had just turned south on Rt.68. But with Ed, WR8A, we were not so lucky. Although he had a cellphone with him, it was turned off! So he made it all the way to Daun’s house before getting the news.

A Beautiful Day. (Sunday) The fog was lifting, the grass was still a little wet, but the sun came out and quickly helped dry things out and make everything look bright and cheerful. I picked up Steve, K8UD, and his antennas and we were on our way to the event. We got there to find handful early birds already eager to spring into action. Let’s try to remember: there was Ed, WR8A, John, N8UR, Mike, WB8GXB, Bruce, ND8I, and, of course, our host Daun, N8ASB. They had already set up two canopies and brought out a bunch of chairs. We added a third canopy and placed it strategically so it could provide optimal shade.

To complete the attendance list: Rich, W2RG, Mike, KA8ABR, Bruce, KA8EDE, Tom, N8ZM, Ken, N8AEG, Mark, KB8ZR, Adam, N1GX, Tom, W9NBS, Bill, K9AYA, Red, W8ULC with xyl Marilyn, and, of course, Steve, K8UD and myself. It was Marilyn’s birthday and she brought a wonderful cake .

2m / 70CM Measurements. We set up a 160-foot range, the added length of my longest RG8 cables. That also got us close to Daun’s big metal storage building. Since we were using beam antennas this was probably ok. In any case, we would find out and learn. We mounted the 2 m source beam on the 26-foot mast and the 70cm beam at one-third that height. With two 11-foot poles at the other end to support the antennas to be tested we were ready!

Super Duper Equipment. When Tom, N8ZM, arrived, he backed his car close to the shelter and lugged his big Agilent N5238 network analyzer on the table. Dawn brought his HP 8753C, another analyzer good to 3 GHz, for his pattern measurements. These network analyzers are studded with push buttons and are also controllable by keyboard and mouse; in a sense; they are married to a pc. That makes operating one of those almost impossible for the average ham. I grew up with simple, mostly analog instruments and my hi-tech ones were oscilloscopes, signal generators and spectrum analyzers. The controls were labeled with terms that were understandable and more or less clear-cut. Now you’ve got “drop down menus” using terms, half of which you have not the faintest idea what they are about! So Tom and Daun, who work with these machines on a daily basis had to do the work, while we “outsiders” brought the objects and otherwise looked on.

Fuel Pump or ... Mike, WB8GXB, needed to check out a device that looked like a pump. It was cylindrically shaped and had two little couplings on top. These were, however, SMA connectors and the cylinder was a cavity for 1296 MHz. I was amazed at the low insertion loss as I compared it in my mind with a much larger cavity I built for 2m some time ago, but then the difference in frequency is almost a factor of ten.

Dual Band Vertical.. Tom, W9NBS, had a 2m / 70cm vertical to check out for SWR.

Yagis, Log Periodics, Mass-produced. Wi Fi was originally conceived for short-range wireless Internet connections at 2.4 GHz. But now there are gain antennas and amplifiers to extend the range. Daun had a few 2.4 GHz Yagis and ran patterns on them. These antennas, a product of Lucent, had their innards cleverly concealed with a plastic tube. No problem, Steve, K8UD, had the tube popped off in no time and there it was: a 16 element Yagi stamped out of sheet of aluminum, length 15 ½” (see picture). Another stamped out antenna, consisting of two pieces, was an UHF log periodic table top antenna by Phillips that I picked up at the Hamvention. I did see it featured in an article in the Scientific American on digital TV reception in New York City. It is ideal if you are just looking for the local UHF signals (470 to 806 MHz). Trying to measure the return loss (SWR) was not very successful as we had only a 6 foot 75 Ohm cable to connect the antenna to the 50-Ohm network analyzer.

The Main Event. What it this? Of course, the picnic. Tom, N8ZM, and Bruce, ND8I, got going with the preparations. As there were only two ladies, the men were not as pampered as in previous years and had to help out setting things up. As usual, Tom, N8ZM, grilled the burgers and various sausages. Although we had a good selection of all the usual stuff, coleslaw, potato salad and baked beans, the more healthy vegetables were missing. There also was a wide selection of desert sweets, and, of course, the birthday cake. So, once a year, why not!

Range Measurements. Nobody brought anything for 2m or 70 cm, but there were a few 23 cm antennas. So we placed a 23 cm source antenna, a reflector backed loop, at a height of 15 inches and a distance of 70 feet. The network analyzer power had to be cranked up to 20 dBm (100mW) to give a decent measurement range. Our reference antenna (9.5 dBd), a dual quad with reflector, registered at -45db. The first antenna, a 35 element 10 foot Yagi by M² (N1XG) read -35.5 db resulting in 19 dBd gain. Next, we had Mike, WB8GXB, with two 23 cm antennas. A 10el 24 inches Yagi measured 12.6 dBd gain and a dipole with a big (2x 28inches squared) corner reflector measured 11dBd.

Nifty Program. Our antennas to be tested were at a height of 11 feet. For this we had two poles with the upper 4 feet plastic to be hand held with the test antenna at the top for measurements. Connection to the network analyzer was by 30foot lengths of RG-8 coax. I noticed that Adam moved the antenna up and down and sideways to make sure the impinging field was reasonably uniform. Then he maximized the reading by slightly tilting the antenna forward. As I was watching from the sideline, I could actually visualize the rays of the test and source antenna meeting on the ground. Over the years we seldom have given much thought to the details of range measurement as far as field, main lobe, uniform amplitude and phase are concerned. So I was really surprised when Adam, N1GX, showed me a nifty little program that gives you all the details and lets you make instant changes.

There will be more technical information (including patterns) coming in next month's newsletter.

Pictures from the MVUS Picnic and Measurements, 21 August, 2005

at Daun, N8ASB & Karen, N8CSX's place across from the Clinton County (OH) Airport.



Steve, K8UD and Bill, K9AYA



Tom, N8ZM



Bruce, K8EDE & Tom, W9NBS



Adam, N1GX...getting the right angel...



Bruce, ND8I and John, N8UR



Bruce, ND8I, Mike, WB8GXB, Daun, N8ASB & Rich, W2RG...set-up for pattern measurement



Rich, W2RG & Mike, WB8GXB

**Annual MVUS Picnic
& Measurement Day
28 August, 2005**



Mike, KA8ABR & Red, W8ULC



Steve, K8UD, Mike, KA8ABR & Bill, K9AYA



Rich, W2RG, Mike, WB8GXB & Daun, N8ASB



Steve, K8UD with "mass produced" WiFi antenna

10 GHz+ Cumulative Report, Lake Erie (8-20-05)

Had a lot of fun. I have not even bothered to figure out a score yet. Not that important. If I send in a log and contest entry, will figure it all out. Did not bother last year. On 24 Ghz, I managed to work VUCC, that was lots of fun, and far more important and a real accomplishment. The League not printing line scores, does not encourage me to bother to make an official entry. More fun was making the microwave contacts, finding out what can be done, and trying things. Made 32 contacts. 30 on 10 Ghz and two on 24 GHz. Operated rover from 4 different locations. Longest contact was KB8U EN71 from EN92 Presque Isle. Drove something like 1150 miles. Weather made significant changes to the ideal weather plans. This is why I dislike making advance plans. Things like weather cause changes. In this case, lots of wind and rain. Thunderstorm. So, made quite a few rain scatter contacts. My station, on 10 GHz was 16W and a 2 ft dish. On 24 GHz 1W and a 2 ft dish. 2M link 160W and a 7 el yagi.

Most important lessons learned from this weekend, was #first, contact coordination. 2 Meters needed some help from big home stations to coordinate between the various groups. Just too many potential good contacts were lost for no good reasons. #Second, I would like to see more one minute cycles used. Transmit for one minute, receive for one minute. repeat. Use your wrist watch, WWV, GPS, candles, whatever works as a timer. Take even or odd minutes, and check the time, go from there. I think that would help a whole bunch make more contact attempts successful. #Thrid, small horns, 20 dB gain or so, are really helpful and useful, and should be carried and used more often. #Forth, Weather must be figured into plans. Can't be ignored. It can work with you, or against you, and mess up any and all plans. Make alternate plans. #fifth - tripple check bug repellent. Take several varieties. A couple of the places had serious bug issues.

There were several groups on Lake Erie. Two groups of VE3's. Three groups on the US side. In Michigan, us and the NY group. There were several individual stations. Notably, K8WW, WA8RJF and W2EV/VE3, who operated from the Skylon Tower Niagra Falls FN03. Ev had a really strong signal, 5W but we never heard or worked him west of Presque Isle PA. Home Stations operating included KB8U and WW8M. Saturday AM, WB8TGY, K3SIW, WA8VPD and myself started from Presque Isle EN92. The original plan, I was going to operate there for about 3 hours, then head west. Because of the rain and storms to the west, stayed at Presque Isle much longer. Worked several rain scatter, including KB8U and AA9IL and WW8M at Sterling State Park, EN81. Also worked VE3SMA on 24 GHz across the Lake. Really strong signals. We received many weather reports from stations to the west. Including radar observation. Directions of storm fronts etc. Very helpful, useful, thanks to all. We split up leaving Presque Isle. The storms affected 2M links, heavy QRN and attenuation.

K3SIW headed East to FN02. We headed west to Perry Park EN91 and hooked up with WA8RJF. Here, the storms and winds picked up. Worked more rain scatter. Watched the Storms on the lake move in. Heavy rains. 3 inches reported overall. We got rained out for over an hour. Heavy rain, wind, thunder and lightning. Took my small portable unit under the pavillion with a small horn, battery, and did some rain scatter. Listening, there was serious QRM on 10368.100. Something like I would describe what a DX station hears from the US in pile ups. 20 over noise, and occasionally, one could pick out a letter or two. Unbelievable signals. Looking at the clouds with the horns, we found hot spots. Hot clouds if you will. They did not follow the "rainbow arc" theory. Signals and signal paths were in all sorts of strange directions. The only rain scatter we managed to work, was stations NOT on .100 Winds really got in the way of dishes. Flag straight out flat winds here. Again, horns were easier to use and aim. Leaving West for home, We were plagued by high winds heavy rains and thunder storms all the way home, and gave up further operating or even trying at any other locations. Just too windy, too rainy too much thunder and lightning. Sunday AM, we set up at Sterling State Park, EN81, and made a bunch of contacts. At least more sunny and clearer skies. Still windy. Sunday AM, we had a normal Lake Erie trop opening. It was strong, but did not last very long. Making good advantage of it was a problem. Working K8WW and KB8U, they were extremely loud, and it did not matter where the antenna was aimed. WW8M, who was 40 miles closer to Lake Erie, but 30 miles north of KB8U, was s5, and hard to work. KB8U and K8WW were in the duct, WW8M was not (Also, it was raining at his location). Heard W9ZIH and W9SZ in Chicagoland on 2M, but, the duct closed too quickly to try them. Tried 24 GHz with VE3SMA, but, no luck. Several overland paths simply did not work out. On the way to Sterling, Heard and worked EM86 on 2M, but got to the Park too late to try working them on 10 GHz (7:30AM). By 10 AM, it was back to basic dead band. After noon, went to Marblehead, and WB8TGY and WA8VPD set up. They were smart, and stuck with horns. I went on to Vermillion and K8WW. With all the rains, runoff, the Vermillion river "colored" part of Lake Erie. Quite something to see. The Winds here were very heavy duty also. Extremely hard to use a dish. Flags again, flat, straight out, again. 2M links even suffered. Problems like QRN from antenna static build up. Other problems. Such as watch where you put your laptop computer. What is happening. Can be the source of interference on a 2M link. Then I drove back to Perry Park, and made a couple more contacts. Toward sunset, was hoping the winds would die down. They did not, so gave up and drove back home. Really pretty sunset over Cleveland and Lake Erie. Until next month. Heading to Northern Lake Michigan.

Lloyd Ellsworth, Ne8i e-mail: ne8i@arrl.net

History of Microwave Update (08-07-2001)

By Al Ward W5LUA

In 1985, Don Hilliard, W0PW, felt the need to organize a conference dedicated to microwave equipment design, construction, and operation. At the time of its conception, many microwave terrestrial and EME firsts were occurring on the microwave bands and it appeared that microwave needed a dedicated conference. Don held the first conference, which he named "The 1296 and 2304 MHz Conference". It was held at the Holiday Inn in Estes Park, Colorado. 66 people were in attendance. It sure seemed like Don was on the right track with his idea and he was right. In 1986, Don held the second conference, which he rightfully named "Microwave Update 86". 64 people were in attendance. The 1987 and 1988 "Microwave Update" conferences were again held in Estes Park, Co. and chaired by Don Hilliard.

After putting on 4 fine conferences in Colorado, Don decided to take a break from all of the work. Don turned over the responsibility of coordinating the event to the North Texas Microwave Society (NTMS).

In 1989, WB5LUA and WA5VJB of the NTMS hosted the 5th "Microwave Update" in Arlington, Texas where 94 people were in attendance. The 1990 "Microwave Update" was to go back to Colorado where Keith Ericson, K0KE and Don Lund, WA0IQN, were to head up the event. Unfortunately, Don Lund passed away during the year and Keith decided to postpone the 1990 Update. WB5LUA and WA5VJB of the NTMS hosted "Microwave Update" 91 in Arlington, Texas.

"Microwave Update" '92 was held in Rochester, New York and sponsored by the Rochester VHF Group. The conference was chaired by Frank Pollino, K2OS and Dave Hallidy, K2DH (x KD5RO/2). "Microwave Update" '93 was held in Atlanta, Georgia. The conference was organized by Jim Davey, WA8NLC, and assisted by Rick Campbell, KK7B and Charles Osborne, WD4MBK. "Microwave Update" '94 was brought back to Estes Park, Colorado where it was chaired by Bill McCaa, K0RZ. Bill was assisted by Al Ward WB5LUA, Jim Davey WA8NLC, Jim Starkey, W0KJY, Phil Gabriel, AA0BR, and other local area amateurs. "Microwave Update" '95 was brought back to Arlington, Texas and was chaired by Al Ward WB5LUA and Kent Britain WA5VJB of the NTMS. The 96 "Microwave Update" was held in Phoenix, Arizona and was chaired by Jim Vogler, WA7CJO. The '97 "Microwave Update" was held in Sandusky, Ohio and sponsored by Tom Whitted, WA8WZG, with the assistance of Tony Emanuele, WA8RJF. The 1998 "Microwave Update" was held in Colorado under the guidance of Bill McCaa, K0RZ, and John Anderson, WD4MUO. The 1999 "Microwave Update" was held in Plano, Texas with Al Ward, W5LUA and Kent Britain, WA5VJB hosting the event.

The 2000 Microwave Update was held in the Philadelphia area with John Sortor, KB3XG, and Paul Drexler, W2PED hosting the event. The 2001 Microwave Update is being hosted by Jim Moss, N9JIM and Will Jensby, W0EOM, in the Sunnyvale, California area. The 2002 conference will be held in the New England area with Paul Wade, W1GHZ as the host. The 2003 event is scheduled to move to Seattle, WA with NU7Z as the host. Future conference locations include the Washington, D.C. area and the Dallas/Ft.Worth area.

Those that are interested in sponsoring a conference may contact myself, Al Ward, W5LUA or Kent Britain, WA5VJB.