ATCO NEWSLETTER

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ATCO HAM IN THE SPOTLIGHT

OK, you guys asked for it. (Well, maybe you didn’t, but here I am anyway)! I’ve been publishing the ATCO Newsletter for over 10 years now so I decided that it’s finally my turn. I’m not trying to take the spotlight away from anyone else but as I went back through my list, I believe I’ve included every local member that has had video on the air at one time or the other. So now I ask, “Let’s get out there and introduce other potential ATVers to this wonderful hobby so I can travel to other places for my pictures. Thanks!

…Art, WA8RMC

ACTIVITIES ... from my "workbench"

Here we go again. Another quarter of the year…another ATCO Newsletter. Non ATV related tasks have been interfering with ATV this time so this Newsletter has been harder than normal to complete. I am running late and am sorry but I have pleanty of material to go through so that stretches things out a bit. Bear with me. There have been plenty of things happening so this column should be full but many things are covered elsewhere in this Newsletter so I'll be brief here.

As all of you know by now, the ATCO/DARA repeater link project has been on the front burner for over 2 years. I've reported this activity before but this time I can say it's up and running now. Adam and I installed the equipment June 25 and did some fine tuning on July 10. We raised the 1200 antenna up the tower 15 feet more and replaced it with a higher gain one. We picked up about 1 P unit but for some reason it's still at the P3 to P4 level. Once upon a time we transmitted P5 pictures back to Columbus with a 10 watt transmitter. Now it's at least 1 P unit less with twice as much power. The only thing I can say is that our P5 10 watt test was in early November and if my memory serves me correctly, there are no leaves on the trees at the time. We did a site analysis then which said we had plenty of signal but maybe my math is failing me. Oh well, we'll figure it out. At least it's working. The 910 transmitter at the DARA end to send signals back to us is not complete but at least we can operate through the remote 439 input at South Vienna as some have already. More details are located later in this Newsletter.

We have had trouble with the digital transmitter. When I added the second digital channel, all of the video became intermittent which I traced to a defective second channel MPEG encoder board. Temperature testing revealed that the MPEG encoder IC on that board was bad so I elected to change it myself rather than send it back to the Netherlands for warranty replacement. Phillips sent me 2 sample IC's so I decided to give it a try. It turned out to be a bad decision because its replacement presents the same problem. Now I'm asking the board desigher to send me enough details so I can troubleshoot it myself. See what I've gotten myself into? Trying to save us time is only causing more work and time. Well, I can't back up the clock so I'll press on. More later when I get a board that works.

A board in the 1250 analog transmitter power supply has been intermittent lately. There are three 300 watt computer power supply boards in series to make a 13.5 volt 25 amp power supply using the 5 volt outputs turned down to 4.5 volts on each supply. The middle board shut down after a power outage so I made a trip to the repeater to reset it. Two weeks later the same thing happened so I searched for a replacement power supply board. Those boards with 5 volts at 30 amps are not common anymore but Roger, WB8DZW came to the rescue. The 1250 MHz output, which was running at a 8 watt level with one board bad, is back to its 55 watt output level again. This will help the ACTO/DARA link because we transmit our signal to them on 1250 MHz. They should be getting P5 pictures now.

We still have an intermittent problem with the 2.4 GHz output. Sometimes it's ok and at other times the signal drops to the milliwatt level. I've tried to repair the intermediate amp which I know is the problem but each time I feel I've found and fixed the problem, it reappears again a few weeks later. I might just call it quits, buy a new amp and throw this one as far away as I can. That will make me feel a lot better!

The rework of the 439 receiver incorporating a 1280 MHz receiver and a 1265 MHz digital receiver is still on the bench waiting for other projects to be completed. I have too many things "half done" so I'm going to concentrate on other things first then back to the receiver project. Stay tuned.

I've found that the Comtech transmit boards have a low frequency problem that prevents them from reproducing the vertical sync properly. As a result, the 1250 MHz signal, which contains a Comtech board, has a rolling problem. I will try to contact Comtech to see if they have a fix for it. If not, I will try to dive into it myself. I've looked at it sufficiently to pretty well determine that it's a phase lock loop problem and not easily solved. If any of you want to take on an investigation project, let me know. I'll fill you in to where I'm at right now.

One last point not construction related. As you know, some of the Newsletter pictures do not reproduce well with "office" copiers. It would take a professional printer to do better so under the present circumstances, it's the best I can do. For that reason, I invite you to also view the ATCO Newsletter on line for a full color full resolution representation. It's available to all ATCO members at www.atco.tv.

That's all for now folks. Time to relax and have a nice cold beer….see ya.
…WA8RMC

MOTOROLA UNVEILS CARBON NANOTUBE FLAT-PANEL TV DISPLAY

MANHASSET, N.Y. — Motorola Labs, the applied research arm of Motorola Inc., on Monday (May 9) unveiled a prototype color display based on carbon nanotube technology. Motorola said its prototype could lead to development of large flat-panel TV screens that cost less but sacrifice no performance compared with existing displays.

Called nano-emissive displays (NED), the technology stems from ongoing research conducted by Motorola Labs (Schaumberg, Ill.) on using carbon nanotube technology for flat-panel displays. The company built the prototype after developing a scalable technology designed to grow carbon nanotubes directly on glass. Other research efforts aimed at using carbon nanotubes to fabricate displays use a less efficient pasting method to attach the nanotubes on the glass, according to Vida Ilderem, vice president and director of Motorola's Embedded Systems and Physical Sciences Center of Excellence.

"We believe our solution is less expensive than field-emissive displays and plasma displays," said Ilderem in an interview with *EE Times*. "We're aiming at large displays for the TV" market. Ilderem said the displays could be manufactured using most of the same display production equipment used for CRTs, with some modifications for chemical vapor deposition and catalyst deposition.

The 5-inch NED prototype will be displayed at the upcoming Society for Information Display Conference in Boston later this month. It measures 1/8-inch thick and has comparable or better viewing characteristics than CRT displays, according to Ilderem, who provided no specific numbers.

Shifting NED technology from the lab into production is likely to present the next hurdle for Motorola, which does not manufacture displays but licenses technologies developed in its lab to external customers. Ilderem said Motorola was in discussions with several undisclosed display makers, but declined to elaborate.

Several industry observers, including analysts Kimberly Allen of iSuppli Corp. and Barry Young of DisplaySearch Inc., said Motorola's NED technology has the potential to amke a splash in the TV market. Young cited a cost analysis conducted by DisplaySearch that estimates a 40-inch NED panel could be manufactured for under $400.

Still, Motorola faces an uphill climb in the 40-inch and higher TV market, where both rear-projection and plasma technologies are already competing and suppliers are continuing to lower prices. Moreover, LCD makers are watching this sector as their next-generation fabs continue to come online.

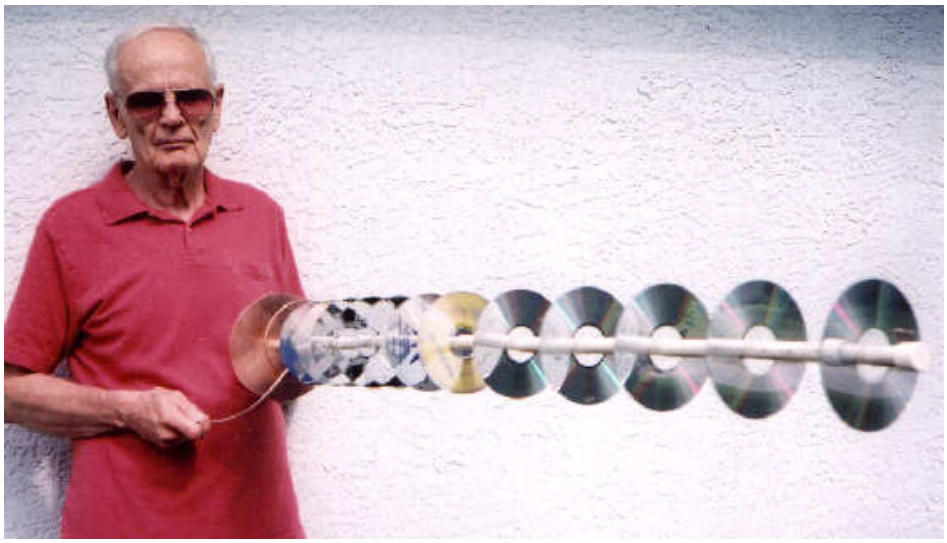
What's more, developers of surface-conduction electron-emitter displays (SEDs), which use field-emissive display technology, are also seeking to carve out a niche in the large TV market.

Canon and Toshiba formed a joint venture company, SED Inc., last October to produce SED technologies the partners have been developing for several years.

Spencer Chin EE Times (05/06/2005 4:27 PM EDT)

W8DMR CREATES SPECIAL CIRCULARILY POLARIZED ANTENNA!

First the Maxwell House coffee can antenna and now this! What will happen next? In any case, leave it up to Bill to create a most special antenna. I asked him to come up with a simple circularly polarized antenna and look what I got. He took it directly to the "lab" and voila, presto! ED.



Bill says, " It does have gain, acceptable VSWR, and exhibits directivity. To bad the peak resonance is not in the 33 cm band. The CDs will require some additional diameter reduction to achieve that. The now obsolete CDs issued by CompuServe exhibit a slight gain increase over using the early AOL disks. This configuration of a parasitically excited antenna is commonly referred to as a "Disk & Rod" antenna. Still being researched is to figure out just why this antenna only works best when connected to the Internet".
(My xyl says, "Retired engineers don't idle well.")
…Bill, W8DMR

ATCO SPRING EVENT…fun for all

AHHHH, here we are at the Spring Event at last! But wait, it looks different this time. It's the same friends but a new location. Our traditional location for the last 10 years or so has been sold and now is the property of The Ohio State University. Ken, W8RUT has now arranged for us to locate in the new ABB quarters off Cleveland Ave in Westerville. What a great location! It's new, spacious, indoor and air-conditioned. Now we won't have to plan our events around favorable weather, providing Ken will allow us to meet here in the future.

We had a great turnout this time and to my knowledge, no one got lost finding the new location. All had a great time. In case you missed it this last spring, plan to join us in the fall. The pictures below illustrate the great surroundings.

Above is a glimpse of the surroundings and participants relaxing and enjoying themselves.

To the left are some of the door prizes to show the people who did not attend what they missed. After all, some hamfests don't have this much stuff!

THE NEW DIGITAL NASA TV - NASA TV WILL SOON BE DIGITAL!

When is the Change?
Sometime in early May NASA TV will convert from its current, single analog NTSC channel to multiple channels of Standard Definition MPEG-2 digital video. (In preparation, we'll be doing extensive on-air testing. Our current analog NTSC service will still be available through late June to give everyone time to switch to Digital NASA TV. General information is directly below, or you can jump down this page to specialized information:

+ For Cable or Satellite Service Subscribers
+ For Satellite Dish Owners
+ For Educators
+ For Media
+ For Cable or Satellite Service Providers

What will be different?
The new Digital NASA TV will have four digital channels:

1. NASA Public Service ("Free to Air"), featuring documentaries, archival programming, and coverage of NASA missions and events;
2. NASA Education Services ("Free to Air/Addressable"), dedicated to providing educational programming to schools, educational institutions and museums;
3. NASA Media Services ("Addressable"), for broadcast news organizations; and
4. NASA Mission Operations (Internal Only)

Note: The new Digital NASA TV channels may not always have programming on every channel simultaneously.

Why the change?
The new Digital NASA TV system will provide higher quality images and better use of satellite bandwidth, meaning multiple channels from multiple NASA program sources at the same time.

Will I still be able to watch NASA TV on the Web?
Yes, the new digital NASA Public Service Channel will be streamed here on the Web. All you'll need is access to a computer.

I get NASA TV from my local cable or satellite service provider. Do I need to do anything?
You should be all set, although you may want to check with your local cable or satellite service provider whether it plans to continue carrying the NASA Public Service "Free to Air" Channel.

I already have my own C-band-sized satellite dish. What else do I need to get the digital NASA TV public channel?
If your C-Band-sized satellite dish is capable of receiving digital television signals, you'll still need a Digital Video Broadcast (DVB)-compliant MPEG-2 Integrated Receiver Decoder, or IRD, to get the new Digital NASA's Public Service "Free to Air" Channel.

An IRD that receives "Free to Air" programming like the new Digital NASA Public Service Channel can be purchased from many sources, including "off-the-shelf" at your local electronics store.

The new Digital NASA TV will be on the same satellite (AMC 6) as current analog NASA TV, but on a different transponder (17). In Alaska and Hawaii, we'll be on AMC 7, Transponder 18.

Here is additional satellite information you may find helpful:

Satellite Downlink for continental North America:
Uplink provider = Americom
Satellite = AMC 6
Transponder = 17C

72 Degrees West
Downlink frequency: 4040 Mhz
Polarity: Vertical
FEC = 3/4
Data Rate r= 36.860 Mhz Symbol = 26.665 Ms
Transmission = DVB
"Public" Programming: Program = 101, Video PID = 111, Audio PID = 114
"Education" Programming: Program = 102, Video PID = 121, Audio PID = 124
"Media" Programming = Program = 103, Video PID = 1031, Audio PID = 1034
"SOMD" Programming = Program = 104, Video PID = 1041, Audio PID = 1044

I'm an educator who works for a school, educational institution or museum. What equipment will my organization need to get the digital NASA TV education channel?
If your group already has a C-Band-size satellite dish capable of receiving digital television signals, you'll still need a Digital Video Broadcast (DVB)-compliant MPEG-2 Integrated Receiver Decoder, or IRD, to get the new Digital NASA Education Services "Free to Air" Channel.

An IRD that receives "Free to Air" programming like the new Digital NASA Education Services Channel can be purchased from many sources, including "off-the-shelf" at your local electronics store.

Occasionally, the new Digital NASA Education Services Channel may provide its programming in an "addressable" format. If your institution were to purchase an "addressable" IRD with "store-and-forward" capabilities, the new Digital NASA Education Services Channel could, from time to time, "address," or send specific programming to your IRD's hard drive for playback and use at your convenience. No need to monitor NASA TV at a specific time each day with your tapes rolling. For technical specifications and pricing, visit http://www.nasadigitaltv.com.

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Here is additional satellite information you may find helpful:

Satellite Downlink for continental North America:
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Transponder = 17C

72 Degrees West
Downlink frequency: 4040 Mhz
Polarity: Vertical
FEC = 3/4
Data Rate r= 36.860 Mhz Symbol = 26.665 Ms
Transmission = DVB
"Public" Programming: Program = 101, Video PID = 111, Audio PID = 114
"Education" Programming: Program = 102, Video PID = 121, Audio PID = 124
"Media" Programming = Program = 103, Video PID = 1031, Audio PID = 1034
"SOMD" Programming = Program = 104, Video PID = 1041, Audio PID = 1044

LNB Recommended Minimum Specifications:
Frequency Stability: +/- 1.0 MHz
SSB Phase Noise:

Offset	dBc/Hz
1 kHz	-60
10 kHz	-75
100 kHz	-85

Voltage: 15 to 24 VDC
Current: 100 to 250 ma.

GLOSSARY OF TERMS
"Addressable" – A type of IRD (Integrated Receiver Decoder) that can not only receive "free to air" digital TV signals but can also receive and store specially encrypted programming for rebroadcast.
DVB – Digital video broadcast.
FEC – Forward Error Correction
"Free to Air" – A TV channel that local cable and satellite service providers are "free to air" at no cost. Your basic, commercial "off-the-shelf" IRD can tune a "free to air" digital TV channel, provided you have a C-Band-size satellite receiving dish.
IRD - Integrated Receiver Decoder, a piece of equipment used to tune a digital TV signal.
LNB – Low Noise Block/Converter.
NTSC – National Television System Committee. The group responsible for setting the television and video standard used in the United States. NTSC also refers to the standard itself. (In Europe and elsewhere, PAL and SECAM are the dominant standards.)
PID – Program Identifier
SOMD – Space Operations Mission Directorate
TBD – To Be Determined.
NASA will update this Web page as new information becomes available.
Questions? Concerns? E-mail TVSurvey@msfc.nasa.gov.

2005 DAYTON HAMVENTION…a great time again this year.

Another year…another Dayton. Everyone seems to emphasize something different and that's OK for each person has his or her special interests. However, the flea market always seems to occupy a major part of each of our time. As a result, the WU8O provided trailer and the ATCO paid spaces are always popular for all of us. Besides the "junk gathering " routines, this place is great to gather, rest and socialize. Thanks Tom for the use of the trailer.

The ATCO space is shown at the right with all of the "junk" yet to sell. Notice the special treat this year…blue sky and NO rain all weekend!

Below is the Saturday ATV forum where Ken, W8RUT and I presented details about our repeater.

Above, Bill, W8DMR, our gracious host, has just passed the mike to Tom, WA6SVT who talked about the ATVN activities in California.

Above right, Bill Brown WA8ELK describes his balloon launch and NASA experiences.

Finally directly right is a partial view of the ATV crowd in attendance. I estimate there were about 200 participants.
…WA8RMC

DAYTON HAMVENTION REPORTS 2005 ATTENDANCE UP SLIGHTLY

Dayton Hamvention 2005 General Chair Gary Des Combes, N8EMO, told ARRL this week that attendance was up by 542 this year over last. The total "official" attendance was 20,411, compared to 19,869 for 2004. The 2004 figures indicated the lowest attendance for this event in decades. The all time high for attendance was posted in 1993, when 33,669 persons attended this world famous event.

"We heard from many exhibitors who sold out of everything they had and were taking orders as early as Saturday noon," Des Combes said. "In fact I was told by several exhibitors that this was their best show ever." The ARRL 2005 National Convention, which Dayton Hamvention hosted, "pushed the bar way up," he added.

"Virtually everywhere I turned, people were happy," Des Combes continued, while conceding that the vacancy level in the exhibits area and the flea market "were not what we wanted." He chalked that up in part to high gasoline prices--something beyond the control of Hamvention's planners—and a dearth of smaller computer vendors who no longer can compete with the big box stores.

But Des Combes said he was heartened that the vast majority of his e-mail since the show has been positive, "thanking me and expressing how great the show was and they will be definitely be coming back next year," he said. Des Combes expressed confidence that 2006 General Chairman, Jim Nies, WX8F—this year's assistant general chair--will work hard to promote Dayton Hamvention and ARRL and Amateur Radio as well.

"I sincerely will miss it, but it is time for me to pass the torch to a new leader," said Des Combes, who stepped into the top job two years ago and guided Hamvention back to an all-volunteer show. "I have accomplished all the goals I set out to do and feel I am going out on top, so now is a good time."

Dayton Hamvention 2000--the last year Hamvention hosted an ARRL National Convention--logged 28,804 attendees, up modestly from the previous year. The all-time attendance record for Dayton Hamvention reportedly was 1993, when 33,669 showed up.

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Even though many spaces went unsold outside, in the flea market area, as well as inside the arena, most dealers recorded doing a very high volume in sales and were taking orders on Saturday. This could be looked at in several ways. Did the best weather in many years spur more interest or did dealers bring less merchandise with them to sell due to steadily declining attendance figures?
Hamvention planners stated one reason for the lower attendance of flea market vendors was due in part to higher fuel costs. Only time will tell.

It could be partly attributed to the higher cost of the spaces inside and outside. Outside spaces ran from $70.00 for a single space to $1040 for eight spaces, while a single inside space cost $635.00- or $570.00 in advance.

REPEATER DESENSE…LISTEN TO THIS QUESTION/ANSWER DIALOG

Mark (KB9KHM) asks why he has receiver desense at his repeater. It's applicable to other situations also. ED.

I finally got all the pieces and parts for my repeater. I'm using 421.250 out, 434.000 in. I've got a TXRX duplexer, and 2 10 pole DCI VSB filters (one for 421.250 and one for 434). On the transmit side I have a cable modulator, a Blonder Tongue distribution amp, a PC Electronics 10 watt brick, and an RF Concepts 4-110. On the receive side I'm using an Olsen OTD-2000 demodulator.

I can't run more than about 3 watts or so without desensing the receiver. I'm measuring the wattage with a Yaesu YS-500 between the duplexer and the antenna - and I have it set on the 'average' setting. I've tried both a Standard SCM470 modulator and a Blonder Tongue AM60-450 - both give similar results. When the audio subcarrier in the modulator is turned on, the situation gets a lot worse ... in that case I can't put out more than about 1/4 watt. I have found (using either modulator) that an image of the audio carrier (normally at 425.775) is produced (VERY strong) at 430.250. I can receive the 430.250 images with my HT in the basement at full scale. I'm testing the repeater at home and I'm using a single M2 ATV beam for the antenna. In addition to the SWR meter being in line between the duplexer and the antenna, there is also a Mirage mast mount pre-amp and bias tee (turned off of course).

Taking the RF Concepts Amp out of line and driving the PC Electronics 10 watt amp to 3 watts causes the same problem. Taking both the PC Electronics and RF Concepts amps out of line and running with just the modulator and distribution amp (with the audio carrier turned on) also caused desense. Using only the modulator and PC Electronics amp also causes desense. (I've tried about every possible combination here and can't make the problem go away.)

I'm using another ATV transmitter in the shack on 434 (real weak signal level) to test the RX sensitivity. If I disconnect the coax between the demodulator and the RX VSB filter (at the VSB filter end), the desense completely goes away. So, I'm reasonably sure that the TX signal isn't getting to the demodulator via the power cord, or video out cable (demodulator has its own internal AC power supply). I can then take the loose end of the coax leading to the demodulator and touch it's center conductor to the shield of the coax

connectors in the transmitter chain and receive the local 434 signal GREAT with no desense what so ever, so I'm also reasonably sure that none of the TX coax jumpers are "leaking".

Both of the VSB filters are brand new, and I just got the TXRX duplexer back from the factory (had them re-tune it). The duplexer plot indicates that the attenuation between the RX and TX ports is better than 68db.

Does anybody have any suggestions on how to eliminate the desense? I'm running out of idea's here. I'm open to any debugging suggestions. Is there something obvious I'm missing? Are there some 'magic' coax lengths that I need to use between the VSB filters and the duplexer?

Thanks in advance for any hints or suggestions!
… Mark (KB9KHM)

Mike WA6SVT responds as follows:

Hi Mark! This is Mike WA6SVT.
Sorry to hear about the desense issues. You did give lots of good information, so I may be able to help. I have a question, what type of coax is used as jumpers? I hope you are using double shielded ones with type "N" or BNC etc.

I am familiar with your equipment as described. The DCI filters should clean up any out of channel issues. The duplexer is fair. You did not mention were the TX equipment is located as compared with the RX equipment.

The likely cause is an RF ground loop that allows the signal to get back into the receiver.

I recommend the following:
1. Add a ferrite decoupler to the AC cord on both the receiver and transmitter as close to the back panel as possible (1/2 " or less).
2. Add a 150 pf to 180 pf disc cap with very short leads on the video input on the modulator and the receiver's video out.
3. Add 470 pf disc caps to all audio connectors on both the modulator and demodulator to ground (if balanced audio both sides to ground.
4. Add ferrite beads (one each) to the audio and video wires in both the mod and demod next to the bypass caps added above.
5. Add 470pf 500 to 1 KV rated voltage to the AC power input to ground with short leads and add the ferrite beads as above. Some units have a IBM style connector for power with a built in RFI filter.
6. Keep the RX unit (I recommend adding a GasFet preamp in front of the demod to get full sensitivity) and DCI input filter away from the transmitter.
7. All power and driver amps must have the DC power leads bypassed if possible with feed through caps and use double shielded cables.
8. The chassis on some ham amps are not designed for repeater quality shielding. This may need to be addressed by taking the board out and installing it into a RF tight box.
9. If you have a spectrum analyzer, take a cable with some center conductor and dielectric sticking out (a few inches) as a sniffer probe and with the transmitter and all filters in place and transmitting into a UHF dummy load check for RF leakage. You should have 80 dB or better shielding.
10. The receiver can be turned on and looking into a monitor see no sync bars just clean snow.
11. You may have difficulty trying to get 434 and 421 off the same antenna, so if possible use separate with 20 feet minimum separation and use hardline or LMR type shielded cables.
12. If the main power amp is rated at 100 watts, it is probably saturated at 100 watts. with no modulation turn the RF drive level on the modulator to 60 watts, and then turn on the video. The aural carrier needs to be set (with no video modulation) to 13 dB below visual carrier. If the injection is to high, this can cause strong intermod products that will get into 434 MHz receivers and cause out of band issues below 420 MHz.

I can be reached directly at WA6SVT@aol.com and on the ATN website www.atn-tv.org under the ATV forum section.
Good luck,
…73s, Mike

CW OPS WHIP “WHIPPERSNAPPER” TEXT MESSENGERS ON NATIONAL TV

It may have been Friday the Thirteenth, but it was a lucky day for Morse code--and particularly for veteran CW contest ops Chip Margelli, K7JA, and Ken Miller, K6CTW. During a May 13 appearance on NBC's The Tonight Show with Jay Leno, the pair was able to pass a message using good old fashioned Morse code more rapidly than a pair of teenaged text messengers equipped with modern cell phones. The victory, which replicated a similar challenge that took place recently in Australia, has provided immense encouragement to Amateur Radio's community of CW operators, who been ballyhooed the achievement all over the Internet. The text messaging team consisted of world text-messaging champ Ben Cook of Utah and his friend Jason. Miller said afterward in a reflector posting that the CW team won fairly handily.

"Ben was just getting ready to start entering the last two words when I was done," he said on the Elecraft reflector in response to various questions he's received following the TV appearance. "I already knew that 28-30 WPM would easily keep us in front of even the current world [text messaging] record holder, and also it is the fastest speed that I can make nice readable copy on paper with a 'stick' [pencil]." Miller said it was decided he'd be on the receiving end because he wasn't distracted by the noise in the studio.

Margelli recalls that he was sending at 29 WPM. "I believe the goods were suitably delivered," he told ARRL. "CW and old guys rule!"

What the viewing public didn't know was that Margelli and Miller had, in Miller's words, "smoked 'em every time" during three pre-program rehearsals. Even so, during the real thing, when Miller raised his hand to signal he'd copied the CW message successfully, Jason's jaw dropped. None of the players had any idea of the text they'd be sending, Miller noted. The message? "I just saved a bunch of money on my car insurance."

As with many Tonight Show bits, this one involved a member of the audience, a young woman named Jennifer who predicted--incorrectly as it turned out--that text messaging definitely would top 170-year-old Morse code. She walked away with a gift of restaurant tickets anyway.

Margelli says the CW team used Yaesu FT-817 transceivers--one of his own and another owned by Dan Dankert, N6PEQ. Backup units--not needed--were provided by HRO; Margelli's wife Janet, KL7MF, manages an HRO store. They ended up using 432.200 MHz as an operating frequency in order to avoid RFI from the plethora of TV equipment in the studio and to avoid interfering with NBC's gear. They ran the little transceivers at their lowest power level and with the antennas disconnected--although they were mounted on the back of each unit--no problem given the close proximity involved. Margelli sent with a Bencher paddle.

To add a little atmosphere to the affair, NBC producers attired Margelli and Miller to look like 19th-century-era Western Union or railroad Morse telegraphers. The costumes came complete with green visors, white shirts, sleeve garters, vests and bow ties. The teenaged SMSers wore T-shirts and jeans.

Cook told Leno that he'd managed to send a 160-letter message to his friend using his cell phone's short message system (SMS)--the formal term for text messaging--in 57 seconds.

A member of the Morse Telegraph Club and a QRP enthusiast, Miller said he'd been using CW for 38 years. Margelli told Leno he'd been using Morse "for 43 years in ham radio," a phrase Leno echoed. That was the only plug Amateur Radio got during the appearance on the show's "Dinner for 4" segment. Miller says that during rehearsal, the pair had come up with a few lines to promote ham radio and telegraphy, but they were cut during the final dress rehearsal in the interest of making the segment fit its allotted time slot.

During the Australian competition in April, a Morse team consisting of 93-year-old former post office telegrapher Gordon Hill--the sender—and 82-year-old Jack Gibson--the receiver--topped 13-year-old SMSer Brittany Devlin. In that event, Hill spelled out the message in full, while Devlin used text-messaging shorthand. In that competition, held at the Powerhouse Museum in Sydney, Hill took 90 seconds to send the message, 18 seconds faster than Devlin's message took to reach her friend's cell phone.

Miller encouraged all who enjoyed the CW-vs.-text messaging segment on NBC to contact The Tonight Show to let the producers know about it--with an eye toward having the network schedule a more elaborate segment "next time."

"Thanks for the kind comments from all," Miller concluded, advising "let's keep on having fun!--It is a hobby after all."

Commented Margelli to ARRL: "I completely agree with my fantastic teammate, Ken Miller. It was a lot of fun, just like ham radio, and the show also delivered an important, if subtle, message about the benefits of the 'basic' communication infrastructure that Amateur Radio provides."
…Source unknown

EUROPEAN UNION TARGETS 2012 FOR PHASING OUT ANALOG TERRESTRIAL TV BROADCASTING

While U.S. broadcasters focused on the DTV Transition Act of 2005 (see NewsBytes article Subsidies Are Sticky Point in DTV Draft Bill) that would set Dec. 31, 2008 as the date for shutting down full service analog TV broadcasting in the United States, European regulators looked at ways to speed the "analogue switch-off" across Europe.

A Communication from the Commission of the European Communities on accelerating the transition from analogue to digital broadcasting proposes establishing the beginning of 2012 for the switch-off of analog terrestrial broadcasting. In the press release Commission expects most broadcasting in the EU to be digital by 2010. Announcing the Communication, Information Society and Media Commissioner Reding said, "By recommending 2012 as EU deadline for the digital switch-off, I would like to give a political signal to market participants and customers alike that digital TV will soon be a reality. The sooner we complete switchover, the sooner our citizens and businesses will benefit."

Additionally, Reding said pan-European coordination of spectrum use will provide citizens with new services--mobile "datacasting" of videos or multimedia content and that most EU member states have decided on 2010 as the switch-off date and six have selected 2012. The Communication identifies two main obstacles to a rapid switchover to digital: "in the political arena: absence of political decisions such as national switch-off or political decisions not to set up switch-off dates, and a lack of European approach and policy; in the economic/market arena: need for a large installed base of receivers; poor consumer demand based on lack of incentives to switch (lack of perceived added value, cost of receivers, etc.); a reluctance, based on financial risks, from operators to invest."

The Communication lists factors that contribute to a successful switchover policy. The Commission's analysis found that while the switchover process should be market driven, "broadcaster coordination is needed to achieve a smooth technical and commercial implementation (e.g. compatible timetables)." The Communication also notes that having an effective strategy to inform consumers about program availability about digital platforms and the equipment is crucial. Retail prices of digital receivers and set-top boxes have fallen making the cost of digital television equipment less of a concern for most citizens, according to the Communication.

The Communication also addresses the question of what to do with the spectrum recovered once the switchover is complete. Options include new or improved broadcasting services such as HDTV, convergent services combining features of mobile telephony and terrestrial broadcasting such as mobile datacasting, and new electronic communication services such as wireless local area networks and metropolitan area networks that are different from today's fixed and mobile services. However, the Commission acknowledges there could be a scarcity of spectrum during the transition while digital and analog signals are simulcast.
In discussing future use of the spectrum now used for analog TV broadcasting, the Commission warns it will be important "to not constrain unduly the reuse of these bands." "A key action for the EU and its Member States in the Regional Radiocommunication Conference in 2006 and the World Radio Conference in 2007 is to maintain the possibility of flexibility of use for the ex analogue TV bands." The Communication notes, "While flexibility of allocation is needed, it is not necessary to decide at this stage how any spectrum dividend might be assigned to individual users.
… From RF Design 6/1/05 Date posted: 2005-05-31

TV CH4 HAS PROBLEMS…Now I feel better about our repeater!

June 30, 2005. To let you all know, early in July we will be shutting down our DTV transmitter for at least 48 hours. The exact date isn't known quite yet. We are going to be replacing the output filter that protects the commercial UHF two-way radio services. This particular filter is the one that prevents us from making full output power. Arcing occurs inside the filter at high power, (which is not a good thing). The old unit has to be disassembled, gently, and the new one inserted into the frame. The new filter weighs a ton.

Transmission will not be possible during this time. We can't even run a low power transmitter without this filter. Normal broadcasting will be on the cable companies as usual. If all of the math works out, we will be at 902KW when we're finished. I'll let you know the exact day we will drop. One last thing, 48 hours is an estimate. Could be more, could be less. Whatever it takes to, "gitter done".
…Shaun Strahm Engineering Manager NBC4 Columbus.

July 25, 2005. Power Transformer destroyed . WCMH DT is down until AEP replaces the main transformer that services the Twin Rivers Drive area. The digital transmitter is not powered by the diesel generator. This generator can only handle the analog transmitter. We'll be back as soon as we have electricity. The power feed to the WBNS facility was heavily damaged. This was not due to storms, but extreme loads on a hot day. It took all night and into the morning hours to rebuild primaries and distribution panels. We finally got back on the air with our digital at 7:30 this morning.

I was able to get some sleep in preparation for the final tweaks to our UHF filter today. Everything happens all at once around here. While we're working on the filter we will periodically drop off the air.
…Shaun Strahm Engineering Manager NBC4 Columbus.

2005 ANNUAL ANTENNA PARTY

WHEW!!!!! It was HOT this day in June. Due to the fact that the weather was very hot and humid (and also due to the fact I forgot some critical equipment), we didn't get many antenna measurements completed. We DID measure the forward gain of a number of 439 MHz antennas though. The measured gain pretty much matched the expected gain within a dB or so, which surprised me. You know very well that the manufacturers exaggerate their gain claims by about the same degree we exaggerate our signal reporting!

But, we got the REAL important stuff done like eating and socializing. Jim, WA8UZP, our chief chef and his excellent brat turning talents helped the eating part to a major degree. In all due respects, it took a lot of dedication to brave the severe heat and humidity to help us eat better. GOOD JOB JIM! (I was told that Jim purchased the chef hat just for our party).

Next, we want to thank Ted, N8KQN, for being such a gracious host. He's got the perfect place to gather so we thank him for allowing us the use of his facilities for the day.

Below, are some pictures taken and as usual, Jay, KB8YMQ flew his RC helicopter. Each time I see it is a treat. I still can't figure out how it actually flies.

REVISED ANALOG TV CUT-OFF LIKELY DEC. '08

With the way things appear on Capitol Hill right now, DTV and HD procrastinators may have a few more years to make a clean break and put off getting rid of their analog spectrum for good.

House Commerce Committee Chairman Joe Barton held a hearing a few days ago on a draft bill that apparently is still open for discussion in several respects--except for the final cut-off date now stipulated in the draft to take effect on Jan. 1, 2009. That would represent a full two-year delay from the current deadline (which few industry observers ever thought would suffice, anyway).

The committee's ranking minority member, Rep. Ed Markey, said virtually all lawmakers agree that only a hard date to cut off analog services will be effective in ending the old analog realm and ushering in the digital age for broadcasters, once and for all. (No one seemed to mention the fact that there already is a hard cut-off in effect, albeit a faulty one.)

What could still be looming down the road is the 85 percent rule. It still may not be met in some markets by late 2008. The FCC at one point, was seriously considering redefining "digital access" to include consumers who could pick up digital content from cable via analog channels--as a way to quickly, and somewhat artificially, clear that 85-percent hurdle. Cooler heads prevailed, for now. The idea of redefining what constitutes digital access, however, is not yet dead.

While a later cut-off date is likely to delay the overall transition to HD and other DTV services by mass numbers of American consumers (how much is arguable), the NAB is now running a campaign targeted at Congress to slow the final transition as much as possible, that declares, "Don't give over 20 million American homes a snow job." The lobby group is asking Capitol Hill "not to abandon" what it says is 73 million terrestrial analog sets still allegedly operating in those 20-million homes. It will be 20 years ago next spring that NAB first began lobbying for an HD transition for broadcasters (when HD was offered in analog, and only in Japan). A new start date of Jan. 1, 2009, supported by NAB, likely will become law late this year
… From HD Technology magazine 6/1/05 Date posted: 2005-06-01

FCC ORDERS SET MAKERS TO ADD DTV TUNERS BY MARCH 2006

WASHINGTON — The Federal Communications Commission moved Thursday (June 9) to speed up the U.S. digital TV transition by refusing to delay the introduction of digital tuners in new TV receivers.

Consumer electronics manufacturers were seeking to delay the date by which set makers would be required to build digital TV tuners into half of all new mid-size TV receivers measuring 25 to 36 inches. Instead, the FCC said it has moved up by four months the date for full compliance with the rule to March 1, 2006.

FCC rules require that all large TV sets larger than 36 inches be equipped with digital tuners by July 1. Smaller sets and other receivers, including VCRs and DVD recorders, must have built-in tuners by July 1, 2007.

The FCC also proposed moving up the date by which all TV receivers 13 inches or larger and receiving devices must have built-in tuners by seven months to Dec. 31, 2006. That date corresponds with statutory target date for ending U.S. analog broadcasts.

"Today's order makes clear that [the FCC] is committed to moving the digital transition forward," Commissioner Michael Copps said in a statement. "Each time a consumer purchases a set with a digital tuner, we move one step closer towards accomplishing the transition."

The FCC's latest announcement brought mixed reactions from the Consumer Electronics Association (Arlington, Va.), an industry trade group.

While applauding the FCC's decision to expedite the tuner mandate, the CEA expressed concern over the FCC's refusal to delay the 50-percent deadline for mid-size TVs to have digital tuners. The CEA argued that the requirement would increase market uncertainty and slow the ramp-up of volume production needed to keep prices down.

In a similar vein, the CEA expressed concern that accelerating the timetable for smaller sets to be DTV-broadcast compliant was unrealistic for manufacturers and could raise prices for smaller sets to levels unaffordable for low-income consumers.

Spencer Chin and George Leopold 06/09/2005 12:50 PM EDT)

RED-WHITE-BOOM SECURITY ACTIVITIES…Hard work but lots of fun!

Here we are again. Red-white-boom time and it's up on the rooftops again. This year the police crowd observation tasks went off smoothly. Only Tom, KA8ZNY, Bob, W8RWR and I participated but we managed to set up, operate and tear down without too much trouble. Next year I'd like to see more volunteers as it gets to be a bit much with only 3 people. My wife helped me out on the Gas Company roof for without her it would have been a real chore getting the equipment up and down the stairs by myself. Pictures are below.

The picture above pointing north shows the crowd below, a little thinner this year than in the past. Top right picture is me at the controls on the Gas Co. roof. Directly right is Tom's microwave setup on the police headquarters roof receiving my signal. Below left and right are Tom and Bob's cameras and video monitoring equipment.

FUN WITH SATELLITE IMAGERY ANYWHERE IN THE WORLD...

Do you want to see your house; you can control the satellite... It's easy.

Here is a neat item: You may need internet explorer version 5.5 at least to get the map to load. If you click on help at the top of your internet explorer browser, then click about internet explorer, you will know what version you have. If you need to upgrade, in Goggle type in internet explorer 6.0 download in the search window. This is COMPATABLE WITH ALL WINDOWS VERSIONS. YOU DO NOT WANT V7, THAT IS W2000, AND WXP. It will let you download a 500kb file, save it to your hard drive, then find it and when you execute it, it will start upgrading your explorer. You still need to be connected to the Internet. You will surf much better, on the Internet also with this upgrade.

If you get the map up, place the mouse on the map and hold the left button down and drag the map to position it in the center. Like find Ohio and drag it to the center. Then slide the slider up on the left, to zoom in a few notches at a time, and keep centering with the mouse to get where you want. If you get close enough, street names will start showing up. Find your house on your street, and then click on satellite on top right, once you are zoomed in. You should be able to see your house. If you get a message on the screen instead of the satellite view, zoom back a bit, and it will come in. Have fun. Find your house first, then look at Las Vegas or something.

Fun with satellite imagery. Check out imagery of your neighborhood. Click the link and then hit the "Satellite" button. After that, you can change the zoom levels and "click and drag" to see other nearby areas. Have fun! http://maps.google.com/maps

PS: If you walk out in your back yard, don't be scratching your butt! Someone may be watching you.
…Wilbur K8AEH

ARE YOUR COLOR DIGITAL PRINTS SHRIVELING UP AND FADING?

Remember all the DX VIDEO CALL SIGNS you screen captured, or snap a picture of with your DIGITAL CAMERA off your TV set or monitor, when there is a BAND OPENING. You are doing that right????? And there's the regular guys on the NET NIGHTS, acting their real age, you also capture once and a while, right??? Now, how do we print HI-QUALITY prints to hang in every room of the house, basement, and garage, and have them last long enough to enjoy them the rest of this lifetime, and still be around, just in case we get back this way in our next one. Fear not! Your answer lies just ahead...Read on!

LONGER LIFE FOR DIGITAL PRINTS AND THE ANSWER TO HI-QUALITY!

Most of us feel comfortable using the home printer, to create documents containing full-color photos—that is, if we plan to use those materials right away. But what about photos that need to be kept for family members to view years, and decades from now? What about photos to be displayed in your living room, and around your house or at your office, and you would like them to be of the highest quality? How long will digital prints last, before they start to fade, run, or turn yellow?

The answer depends on a number of different factors, including the type of printing technology you use, the type of paper you use, and where and how the prints are stored.

Printing technology factors!

Today, three main types of printing technology are used to turn digital photographs into prints: inkjet, dye sublimation, and digital silver halide (lab processing). Of the three, inkjet printers are the most common.

Inkjet printers can be subdivided into #1 those that use **PIGMENT-BASED** inks and #2 those that use **DYE-BASED** inks. Pigment inks sit on the paper's surface, while dye-based inks are absorbed by the paper. For either type of ink, choosing the **RIGHT PAPER** has a dramatic impact on both quality and longevity. You may want to read that paragraph again!

Inkjet photo papers come in TWO broad categories: "**instant-dry**" or **porous papers**, and "encapsulating" papers. The instant-dry photo papers use a thick, inorganic coating to spread the ink over a large surface area; unfortunately, this also makes the papers susceptible to fading within months. By contrast, encapsulating papers such as HP or Kodak Premium Photo Paper use organic polymers that swell as they absorb the dye, thus encapsulating it and protecting it from air fade.

Environmental factors

When testing digital prints for longevity, scientists typically consider four factors: light fade, thermal degradation, air fade, and humidity. Independent research on these four factors, found that the longevity of digital photo prints varied greatly depending on the type of printing technology, the quality of the materials used, and the storage environment:

Digital Silver Halide: In storage, lasts 100 or more years; exposed to air, lasts decades; displayed under glass, lasts 17 to 40 years.

Inkjet: In storage, lasts 100 or more years; exposed to air, lasts months (for most dyes on porous paper) or decades (pigments or dyes on encapsulating paper); displayed under glass, lasts anywhere from 50 to 100 years or even longer, depending on quality of paper and ink.

Dye Sublimation: In storage, length currently unknown; exposed to air, lasts decades; displayed under glass, lasts 4 to 8 years.

Surprised? Inkjet prints actually last as long or longer than lab-processed prints in most situations. The key to obtaining the best results was using inks, papers, and printing technologies that were designed to be used together.

So how can you make your digital Ham buddy prints last as long as possible? If you're using an inkjet printer, make sure you use a high-quality encapsulating paper, like HP or Kodak Premium Photo Paper, as well as ink designed for use with that paper. If you're displaying photos, protect them with glass to prevent air fade. Finally, as much as possible, store photos away from direct light, heat, and humidity. PS Happy printing, next lifetime too!
…Wilbur K8AEH

BOOSTED SUPERCAPS CHARGE TO A PENNY PER FARAD

Check out this new product! Let's see…how many surplus electrolytic caps do you have in your junk box? I'll bet you don't have enough to parallel them and achieve, even close to the value of one of these big boys! I'll bet you thought that some day someone would come up with a one farad capacitor, but did you think anyone could pack the foil so tight that the value could approach 2600 farads? These little puppies pack a short circuit discharge current in excess of 3000 amps! I remember in college how our engineering senior class planned to make a one farad capacitor out of empty beer cans. We started by systematically emptying the cans and, well…that's a story for later. I know this info isn't ATV related but I'm just trying to mix it up a bit. ED.

The Manufacturer Says:

San Diego, Calif—Maxwell Technologies has launched the first of a new family of large cell BOOSTCAP ultracapacitor cells and multi-cell modules based on a technology breakthrough that enables them to store more energy and deliver more power per unit volume and last longer than any other commercially available ultracapacitor products.

Richard Smith, Maxwell's executive vice president for strategic business development, said that the just-released 2.7-volt BOOSTCAP MC2600 2,600-farad large cell and fully integrated BMOD2600-16 16-volt module, incorporating six MC2600 cells, establish new industry standards for performance and price. "These new products meet or exceed demanding automotive application requirements for both watt-hours of energy storage and watts of power delivery per kilogram, and will perform reliably for more than one million discharge-recharge cycles at 2.7 volts," Smith said. "The proprietary technology on which they are based also significantly reduces material and production cost, positioning Maxwell to achieve our stated goal of pricing large cell ultracapacitors at one cent per farad in million-cell annual volumes. "Smith said that the new family of large cells and multi-cell modules are specifically designed "with the user in mind" to provide versatile, durable, compact and low-cost solutions for strategic transportation and industrial applications.

The cylindrical MC2600 cells, constructed of lightweight aluminum and Maxwell's proprietary electrode, measure 138 mm in height, 57.7 mm in width and weigh 470 grams. They feature a double-ended design that is available in two versions that facilitate either mechanical or welded termination. They are priced at $92 per cell in low volume, and $54 per cell in mid-range volume.

The BMOD2600-16 modules are encased in a rugged, splash-proof, aluminum chassis. They weigh 5 kg and are less than 4.85 liters in volume (420-by-160-by-70 mm). These durable "smart boxes" include temperature and voltage monitoring and internal cell balancing that give designers "plug and play" solutions, plus module-to-module balancing that makes them versatile building blocks for systems with higher voltage requirements. They are priced at $613 each in low volume and $366 in mid-range volume.

In March, Maxwell won a next-generation ultracapacitor cell and module development contract from the United States Advanced Battery Consortium (USABC), an entity formed by DaimlerChrysler, Ford, General Motors and the U.S. Department of Energy

(DOE) to strengthen the domestic auto industry's technology base through cooperative research. Under that contract, the company is eligible to receive more than $3 million in matching funds from DOE through the FreedomCAR initiative that DOE and the Big 3 U.S. automakers established in 2002 to promote new technologies to reduce passenger vehicles' dependence on petroleum. Smith noted that, as part of the USABC contract, Maxwell's MC2600 and the proposed auto-specific 48-volt modules it is developing will undergo extensive testing against rigorous auto industry standards for energy capacity, pulse power, abuse tolerance, calendar life and cycle life at DOE's Sandia and Idaho national laboratories.

"This independent third-party testing will supplement and validate the performance and reliability data that we have been generating internally," Smith said. "The MC2600 and BMOD2600-16 are major stepping stones to penetrating the 50-plus million-unit annual new car market by providing the advanced, low-cost, energy storage and power delivery technology that automotive OEMs around the world require."

BOOSTCAP ultracapacitors deliver up to 10 times the power and longevity of batteries, require no maintenance and operate reliably in extreme temperatures. In transportation applications, they efficiently recapture energy from braking for reuse in hybrid drive trains, reducing fuel consumption and emissions, and provide compact, lightweight, "life-of-the vehicle" solutions to stabilize automotive power networks and power new, all-electric subsystems, such as drive-by-wire steering. In mission critical industrial applications, where backup power is critical for continued operation or a soft shutdown in the event of power interruptions, they provide reliable, cost-effective, maintenance-free energy storage. In wind turbine blade pitch and braking systems and other industrial applications, they provide a simple, solid state, highly reliable, solution to buffer short-term mismatches between the power available and the power required.
Maxwell Technologies, 1-858-503-3300, www.maxwell.com

eeProductCenter's Vince Biancomano says:

With this latest announcement, Maxwell Technologies implies an inflection point in the cost-volume curve that is the most central to the successful development and production of the so-called supercapacitor. "Cost is major in enabling a technology into the mainstream," said Robert Tressler, senior vice president of sales, pointing out that the company's PC2500, a 2,700 farad device introduced in 2000, sold for $270 and had a production run of a few thousand. "We sold to those with specialized needs, such as labs and companies of that nature."

And at 10 cents per farad the cost was relatively high. "To those who ask if we can reduce cost, I say we must be at half a cent per farad by 2010," he said. The company's new MC2600, at a cost of 1 cent per farad in high numbers (1 million units annual volume) and with a production volume that is presently expected to approach 100,000, goes a long way towards meeting that goal.

An improved electrode system and better mechanical construction overall takes credit for most of the gains for this, the electrochemical double-layer capacitor—still a misnomer in my view if for no other reason than the mention of 'electrochemical' still invokes the notion of a battery source, as the supercap is often known. "First, we've brought the cell rating to 2.7 volts, compared to the 2.5 volts it was previously," said Bobby Maher, director of technical sales for the company's Boostcap line, noting that bringing up the cell rating 0.2 volts was hardly a trivial pursuit. "That 8 percent increase means fewer capacitors for a given application, and the cost of a system is directly related to the cost of the cell and how many cells. The device is also specified for a million charge/discharge cycles (discharge to half capacity, charge to full capacity). At the same time, we've decreased size by 14 percent." In terms of power density and energy density, that equates to 10.4 kW/kg, and 5.6 watt-hours/kg, respectively. The supercaps are rated for operation over -40 to +65°C.

More directly, in more basic terms familiar to the engineer, the supercap's improved performance is tied to the device's reduced internal resistance. In this case, it's 0.4 milliohm per cell, about a 40 percent improvement over the current generation's BCAP0010 device (0.7 milliohm). The company notes, moreover, that the spec is the capacitor's DC internal resistance, versus the internal resistance at low-frequency AC, which when thusly specified usually clouds the picture for the system designer. In the typical application, the designer will draw greater advantage from the low-resistance design that comes in the device's laser welded package, versus a second version of the MC2600 package having threaded terminal interconnects for those just getting acquainted with a basic power backup/bridging application.

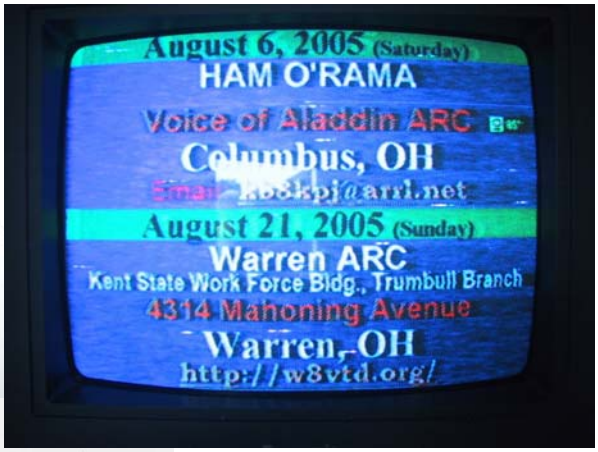
The BMOD2600-16 module (see below), an extruded aluminum chassis that houses (includes) six MC2600s, delivers 16+ volts at no increase in cost, weight, or size versus 15-volt modules the company says are industry standard in most applications. The module, which serves as a heat sink as well as a rugged, splash-proof enclosure, offers active cell-balancing with op-amp circuitry internal to the unit.

Active balancing is used by 90 percent of the company's customers, versus passive balancing, which uses a resistor across each supercap. The resistor approach offers a simple one-part solution, but doesn't perform balancing as quickly, nor is it as power-efficient. Each module offers a balancing jumper connection to the next module when units are placed in series. In practice, units can be series-connected up to 1,000 volts (based on existing safety requirements, not the limitation of the supercap). Most practical applications extend to about 700 to 800 volts, according to the company. There is no balancing requirement for units connected in parallel.

…Vincent Biancomano eeProductCenter (06/07/2005 8:00 AM ET)

THE ATCO-DARA LINK IS IN OPERATION!

FINALLY!!! The ATCO/DARA ATV link is now in operation but not without problems. It's operational never the less. Some of the problems that remain are the lack of a filter on the 1250/1280 link to us and as a result, radar pulse flashes above our band is causing interference. Also, the signal to and from us to the Jones Road site seems to be weaker than it once was. No explanations for this as the pictures used to be P5 but now are just P3. The picture of our bulletin board below was taken a couple of weeks before the signal deteriorated so I'm not quite sure what's going on. We increased the height of the 1250/1280 antenna and changed it to a higher gain antenna which improved it about a P unit but it's still not quite what it was.



Adam, pictured with me above after the installation, has done a superb job of providing logic and software to run the link control in just a short time. He stepped right up to the plate, volunteered his help and then followed through on his promises. My hat is off to him. But he's not the only one involved. Jess, KB8OFF, Dick, W8RVH, and Winn, W6CDR all provided a tremendous amount of time and effort to help us pull it off. Last but not least is Glen Mckonkey, W8BVI, who, without his permission to allow us the use of his facilities, all of this would not have been possible.

Shortly after we installed the equipment, Adam made the first two "service calls". We decided to install it after a significant time in Adam's shack as a shakedown test. He wanted to keep it there longer but I insisted that the only way to find problems is to put it in an "inaccessible" location. It turned out I was right. The high ambient temperature brought a few things to the surface. Adam says, "The first was on Sunday, when I phoned you at the antenna party. The 12v power supply OVP had tripped (probably due to the heat). I turned it down to 12.3 V (was set at 12.8 v). The second service call was to replace and re-engineer the RF switching circuit for the 910 MHz amp. The high power was a bit much for that small SMA relay. I added a larger N-connector RF relay and also used the remaining working section of the SMA relay to further isolate the receiver from the TX power. I get an additional 50 dB of isolation that way, and the RF TX path insertion loss is still only 0.2 dB total!

We are getting a good strong P-5 signal with no spread-spectrum noise, even running reduced power at 50 watts. The audio is coming through from Jones Road OK, but for some reason the AUDIO into Jones is a bit weak. It might have been just the guys trying to get into ATCO repeater on 147.45.

I ended up disconnecting the battery from the 12V supply, in case that is what was tripping the supply off. I will have to re-engineer the backup supply to prevent back feed to the supply. Otherwise, I could just hook the 2M radio to the battery direct, with trickle charge, and keep that separate from the main supply anyway. 2M is mainly used on receive anyway unless we are doing service. If we lose power in the near future, attempt control of the link on 146.01 (default freq for 2M transceiver)."

The 910 transmitter at the DARA end is not complete but Dick is finishing it up now. It may be in operation by the time you read this. However, the remote 439.25 MHz input is operational. You should be able to send a 439 signal west and see it come back to our repeater via 1250 MHz. I know Jay, KB8YMQ should be able to do this and I've seen Dick, W8RVH already through it. You may not have recognized it as repeated video because of the lack of any special identification but that will be added in the near future. Enjoy!!!

←Here's the small building in the middle of the cornfield that is the home to our link to the DARA system. The 110 foot tower is on the left and the solar panel helping to supply power is on the right side of the building

Dayton / Columbus ATV Audio/Video Relay

System Controller Keypad DTMF Commands

Function	Command	Function	Command
A00	System Reboot	A61	All Sync Detects Enabled
A11	910 MHz Sync Enable	A60	All Sync Detects Disabled
A10	910 MHz Sync Disable	A71	Both Transmitters Enabled
A21	1250 MHz Sync Enable	A70	Both Transmitters Disabled
A20	1250 MHz Sync Disable	A81	ID at end of QSO Enabled
A31	439.25 MHz Sync Enable	A80	ID at end of QSO Disabled
A30	439.25 MHz Sync Disable	A90	Query Sync & Transmitter Status
A41	910 MHz Transmit Enable	A99	Break the Link
A40	910 MHz Transmit Disable		
A51	1280 MHz Transmit Enable		
A50	1280 MHz Transmit Disable		

Command format: ##Axx* (All commands start with ## and end with *)

Maintenance Commands

Function	Command
Bxy	Transmit Color bars to: x = dest: DARA = 1, ATCO = 2 y = duration: 0=30 sec, 1-9 minutes Ex: B28 transmits bars to ATCO for 8 min
Cxy	Control Video Switcher x = bank 1 dest (DARA) y = bank 2 dest (ATCO) Ex: C34 switches video channel 3 to Dayton and channel 4 to Columbus
Dxy	Future Upgrade

Output Power Settings

Power Set Voltage	910 MHz RF Watts Output
5.55	0.3
5.75	1.5
6.00	3.0
6.46	10.0
6.80	32.0
7.20	53.0
7.60	82.0
7.80	105.0
8.05	130.0

MARS THE RED PLANET IS ABOUT TO BE SPECTACULAR!

This month and next, Earth is catching up with Mars in an encounter that will culminate in the closest approach between the two planets in recorded history. The next time Mars may come this close is in 2287. Due to the way Jupiter's gravity tugs on Mars and perturbs its orbit, astronomers can only be certain that Mars has not come this close to Earth in the last 5,000 years, but it may be as long as 60,000 years before it happens again. The encounter will culminate on August 27th when Mars comes to within 34,649,589 miles of Earth and will be (next to the moon) the brightest object in the night sky. It will attain a magnitude of -2.9 and will appear 25.11 arc seconds wide.

At a modest 75-power magnification Mars will look as large as the full moon to the naked eye.

Mars will be easy to spot. At the beginning of August it will rise in the east at 10p.m. and reach its azimuth at about 3 a.m. By the end of August when the two planets are closest, Mars will rise at nightfall and reach its highest point in the sky at 12:30a.m. That's pretty convenient to see something that no human being has seen in recorded history. So, mark your calendar at the beginning of August to see Mars grow progressively brighter and brighter throughout the month.

Be sure to share this with your children and grandchildren.

NO ONE ALIVE TODAY WILL EVER SEE THIS AGAIN

Note: Again, not ATV related but I'm sure you will want to check this out next month. (It must be good luck because it occurs on my birthday. (I wonder just what that means!) Thanks to Dale, WB8CJW, for bringing this to my attention. WA8RMC

NEW MEMBER(S)

Let's welcome the new members to our group! If any of you know anyone who might be interested, let one of us know so we can flood him or her with information. New members are our group's lifeblood. It's important that we actively recruit new faces aggressively.

N8YHY Chris Scott Hillsboro, Ohio

…WA8RMC

HAMFEST CALENDAR

This section is reserved for upcoming hamfests. They are limited to Ohio and vicinity easily accessible in one day. Anyone aware of an event incorrectly or not listed here, notify me so it can be corrected. This list will be amended, as further information becomes available.

31 Jul 2005 + Portage Hamfair '05 Portage Amateur Radio Club http://www.parc.portage.oh.us/ Talk-In: 144.79/145.39 Contact: Joanne Solak, KJ3O 9971 Diagonal Road Mantua, OH 44255 Phone: 330-274-8240 Fax: 330-274-8527 Email: ljsolak@apk.net Randolph, OH Portega County Fairgrounds 4215 Fairgrounds Road

6 Aug 2005 + Ham "OH" Rama Voice of Aladdin ARC Contact: James Morton, KB8KPJ 6070 Northgap Drive Columbus, OH 43229-1945 Phone: 614-846-7790 Email: kb8kpj@arrl.net Columbus, OH

21 Aug 2005 + Warren Amateur Radio Association http://w8vtd.org/ Talk-In: 146.970 (minus offset - no tone) Contact: Richard E. Bell, KC8TAP 2918 Williamsburg Stree NW Warren, OH 44485 Phone: 330-898-6539 Email: kc8tap@neo.rr.com Warren, OH Kent State University Work Force Building, Trumbull Branch 4314 Mahoning Avenue

27 Aug 2005 x Portsmouth Radio Club Talk-In: 145.390 (PL 136.5) Contact: Kim Lozier, N8ZW Phone: 740-456-1616 Email: n8zw@frognet.net Friendship, OH

18 Sep 2005 + Greater Cincinnati Amateur Radio Association http://www.gcara.org/ Talk-In: ARPSC 145.37 (-600), ALT. FM CLUB 146.88 (-600) Contact:, Stan Cohen, W8QDQ 2301 Royal Oak Court Cincinnati, OH 45237-2939 Phone: 513-531-1011 Fax: 513-531-3834 Email: stanco49@aol.com , Cincinnati, OH Scarlet Oaks Campus, Great Oaks Vocational System 3254 East Kemper Road Sharonville

25 Sep 2005 + Cleveland Hamfest and Computer Show Hamfest Association of Cleveland http://www.hac.org Talk-In: 146.73 MHz (110.9 Hz) Contact:, William R. Beckman, N8LXY 4360 Metropolitan Drive Cleveland, OH 44135 Phone: 800- CLE-FEST Email: info@hac.org , Berea, OH Cuyahoga County Fairgrounds 164 Eastland Road.

9 Oct 2005 + Medina County Hamfest Medina 2 Meter Group http://www.m2mgroup.org/ Talk-In: 147.03/.63 (PL 141.3) Contact:, Ed Eyerdom, K8NVR 3312 State Road Medina, OH 44256 Phone: 330-239-1686 Fax: 216-765-0936 Email: k8nvr@arrl.net , Medina, OH Medina County Career Center 1101 West Liberty Street.

30 Oct 2005 + Hamfest & Auction Massillon Amateur Radio Club http://www.marcradio.org Talk-In: 147.18+ (PL 110.9) Contact:, Terry Russ, N8ATZ 3420 Briardale Circle NW Massillon, OH 44646 Phone: 330-837-3091 Email: truss@sssnet.com Massillon, OH Massillon Boys and Girls Club Complex 730 Duncan Street SW

LOCAL HAM CLUB LISTING

Central Ohio ARES (COARES)
Rich Jordan, AA8DN – President
e-mail: aa8dn@arrl.net
Web Site: http://www.qsl.net/coares/

Hocking Valley ARC
Mel Myers AA8BJ – President
Sunday Creek Amateur Radio Federation
Russel Ellis N8MWK – President

Rusty Zipper HF & DX Contest Club
Contact Name: Mark Harvill
e-mail: na8kd@qsl.net or kg8dp@aarl.net
Web Site: http://www.qsl.net/na8kd

Delaware Amateur Radio Association (DELARA)
Bob Brown, W8BOB, President
160 Curly Smart Circle, Delaware, OH 43015
e-mail: bobb@midohio.net

Capital City Repeater Association (CCRA)
Ned Raybould, N8OIF, Secretary
e-mail: ccra@qsl.net
Web Site: http://www.qsl.net/ccra

Central Ohio Radio Club (CORC)
Joe Hahn, W8NBA, Membership Chairman
e-mail: membership@corc.us
Wed Site: http://www.qsl.net/corc

Lancaster & Fairfield County ARC
Charlie Snoke – President
(740) 653-9092 e-mail: k8qik@qsl.net
Web Site: http://www.qsl.net/k8qik

Columbus QRP Club (CQRP)
Web Site: **http://www.qsl.net/cqrp**

Central Ohio Severe Weather Network
John Montgomery, N8PVC, President (614-231-0590)
e-mail N8WX@severe-weather.org
Web Site: www.severe-weather.org

INTERNET ATV HOME PAGES (list verified 01/18/02)

If you have access to the INTERNET, you may be interested to know of some of the HAM related information that is available. Most addresses listed below are case sensitive, so type exactly as shown. (For comments or additional listings contact me at towslee@ee.net).
Note: The listings below without URL's have disappeared! If any of you know otherwise, let me know.

Domestic homepages

http://psycho.psy.ohio-state.edu/atco	Ohio, Columbus, homepage (ATCO)
http://www.activedayton.com/community/groups/rmeeksjr/index.html	Ohio, Dayton ATV group (DARA)
http://users.erinet.com/38141/atv.htm	Ohio, Xenia KB8GRJ
http://www.qsl.net/ka8mid	Ohio, Chillicothe area, KA8MID homepage
	Alabama - Gulf Coast Amateur Television Society
http://www.hayden.edu/Guests/AATV	Arizona, Phoenix Amateurs (AATV) Carl Hayden High School
http://www.w7atv.com	Arizona, Phoenix Amateurs (AATV)
http://www.citynight.com/atv	California, San Francisco ATV
http://www.qsl.net/atn	California, Amateur Television Network in Central / Southern
http://www.qsl.net/scats/	Florida, Melborn Space Coast Amateur TV Society (SCATS)
http://www.bsrg.org/aatn/aatn1.html	Georgia, Atlanta ATV
http://members.tripod.com/silatvg	Illinois, Southern, Amateur Television group
http://www.ussc.com/~uarc/utah_atv/id_atv1.html	Idaho ATV
	Kentucky, Lexington Bluegrass ATV Society (BATS)
	Kansas, Kansas City Amateur TV Group (KCATVG**)**
http://www.bratsatv.org	Maryland, Baltimore Radio Amateur Television Soc. (BRATS)
http://www.icircuits.com/dats	Michigan, Detroit Amateur Television System (DATS)
http://come.to/amateurtv.mn	Minnesota Fast Scan Amateur Television (MNFAT)
	Missouri, St Louis Amateur Television
http://www.qsl.net/kd2bd/atv.html	New Jersey, Brookdale ARC in Lincroft
http://www.no3y.com/radio.html	New Mexico, Farmingham
http://www.ipass.net/~teara/menu3.html	North Carolina, Triangle Radio Club (TEARA)
http://www.oregonatv.org	Oregon, Portland OATVA Oregon Amateur TV Association
http://www.jones-clan.com/amateur_radio/klamath_amateur_television.htm	Oregon, Southern Oregon ATV
http://www.nettekservices.com/ATV/	Pennsylvania, Pittsburg Amateur Television
http://members.bellatlantic.net/~theojkat	Pennsylvania, Phila. Area ATV
http://www.geocities.com/Hollywood/5842	Tennessee, East ATV
http://www.hats.stevens.com	Texas, Houston ATV (HATS)
	Texas, WACO Amateur TV Society (WATS)
http://www.hamtv.org/	Texas, North Texas ATV
http://www.ussc.com/~uarc/utah_atv/utah_atv.html	Utah ATV
	Washington, Western Washington Television Soc. (WWATS)
http://www.shopstop.net/bats/	Wisconsin, Badgerland Amateur Television Society (BATS)

Foreign homepages

http://lea.hamradio.si/~s51kq/	Slovenia ATV **(BEST OF FOREIGN ATV HOMEPAGES)**
http://www.batc.org.uk/index.htm	British ATV club (BATC)
http://www.sfn.saskatoon.sk.ca/recreation/hamburg/hamatv.html	Saskatoon, Canada ATV
http://www.gpfn.sk.ca/hobbies/rara/atv3.html	Regina, Canada ATV
http://www.inside.co.uk/scart.htm	UK, Great Britain ATV (SCART)
http://www.cmo.ch/swissatv	Swiss ATV
http://www.rhein-land.com/atv	German ATV in "Niederrhein" area
http://www.arcadeshop.demon.co.uk/atv/	UK, G8XEU ATV homepage
	British Columbia, Canada VE7RTV repeater
	Auckland, New Zealand ATV
http://www.cq-tv.com	British ATV Club and CQ-TV Magazine
http://oh3tr.ele.tut.fi/english/atvindex.html	Finland ATV, OH3TR repeater.

ATCO REPEATER TECHNICAL DATA SUMMARY

Location:	Downtown Columbus, Ohio
Coordinates:	82 degrees 59 minutes 53 seconds (longitude) 39 degrees 57 minutes 45 seconds (latitude)
Elevation:	630 feet above average street level (1460 feet above sea level)
Transmitters:	427.25 MHz AM modulation, 1250 MHz FM modulation, 1260 MHz QPSK digital, 2433 MHz FM modulation and 10.350 GHz FM modulation
	Interdigital filters in output line of 427.25, 1250 & 2433 transmitters
	Output Power - 427.25 MHz:40 watts average 80 watts sync tip
	1250 MHz:50 watts continuous (Analog ATV)
	1260 MHz 2 watts continuous (DVB-S digital ATV)
	2433 MHz:15 watts continuous
	10.350 GHz 1 watt continuous
	Link transmitter - 446.350 MHz 5 watts NBFM 5 kHz audio
Identification:	427, 1250, 1260, 2433 & 10.35 GHz transmitters video identify every 30 minutes showing ATCO & WR8ATV on four different screens
	1260 MHz - Continuous transmission of ATCO & WR8ATV with no input signal present
Transmit antennas:	427.25 MHz - Dual slot horizontally polarized "omni" 7 dBd gain major lobe east/west, 5dBd gain north/south
	1250 MHz - Diamond vertically polarized 12 dBd gain omni (Analog ATV)
	1260 MHz - Diamond vertically polarized 12 dBd gain omni (Digital DVB-S ATV)
	2433 MHz - Comet Model GP24 vertically polarized 12 dBd gain omni
	10.350 GHz - Commercial 40 slot waveguide horizontally polarized 16 dBd gain omni
Receivers:	147.45 MHz - F1 audio input control of touch tones
	439.25 MHz - A5 video input with FM subcarrier audio (**lower sideband**)
	915 MHz - F5 video link data from remote sites
	1280 MHz - F5 video input or DTV-S digital selectable (C1* selects digital & C1# selects analog)
	2398 MHz - F5 video input
	10.350 GHz - F5 video input (future – not installed yet)
Receive antennas:	147.45 MHz - Vert. polar. Hi Gain 12 dBd dual band (also used for 446.350 MHz output)
	439.25 MHz - Horiz. polar. dual slot 7 dBd gain major lobe west
	915 MHz - Diamond vertically polarized 12 dBd gain omni
	1280 MHz - Diamond tri-band vertically polarized 12 dBd gain omni
	2398 MHz - Comet Model GP24 vertically polarized 12 dBd gain omni
	10.450 GHz - Commercial 40 slot waveguide horizontally polarized 16 dBd gain omni (future – not installed yet)

	Touch Tone	Result (if third digit is * function turns ON, if it is # function turns OFF)
Input control:	00#	turn transmitters **off** (exit manual mode and return to auto scan mode)
	00*	turn transmitters **on** (enter manual mode -keeps transmitters on till 00# sequence is pressed)
	264	Select Channel 4 Doppler radar. (Stays up for 5 minutes) Select # to shut down before timeout.
	697	Select Time Warner radar. (Stays up till turned off). Select # to shut down.
Manual mode functions:	00* then 1 Ch. 1	Select 439.25 receiver - manual mode (hit 00* then 1 to view 439.25 signal only)
	00* then 2 Ch. 2	Select 915 receiver - manual mode
	00* then 3 Ch. 3	Select 1280 receiver - manual mode
	00* then 4 Ch. 4	Select 2411 receiver - manual mode
	00* then 5 Ch. 5	Select video ID - manual mode (the 4 identification screens)
	01* or 01#	Channel 1 439.25 MHz scan enable (hit 01* to scan this receive channel & 01# to disable it)
	02* or 02#	Channel 2 915 MHz scan enable
	03* or 03#	Channel 3 1280 MHz scan enable
	04* or 04#	Channel 4 2398 MHz & camera video scan enable
	A1* or A1#	Manual mode select of 439.25 receiver audio
	A2* or A2#	Manual mode select of 915 receiver audio
	A3* or A3#	Manual mode select of 1280 receiver audio
	A4* or A4#	Manual mode select of 2398 receiver audio
	C0* or C0#	Beacon mode – transmit ID for twenty seconds every ten minutes
	C1* or C1#	1280 analog/ digital select. Hit C1* for digital. Hit C1# for analog.
	C2* or C2#	2433 transmitter for on/off. (C2* enables transmitter and C2# disables it)
Auto scan mode functions:	001	2398 receiver (normal mode - returns to auto scan)
	002	Roof camera (select 001 when finished viewing camera so repeater will shut down)
	003	Equipt. room camera (select 001 when finished viewing camera so repeater will shut down**)**

TUESDAY NITE NET ON 147.45 MHz SIMPLEX

Every Tuesday night @ 9:00PM WA8RMC hosts a net for the purpose of ATV topic discussion. There is no need to belong to the club to participate, only a genuine interest in ATV. All are invited. For those who check in, the general rules are as follows: Out-of-town and video check-ins have priority. A list of available check-ins is taken first then a roundtable discussion is hosted by WA8RMC. After all participants have been heard, WA8RMC will give status and news if any. Then a second round follows with periodic checks for late check-ins. We rarely chat for more than an hour so please join us if you can.

ATCO MEMBERS AS OF July 26, 2005

Call	Name	Address	City	St	Zip	Phone	URL
KD8ACU	Robert Vieth	3180 North Star Rd	Upper Arlington	OH	43221	614-457-9511	rfvieth@yahoo.com
K8AEH	Wilbur Wollerman	1672 Rosehill Road	Reynoldsburg	OH	43068	614-866-1399	wilbur.w@juno.com
KC3AM	David Stepnowski	735 Birchtree Lane	Claymont	DE	19703-1604		kc3am@comcast.net
KC8ASD	Bud Nichols	3200 Walker Rd	Hilliard	OH	43026	614-876-6135	kc8asd1@netzero.com
KC8ASF	Tom Pallone	3437 Dresden St.	Columbus	OH	43224	614-268-4873	
W8CQT	Jim McConnell	350 N. State Road	Delaware	OH	43015-9644	740-363-1008	w8cqt@arrl.net
W6CDR	Winn Rollert	1141 Pursell Ave	Dayton	OH	45420	937-256-1772	w6cdr@hotmail.com
WB8CJW	Dale & Sharon Elshoff	8904 Winoak Pl	Powell	OH	43065	614-210-0551	delshoff@columbus.rr.com
N3DC	William Thompson	6327 Kilmer St	Cheverly	MD	20785		
WA8DNI	John Busic	2700 Bixby Road	Groveport	OH	43125	614-491-8198	jabusic@yahoo.com
K8DW	Dave Wagner	2045 Maginnis Rd	Oregon	OH	42616	419-691-1625	
WA3DTO	Rick White	308 Orial Ct	Evans City	PA	16033	614-595-4966	wa3dto@aol.com
WB8DZW	Roger McEldowney	5420 Madison St	Hilliard	OH	43026	614-876-6033	wb8dzw@aol.com
KC8EVR	Lester Broadie	108 N Burgess	Columbus	OH	43204		
KB8FLY	Rod Shaner	124 West Walnut St.	Lancaster	OH	43130-4344	740-654-5694	rshaner@copper.net
W8FZ	Fred Stutske	8737 Ashford Lane	Pickerington	OH	43147		w8fz@arrl.net
WA8HFK,KC8HIP	Frank, Pat Amore	3630 Dayspring Dr	Hilliard	OH	43026	614-777-4621	famore@wowway.com
WG8I	Chris Vojsak Sr,	3536 W Henderson Rd	Columbus	OH	43220-2232		
N8IJ	Dick Knowles	4750 Larwell Dr	Columbus	OH	44323	614-451-0273	
K8KDR,KC8NKB	Matt & Nancy Gilbert	5167 Drumcliff Ct.	Columbus	OH	43221-5207	614-771-7259	k8kdr@arrl.net
W8KHW	Kevin Walsh	2396 Anson St	Columbus	OH	43220		
K4KLT, KD4ODQ	Bob & JoAnnSchmauss	P.O. Box 1547	Land O' Lakes	FL	34639-1547	813-996-2744	schmauss@att.net
N8KQN	Ted Post	1267 Richter Rd	Columbus	OH	43223	614-276-1820	n8kqn@juno.com
WA8KQQ	Dale Waymire	225 Riffle Ave	Greenville	OH	45331	513-548-2492	walkingcross@mail.bright.net
N3KYR	Harry DeVerter Jr	303 Shultz Road	Lancaster	PA	17603-9563		n3kyr@comcast.net
N8LRG	Phillip Humphries	3226 Deerpath Drive	Grove City	OH	43123	614-871-0751	phumphries@columbus.rr.com
WB8LGA	Charles Beener	2540 State Route 61	Marengo	OH	43334		cbeener@columbus.rr.com
WB2LTS	Manny Diaz	74 Lincoln Rd	Medford	NY	11763		wb2lts@optonline.net
WU8O (ex kc8lzc)	Tom Walter	15704 St Rt 161 West	Plain City	OH	43064	614-733-0722	twalter@emec.us
W8MA	Phil Morrison	154 Llewellyn Ave	Westerville	OH	43081		
WD8MDI	Dave Mathews	2404 Hoose Drive	Grove City	OH	43123		wd8mdi@qsl.net
KA8MID	Bill Dean	2630 Green Ridge Rd	Peebles	OH	45660		ka8mid@qsl.net
WB8MMR	Mike Knies	1715 Winding Hollow Dr.	Columbus	OH	43223	614-875-4236	
K4NQV	Dean Maggard	1612 Benson Ave	Bowling Green	KY	42104		k4nqv@insightbb.com
N8NT	Bob Tournoux	3569 Oarlock Ct	Hilliard	OH	43026	614-876-2127	n8nt@atco.tv
WD8OBT	Tom Camm	63 Goings Lane	Reynoldsburg	OH	43068	740-964-6881	firefoxtom11@netzero.com
N8OCQ	Bob Hodge Sr.	3584Bluff Gap Dr.	Grove City	OH	43123		
KB8OFF	Jess Nicely	742 Carlisle Ave	Dayton	OH	45410		kb8off@prosurvisp.com
N8OPB	Chris Huhn	1667 Pickering Court	Reynoldsburg	OH	43068		cjhuhn@hotmail.com
W6ORG,WB6YSS	Tom & Maryann O'Hara	2522 Paxson Lane	Arcadia	CA	91007-8537	626-447-4565	tom6ORG@hamtv.com
W2OTA,WA2DTZ	Michael Chirillo	942 Bruce Drive	Wantagh	NY	11793	516-785-8045	
KC8OZV	George Biundo	3675 Inverary Drive	Columbus	OH	43228	614-274-7261	kilowatt@biundo.org
KE8PN	James Easley	1507 Michigan Ave	Columbus	OH	43201	614-421-1492	jeasley11@hotmail.com
W8PGP,WD8BGG	Richard, Roger Burggraf	5701 Winchester So. Rd	Stoutsville	OH	43154	614-474-3884	rgburggraf@juno.com
K4PRS	Peter R. Sinkowski	4532 W Kennedy Bl #114	Tampa	FL	33609-2042		k4prs@yahoo.com
WA8RMC	Art Towslee	180 Fairdale Ave	Westerville	OH	43081	614-891-9273	towslee1@ee.net
W8RRF	Paul Zangmeister	10365 Salem Church Rd	Canal Winchester	OH	43110		w8rrf@copper.net
W8RRJ	John Hull	580 E. Walnut St.	Westerville	OH	43081	614-882-6527	
W8RUT,N8KCB	Ken & Chris Morris	3181 Gerbert Rd	Columbus	OH	43224	614-261-8583	wa8rut@aol.com
W8RVH	Richard Goode	9391 Ballentine Rd	New Carlisle	OH	45334	937-964-1185	w8rvh@glasscity.net
W8RQI	Ray Zeh	2263 Heysler Rd	Toledo	OH	43617		zehrw@glasscity.net
KB8RVI	David Jenkins	1941 Red Forest Lane	Galloway	OH	43119	614-878-0575	kb8rvi@hotmail.com
W8RWR	Bob Rector	135 S. Algonquin Ave	Columbus	OH	43204-1904	614-276-1689	w8rwr@sbcglobal.net
W8RXX,KA8IWB	John & Laura Perone	3477 Africa Road	Galena	OH	43021	740-548-7707	
N8SFC	Larry Campbell	316 Eastcreek Dr	Galloway	OH	43119		
W8SJV, KA8LTG	John & Linda Beal	5001 State Rt. 37 East	Delaware	OH	43015	740-369-5856	w8sjv@bright.net
W8SMK	Ken Bird	244 N Parkway Dr	Delaware	OH	43015	740-548-4669	ken@midohio.net
N8SNG	Terry Rankin	414 Walnut Street	Findlay	OH	45840		
KB8SSH	Mike Cotts	3424 Homecroft Dr	Columbus	OH	43224	614-268-8497	mcotts@wideopenwest.com
W3SST	John Shaffer	1635 Haft Dr.	Reynoldsburg	OH	43068	614-751-0029	w3sst@juno.com
K8TPY, K8FRB	Jeff & Dianna Patton	3886 Agler Road	Columbus	OH	43219		cqcqk8tpy@juno.com
KC8UQS	David Dominy	7017 Taway Road	Radnor	OH	43066		
WB8URI	William Heiden	5898 Township Rd #103	Mount Gilead	OH	43338	419-947-1121	
KB8UU	Bill Rose	9250 Roberts Road	West Jefferson	OH	43162	614-879-7482	
KB8UWI	Milton McFarland	8287 Creekstone Lane	Blacklick	OH	43004	614-751-0476	
WA8UZP	James R. Reed	818 Northwest Blvd	Columbus	OH	43212	614-297-1328	wa8uzp@qsl.net
KB8WBK	David Hunter	45 Sheppard Dr	Pataskala	OH	43062	740-927-3883	hiramhunter@aol.com
KC8WRI	Tom Bloomer	PO Box 595	Grove City	OH	43123		ohiomec@aol.com
AA8XA	Stan Diggs	2825 Southridge Dr	Columbus	OH	43224-3011		sdiggs4590@aol.com
N8XYZ	Dan Baughman	4269 Hanging Rock Ct.	Gahanna	OH	43230		dbaughma@insight.rr.com
N5XZS	Tim Johnson	1629 Speakman Dr SE	Albuquerque	NM	87123		
KB8YMN	Mark Griggs	2160 Autumn Place	Columbus	OH	43223	614-272-8266	mmgriggs@aol.com
KB8YMQ	Jay Caldwell	4740 Timmons Dr	Plain City	OH	43064		
KC8YPD	Joe Ebright	3497 Ontario St	Columbus	OH	43224		

Call	Name	Address	City	St	Zip	Phone	URL
N8YHY	Chris Scott	11981 Maple Trail	Hillsboro	OH	45133		
N8YZ	DaveTkach	2063 Torchwood Loop S	Columbus	OH	43229	614-882-0771	
KB8ZLB	Dave Kibler	243 Dwyer Rd	Greenfield	OH	45123	937-981-4007	s.crew@dragonbbs.com
KA8ZNY,N8OOY	Tom & Cheryl Taft	386 Cherry Street	Groveport	OH	43125	614-202-9042	ka8zny@copper.net

ATCO MEMBERSHIP INFORMATION

Membership in ATCO (Amateur Television in Central Ohio) is open to any licensed radio amateur who has an interest in amateur television. The annual dues are $10.00 per person payable on January 1 of each year. Additional members within an immediate family and at the same address are included at no extra cost.

ATCO publishes this newsletter quarterly in January, April, July, and October. It is sent to each member without additional cost.

The membership period is from January 1ST to December 31ST. New Members will receive all ATCO newsletters published during the current year prior to the date they join ATCO. For example, a new member joining in June will receive the January and April issues in addition to the July and October issues. As an option for those joining after mid July, they can elect to receive a complementary October issue with the membership commencing the following year Your support of ATCO is welcomed and encouraged.

ATCO CLUB OFFICERS

President: Art Towslee WA8RMC
V. President: Ken Morris W8RUT
Treasurer: Bob Tournoux N8NT
Secretary: Frank Amore WA8HFK
Corporate trustees: Same as officers

Repeater trustees: Art Towslee WA8RMC
Ken Morris W8RUT
Dale Elshoff WB8CJW
Statutory agent: Frank Amore WA8HFK
Newsletter editor: Art Towslee WA8RMC

ATCO MEMBERSHIP APPLICATION

RENEWAL O NEW MEMBER O DATE _____
CALL _____
OK TO PUBLISH PHONE # IN NEWSLETTER YES O NO O
HOME PHONE _____
NAME_____
INTERNET Email ADDRESS_____
ADDRESS _____
CITY _____ STATE _____ ZIP _____-_____
FCC LICENSED OPERATORS IN THE IMMEDIATE FAMILY
_____
COMMENTS_____
_____
_____

ANNUAL DUES PAYMENT OF $10.00 ENCLOSED CHECK O MONEY ORDER O
Make check payable to ATCO or Bob Tournoux & mail to: Bob Tournoux N8NT 3569 Oarlock CT Hilliard, Ohio 43026. Or, if you prefer, pay dues via the Internet with your credit card. Go to **www.atco.tv/paydues** and fill out the form. Payment is made through "PayPal" but you DO NOT need to join PayPal to send your dues. Simply DO NOT fill out the password details and there will be no PayPal involvement.

ATCO TREASURER'S REPORT - de N8NT

OPENING BALANCE (04/26/05)..... $1851.01
RECEIPTS(dues)..... $ 160.00
Dayton ticket reimbursement..... $ 240.00
Power supply sales..... $ 50.00
National City Bank promotional re-imbursement..... $ 150.00
Spring Event food..... $ (198.74)
Hamvention expenses (ics, pop, gas money for WU8O)..... $ (42.65)
Newsletter postage for January and April..... $ (90.00)
Antenna party food..... $ (47.13)
Paypal charges..... $ (0.59)
Internet domain name fees..... $ (44.63)
CLOSING BALANCE (07/26/05)..... $ 2027.27

ATCO Newsletter
c/o Art Towslee-WA8RMC
180 Fairdale Ave
Westerville, Ohio 43081

FIRST CLASS MAIL

REMEMBER...CLUB DUES ARE NEEDED.
CHECK MAILING LABEL FOR THE EXPIRATION DATE AND SEND N8NT A CHECK IF EXPIRED.