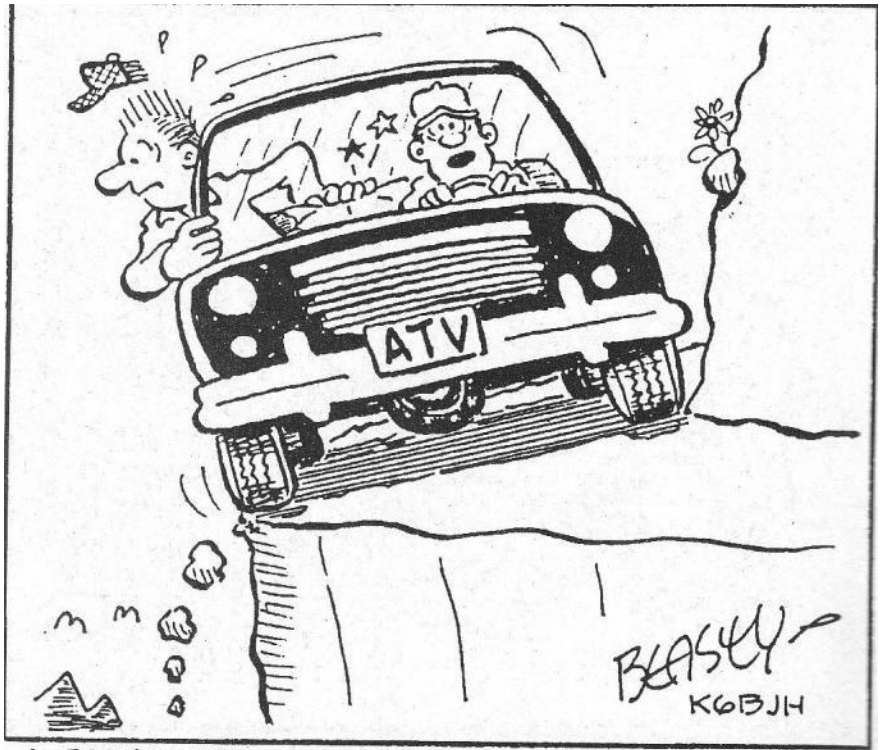
ATCO NEWSLETTER

VOLUME 33 NUMBER 3 **July 2016**

The ATCO newsletter is the official publication of a group of amateur television operators known as "AMATEUR TELEVISION IN CENTRAL OHIO Group Inc" and is published quarterly (January, April, July, and October)

ATCO SPOTLIGHT TOPIC

Thanks to Beasley, K6BJH (SK) and ATVQ Magazine for allowing us to share his cartoons. For the complete book on "The Best of Beasley" go to the ATVQ Magazine web site (http://atvquarterly.com/) available for purchase.



ACTIVITIES ... from my Workbench

Hello folks! It's summer time and gauged by the Tuesday night 2 meter NET attendance, it shows. We REALLY need to do something to boost activity. I know there are lots of people interested in ATV but somehow most find something else to do on Tuesday nights. I think there are more people listening but don't feel the need to check in. That's too bad because the ones who DO, think no one else cares so they too don't make their presence known next time. So, you see, activity breeds activity. Don't just sit on the sidelines and listen, make your presence known even if you don't think you have anything to say. OK, I've said my thing. Now let's move on.

I'm in the process of completing a DTMF controlled AC power strip for the repeater (Roger, you're not the only one with AC power strips). It is a 14 outlet AC power strip that I added a small micro and relays to be able to turn on and off 10 of the outlets with DTMF tones from the 2 meter receiver audio output. Bob, N8NT, is creating the software to control it. Then I'll replace the existing 14 outlet strip with the controlled one so we can independently turn on or off the AC power to each module in the rack. Presently we control some of the functions but not all.

We have shut down the 2433 MHz transmitter in preference to the MESH network transmitter/receivers operating on 2395 MHz. Two MESH systems are operational but need a software upgrade. I cannot get to one of the units because it is mounted at the SOT "crow nest" location and in full view of nesting falcons. Therefore I am NOT going to risk being clawed by the angry birds while they have young around. I believe nesting season is almost over now so when I get the power strip complete I'll install the outlet and upgrade the MESH systems.

While I'm there installing the outlet and upgrading MESH, I plan to try to re-install the 439MHz preamp I tried to install last time but couldn't get it to work. Something wasn't right so after running out of time, I removed it and decided to try again at another time. We'll see.

Is it time for another Pizza party or maybe a trip to tour a TV station? Let me know if anyone is interested. Will anyone volunteer to start the ball rolling?

That's all I can think of right now guys! Don't forget, the Columbus Hamfest is coming up the first part of August. The flyer is later in this Newsletter.

73,
…WA8RMC

DAYTON HAMVENTION 2016 ATTENDANCE UP SLIGHTLY

Recapping Dayton Hamvention® 2016, Jim Tiderman, N8IDS, who has served as general chairman of the event for the past 2 years, said attendance this year may have been up slightly from 2015. Tiderman, who now passes the baton to a new general chairman -- Ron Cramer, KD8ENJ -- said he feels the 2016 show, overall, went well.

Hamvention 2016 General Chairman Jim Tiderman, N8IDS, appeared on "Amateur Radio Roundtable" in May.

"In my humble opinion, it went smoother than we had a right to think it could," Tiderman told ARRL. "The credit for that happening -- this year and last -- goes to our volunteer base and returning committee chairs, who get their talents in gear and go for it." He said each year's innovations feed into the vision that guides the next Hamvention administration, which Cramer will head after serving with Tiderman as assistant general chairman for the past 2 years.

Tiderman said that while it's still too soon to get an accurate attendance count for Hamvention 2016, "indicators we use as a matter of course are showing us the slightest increase." He said that while it may not have seemed that way to some visitors, he prefers to keep a positive mind. Official attendance at the 2015 show was 25,621, up by about 750 from the previous year.

The weather did provide some momentary excitement, Tiderman said, when a microburst occurred in the flea market just north of the Mendelson's tent. The strong gust of wind took out two or three vendor tents, winding a pop-up tent leg around the fiber cable handling Internet service for the flea market office. "This caused stress and strain on the cable, and down it came," Tiderman recounted. "It did not break, but it did stop activity around the area of the downed cable until the Hara crew got it back into the air.

"So, where in other years there have been instances of things erupting 'from below,' this year it came from above," Tiderman quipped.

Vendor spaces were nearly full, both inside and outside Hara Arena. Tiderman said the 525 to 530 booth spaces inside were nearly filled to capacity, while first-day occupancy of the 2500 flea market spaces was at 96 percent.

INTERESTING STORY – with a surprise ending

(Bear with me guys – there IS a connection to digital television!) …WA8RMC

In 1933, a beautiful, young Austrian woman took off her clothes for a movie director. She ran through the woods, naked. She swam in a lake, naked pushing well beyond the social norms of the period. The most popular movie in 1933 was King Kong. But everyone in Hollywood was talking about that scandalous movie with the gorgeous, young Austrian woman.

Louis B. Mayer, of the giant studio MGM, said she was the most beautiful woman in the world. The film was banned practically everywhere, which of course made it even more popular and valuable. Mussolini reportedly refused to sell his copy at any price. The star of the film, called Ecstasy, was Hedwig Kiesler. She said the secret of her beauty was "to stand there and look stupid." In reality, Kiesler was anything but stupid. She was a genius. She'd grown up as the only child of a prominent Jewish banker. She was a math prodigy. She excelled at science. As she grew older, she became ruthless, using all the power her body and mind gave her.

Between the sexual roles she played, her tremendous beauty, and the power of her intellect, Kiesler would confound the men in her life including her six husbands, two of the most ruthless dictators of the 20th century, and one of the greatest movie producers in history. Her beauty made her rich for a time. She is said to have made - and spent - $30 million in her life. But her greatest accomplishment resulted from her intellect, and her invention continues to shape the world we live in today.

You see, this young Austrian starlet would take one of the most valuable technologies ever developed right from under Hitler's nose. *After fleeing to America, she not only became a major Hollywood star, her name sits on one of the most important patents ever granted by the U.S. Patent Office.*

Today, when you use your cell phone or, over the next few years, as you experience super-fast wireless Internet access (via something called "long-term evolution" or "LTE" technology), you'll be using an extension of the technology a 20- year-old actress first conceived

while sitting at dinner with Hitler. At the time she made Ecstasy, Kiesler was married to one of the richest men in Austria. Friedrich Mandl was Austria's leading arms maker. His firm would become a key supplier to the Nazis.

Mandl used his beautiful young wife as a showpiece at important business dinners with representatives of the Austrian, Italian, and German fascist forces. One of Mandl's favorite topics at these gatherings - which included meals with Hitler and Mussolini - was the technology surrounding radio-controlled missiles and torpedoes.

Wireless weapons offered far greater ranges than the wire-controlled alternatives that prevailed at the time. Kiesler sat through these dinners "looking stupid," while absorbing everything she heard. As a Jew, Kiesler hated the Nazis. She abhorred her husband's business ambitions. Mandl responded to his willful wife by imprisoning her in his castle, Schloss Schwarzenau. In 1937, she managed to escape. She drugged her maid, snuck out of the castle wearing the maid's clothes and sold her jewelry to finance a trip to London.

(She got out just in time. In 1938, Germany annexed Austria. The Nazis seized Mandl's factory. He was half Jewish. Mandl fled to Brazil. Later, he became an adviser to Argentina's iconic populist president, Juan Peron.) In London, Kiesler arranged a meeting with Louis B. Mayer. She signed a long-term contract with him, becoming one of MGM's biggest stars. She appeared in more than 20 films. She was a co-star to Clark Gable, Judy Garland, and even Bob Hope. Each of her first seven MGM movies was a blockbuster.

But Kiesler cared far more about fighting the Nazis than about making movies. At the height of her fame, in 1942, she developed a new kind of communications system, optimized for sending coded messages that couldn't be "jammed." She was building a system that would allow torpedoes and guided bombs to always reach their targets. She was building a system to kill Nazis.

By the 1940s, both the Nazis and the Allied forces were using the kind of single-frequency radio-controlled technology Kiesler's ex-husband had been peddling. The drawback of this technology was that the enemy could find the appropriate frequency and "jam" or intercept the signal, thereby interfering with the missile's intended path. Kiesler's key innovation was to "change the channel." It was a way of encoding a message across a broad area of the wireless spectrum. If one part of the spectrum was jammed, the message would still get through on one of the other frequencies. The problem was, she could not figure out how to synchronize frequency changes on both the receiver and the transmitter. To solve the problem, she turned to perhaps the world's first techno-musician, George Anthiel.

Anthiel was an acquaintance of Kiesler who achieved some notoriety for creating intricate musical compositions. He synchronized his melodies across twelve player pianos, producing stereophonic sounds no one had ever heard before. Kiesler incorporated Anthiel's technology for synchronizing his player pianos. Then, she was able to synchronize the frequency changes between a weapon's receiver and its transmitter. On August 11, 1942, U.S. Patent No. 2,292,387 was granted to Antheil and "Hedy Kiesler Markey," which was Kiesler's married name at the time.

Most of you won't recognize the name Kiesler. And no one would remember the name Hedy Markey. But it's a fair bet than anyone reading this newsletter of a certain age will remember one of the great beauties of Hollywood's golden age ~ Hedy Lamarr. That's the name Louis B. Mayer gave to his prize actress. That's the name his movie company made famous. Meanwhile, almost no one knows Hedwig Kiesler - a/k/a Hedy Lamarr - was one of the great pioneers of wireless communications. Her technology was developed by the U.S. Navy, which has used it ever since.

You are probably using Lamarr's technology, too. Her patent sits at the foundation of "spread spectrum technology," which you use every day when you log on to a wi-fi network or make calls with your Bluetooth-enabled phone. It is also the basis for some digital television formats (DVB-T). It lies at the heart of the massive investments being made right now in so-called fourth-generation "LTE" wireless technology. This next generation of cell phones and cell towers will provide tremendous increases to wireless network speed and quality, by spreading wireless signals across the entire available spectrum. This kind of encoding is only possible using the kind of frequency switching that Hedwig Kiesler invented.

SHE HAD 6 HUSBANDS, AND DIED AT AGE 85....A CHARMED LIFE TO SAY THE LEAST ! ! !
And now you know the rest of the story.

A NEW 10GHz ATV RECORD?

Following on from our earlier tests at 32 km distance, Noel G8GTZ and myself successfully tested RB-TV (333KS 7/8 H264) on 10 GHz over a 93 km path on Sunday 3 July. Received MERs were in the range 6 - 12 db with fading over the almost-LOS path.

G8GTZ was at Walbury Hill, near Newbury (IO91GI44EN) and I was on Povington Hill, near Lulworth (IO80WP01UD).
G8GKQ/P: DigiThin into G3WDG Transverter with Qualcomm PA. 250mW out. MiniTiouner RX and 60 cm dish.
G8GTZ/P: DATV-Express into DB6NT Transverter. 3W out. MiniTiouner RX and 60cm dish.
Next steps are to make some equipment improvements, and then try a longer path.
…Dave, G8GKQ

ATCO 2016 SPRING EVENT

Art, WA8RMC, started off the afternoon by welcoming everyone to the meeting and inviting all to lunch.
Thanks to Ken W8RUT for arranging use of the facility and to Dale WB8CJW for maintaining the repeater bulletin board and ATCO web page. Art brought up that Jones Rd site is not up, as there are no Dayton area ATV amateurs using it now. At this time Dave AH2AR, who was in attendance from DARA and maintains the ATV repeater for the club, made some comments regarding the state of ATV operations in the Dayton area:

- They plan to increase their DVB-T 1200 output to 150W
- Reuben (call sign?) is in recovery and plans to be active on analog & digital ATV when he recovers
- Dave hopes to get some interest rekindled.
- Bob N8NT is re-writing the "dues" part of the website membership page as the wrong expiration dates have been reported.
- John W8RXX suggested an antenna build day like CORC did. They built a loop antenna for fox hunting.
- John also suggested participation in ARRL Field Day last Sat. of June.
- Other suggestions included tour of television station *(I think this would be interesting, I know a lot of the present members did this "before" my time, but maybe some of the newer members like me would have interest? Mark...)*

An interesting presentation was made by Jay KB8YMQ regarding prototypical gas engine powered remote control helicopters, explaining the various types of remotes and how they operated along with the actual models themselves and details on how they operated as well, along with many comments on how various parts of the systems worked. (Before the meeting, Jay had one of his helicopters fired up and spent some time flying it around in an area adjacent to the parking lot) Jay also went into details about the dynamics of 2, 3 and 4 blade helicopter rotors along with interaction of the tail rotor, among other things. Jay continued by answering a number of questions by the audience ranging from flight characteristics to details of the radio system – it was obvious he has a firm grasp of the subject! Thanks Jay!

Members discussed the disposition of several items that were donated to the club (rigs, accessories and so on). It was decided there would be a future bid on them to maximize the value for the club, perhaps by announcement in a future newsletter.

Last but certainly not least, the usual drawing for door prizes was conducted for items donated for that purpose. As usual everyone should have walked away with "something"! Thanks to all the donors!
Respectfully submitted, Mark Cring, N8COO ATCO Club secretary

The meeting started off with….you guessed it, food. After all we can't concentrate on the meeting subject matter without a full stomach. But wait, maybe that wasn't a good idea after all. I heard snoring later. (No picture of the sleepers to preserve their identity).

After lunch and a short meeting Jay, KB8YMQ, gave us an RC helicopter demonstration that was extremely interesting and informative. I hadn't realized Jay was such a good presenter. Great job. Now that I know some of his hidden talents, we'll invite him back for a repeat soon.

DAYTON HAMVENTION ATV FORUM

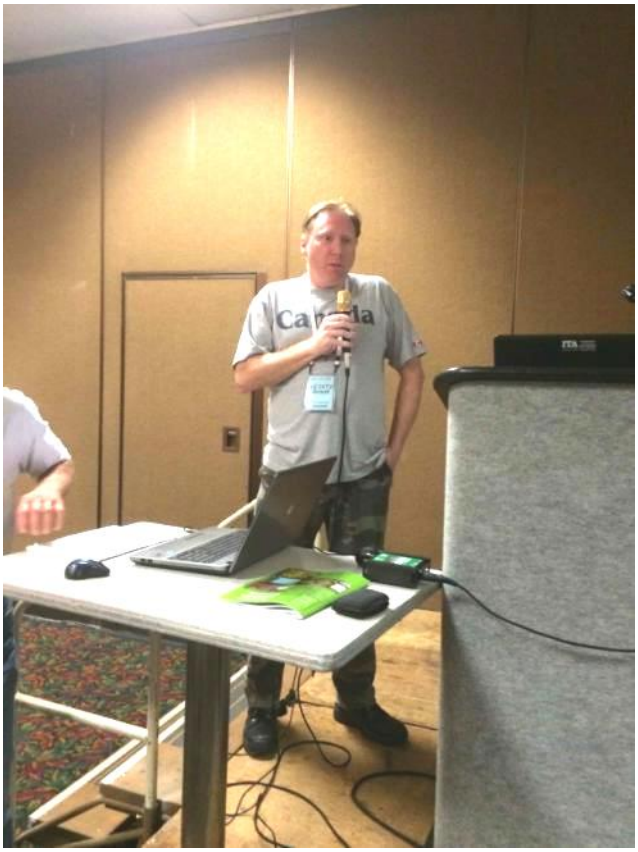
This year's Dayton Hamvention was one of the best in years, attendance was up by at least 20%. About 55 attendees were counted, up from about 35 last year! The photo above says it all! The Forum was held on Saturday Afternoon. Art Towslee WA8RMC was our moderator and he had a great lineup of speakers.

Gordon West, WB6NOA's "Gordo on Tropo" presentation was about the history of the tropo ducting between Hawaii and California that support ATV on 434 MHz for 2500+ mile contacts.

Mel Whitten, K0PFX's "High Definition ATV the easy way" presentation was about how easy it is to set up an HD ATV station using HiDes DVB-T equipment. Picture quality was outstanding from a not line of site station.

Mike Collis WA6SVT and Dan Bosin, KB8RCU's "ATV uses and ATN Update" featured a professionally shot and edited video about ATV and the ATN repeater system. Dan is a professional videographer, thanks to Dan for a great looking video with several shots filmed using a drone to show repeater sites and towers from a birds-eye view.

Grant Taylor VE3XTV/ZL1WTT's "DATV Repeater Design" presentation covered the latest in DATV video switching using ASI instead of converting to analog or HDMI to preserve the h.264 or MPEG-2 video. He also covered equipment and system layout.



Art Towslee WA8RMC, our moderator, opened the forum and held a question and answer session at the end. Thanks to Art for all the work getting a great time slot, great speakers and organization that it takes for a quality ATV forum!

DAYTON FRIDAY NIGHT ATV DINNER

The ATV Dinner on Friday night was well attended; this was a new location for us at the China Garden Buffet. The food was very good for a buffet and the facility gave us a private dining room for our event. We had several presentations and discussions about ATV around the USA and other countries. Digital ATV is bringing in new ATVers and getting many existing ATVers excited about DATV. We heard the news of several ATV repeaters coming back on the air and an increase in ATV activity worldwide.

DAYTON ATN BOOTH

Thanks to Dave Stephowski KC3AM for getting and setting up a booth for ATN this year. It was great seeing so many ATVers and hams stop by the booth with interest in ATV and several new subscribers to ATVQ as a result!
Below Mike, WA6SVT, is discussing ATV and describing the value of his ATVQ Magazine.

At the right is a monitor set up at the ATN booth receiving digital DVB-S 1288MHz DATV from a camera in the flea market. Dave, KC3AM, is responsible for the excellent video.

WESTERVILLE FIELD DAY ADVENTURES

The National field day was held on July 9 this year. ATCO was invited to attend the one held by the CORC radio club so I thought I'd show up, help where I could and just monitor the proceedings since I'd never been at a Ham Radio Field day before. Only two antennas were erected, John Perone, W8RXX, (red shirt) is shown in the picture at the right putting up a 20 meter dipole on the roof. (No, he's not sitting on the outhouse!) A 40 meter wire dipole was already installed.

The two operators shown below are hard at work establishing contacts. Bob, N8OCQ was also there and helped "man the stations".

LED LAMPS AND RF RADIATION

(*Be sure to keep LED lamps away from your ATV gear. It may be the source of interference)*

From ARRL Headquarters Newington CT June 30, 2016
FCC's OET Clarifies Emissions Compliance Testing for RF LED Lighting Devices

The FCC's Office of Engineering and Technology (OET) has clarified that all RF LED lighting devices falling under Part 15 rules as "unintentional radiators" must meet conducted and radiated emissions limits set forth in those rules.

"Operation of Part 15 unintentional radiators is subject to the condition that no harmful interference is caused," the OET reminded, in a knowledge database paper released on June 17. "Manufacturers and users should therefore note that lighting devices are required to cease operation, if harmful interference occurs."

The OET said radiated emissions measurements must be performed at least from 30 MHz to 1000 MHz to adequately demonstrate compliance with Part 15 (15.109). Its guidance, the OET continued, applies to RF LED lighting devices that, in the past, have been considered to operate on frequencies below 1.705 MHz. Previously, devices operating between 9 kHz and 1705 kHz had to be tested only for radiated emissions up to 30 MHz, where no specified radiated emissions limits exist, and were exempt from testing from 30 MHz to 1000 MHz. The OET said it recognizes that routine radiated emissions measurements are needed under Part 15, based on the highest frequency generated or used in the device.

"[W]e have found that emissions from RF LED lighting devices are non-periodic, broadband in nature, and are produced as a byproduct of the internal driver circuitry within the RF LED lighting device," the OET "knowledge database" paper said. "These types of emissions have adequate energy and potential to generate radiated emissions well above 30 MHz."

The ARRL Lab's Electromagnetic Compatibility Engineer Mike Gruber, W1MG, said he was pleased to see the FCC's OET clarify the test measurement requirements. He said ARRL is generally hearing more RFI complaints stemming from RF LED bulbs.

"Not only are the emissions limits higher for Part 15 LED bulbs – as opposed to Part 18 fluorescent and CFL bulbs, they seem to be winning out in terms of consumer popularity," Gruber said. "Higher limits and more bulbs probably make for more complaints." Gruber said the Lab has seen LED lighting devices causing problems in the 2 meter band. "Since conducted emissions limits do not apply above 30 MHz, radiated emissions limits can be the first line of defense against RFI at these higher frequencies."

Gruber pointed out that noise generated by street and traffic lighting can be widespread. In such instances, he suggested that Part 15b limits for residential areas should apply. "These limits are lower than Part 15a limits, which are intended only for commercial and industrial environments," he explained. "This is especially critical in cases where a pole transformer connected to the lighting device also feeds a home or residence. The 240 V split-phase secondary systems can conduct RF into a residence through the service entrance panel." He suggested that the lower limits may benefit mobile users.

The OET noted that the ANSI Accredited Standards Committee C63-EMC is drafting measurement procedures for lighting devices. "When complete, we expect it will address in greater detail the measurement procedures and configurations to be used in determining compliance," the OET said.

COLUMBUS HAMFEST DETAILS

Columbus Hamfest and our Ohio Section Conference. This needs some PR for sure.. This year has really taken its toll on the Aladdin guys with the death of Jim. He was really the guy who spearheaded this up for the rest of them. Now that he's gone, there's really no one that seems to be taking the lead in making sure that this really gets promoted. Please, whenever and wherever you can, make sure that everyone knows about this event.

Here's what's on the agenda so far for the Hamfest / Conference:

9:00 – 10:00 ARES - Stan Broadway, N8BHL
10:00 - 11:00 National Parks On The Air - Eric McFadden, WD8RIF
11:00 – 12:00 OSSBN Semi-Annual meeting - Mike Hayward, KC8WH
12:00 – 1:00p ARRL / Conference Awards Presentation - Scott Yonally, N8SY

VE Testing will be done on site and we will also have a Card Checker there.. Dave Vest, K8DV has volunteered to come up and do the checking. Dave can also do cards for 160m too.. This is a real plus since we lost Keith Kemper last year.

2016 COLUMBUS, OHIO HAMFEST
and
OHIO SECTION CONFERENCE
Saturday, August 6, 2016

Sponsored by:

The Voice of Aladdin Amateur Radio Club - W8FEZ

8:00 AM - 1:00 PM

Talk-in on: 146.760 – PL 123.0

(Doors open at 6:00 AM for vendor setup)

Located at:

Aladdin Shrine Center

NEW 1801 Gateway Circle NEW

Grove City, Ohio 43123

Behind Tee Jayes restaurant, off Stringtown Road at I-71

Admission	Indoor Tables	Outdoor Space
$5 at the gate 12 and under free	Free with paid admission	Free with paid admission

- **Forums** – Covering a wide range of fun and informative Amateur Radio Topics,
- **Vendors** – Universal Radio, and big name vendors. See the website for the growing list!
- ***V.E. amateur Radio License Testing***
- **Ohio Single Side Band Net** - *Annual Meeting*

For Hamfest information visit our Website

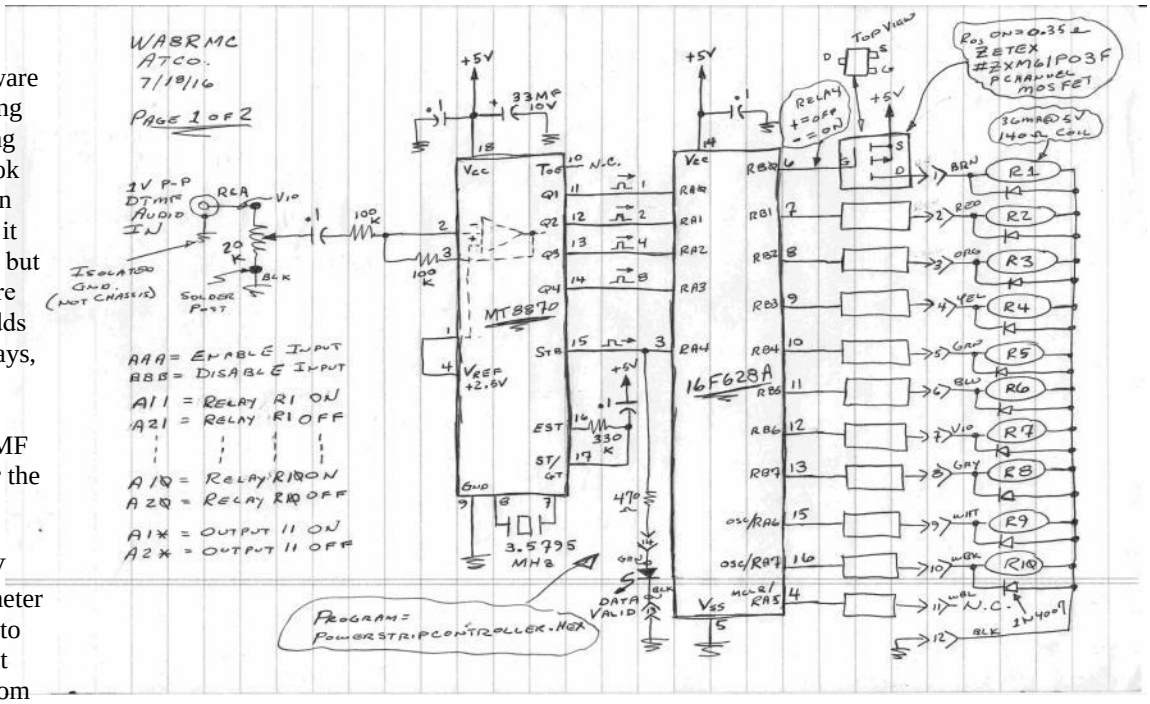
http://www.columbushamfest.com/

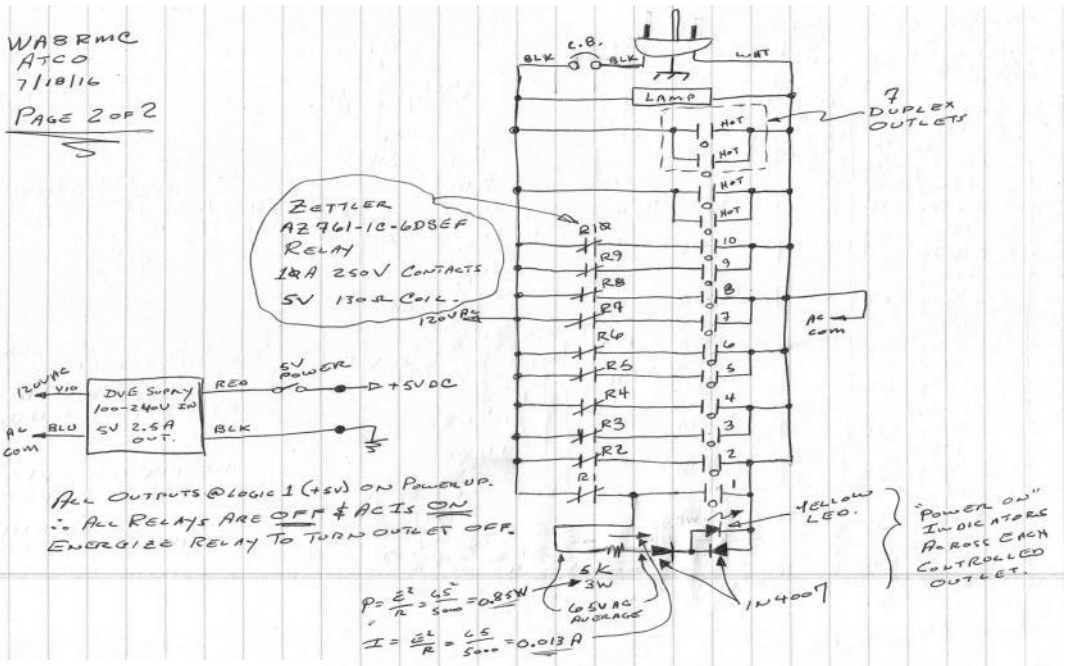
ATCO REPEATER POWERSTRIP CONTROLLER

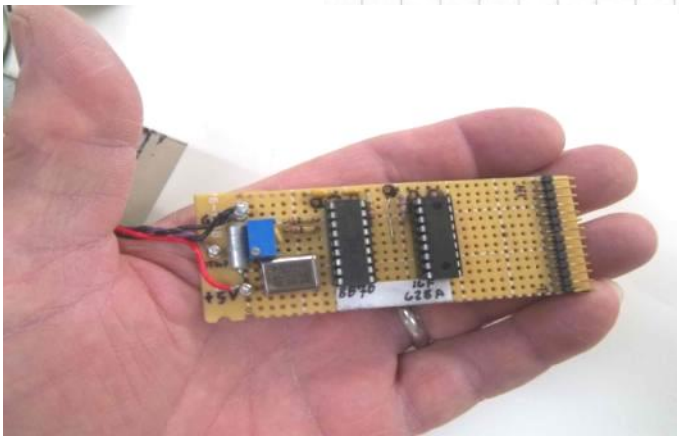
I've been working on this controller off and on for about a month now. With the help of Bob, N8NT, we got the software refined to where it works correctly now so I thought I'd describe it here. Pardon the rough schematic. I don't have time right now to refine it.

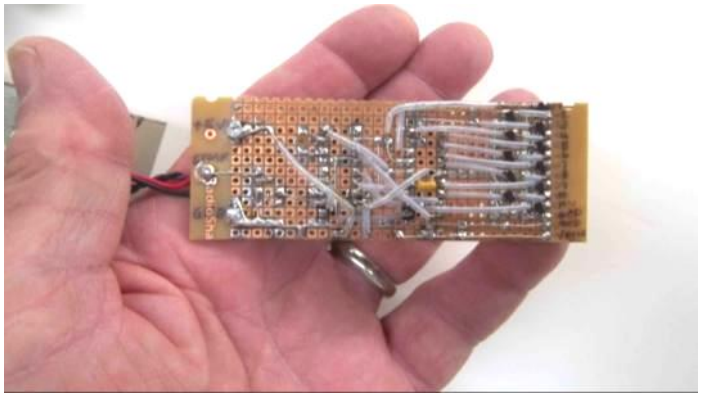
Bob is remarkable! He knows software and I only know hardware so from my vantage point looking at software is kind of like stirring up muddy water. The more I look at it, the muddier it gets. Bob, on the other hand, kind of stares at it like he can't figure it out either, but all of a sudden says, "I see where the problem is", dives into it, adds two or three lines of code and says, "There, try it now". Hurray!

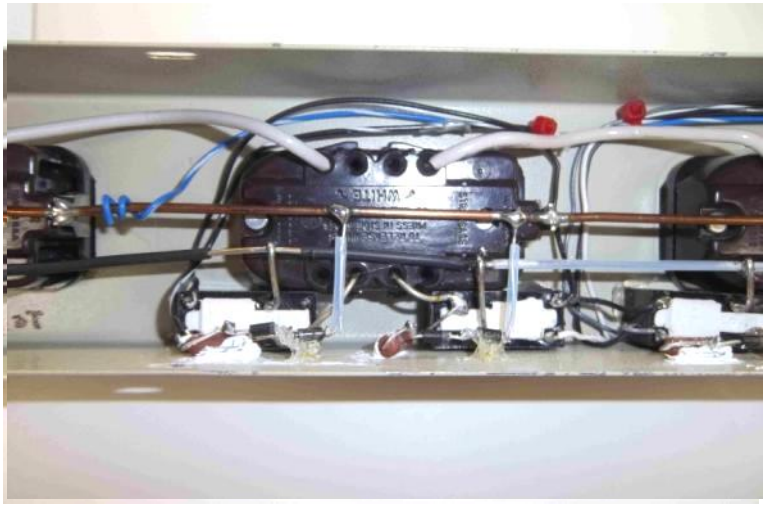
So, we now we will have a DTMF controlled power outlet strip for the repeater. When installed, it will replace the existing "14 outlet" power strip that powers all ATV modules in the cabinet. The 2 meter radio audio output will connect to the new outlet strip DTMF input connector so that touch tones from the 2 meter radio will be able to turn on and off each power outlet separately. (I must remember to power the 2 meter radio from one of the non-controlled outlets). Dale created means to control the DATV transmit modules but now we will have control of everything. I'll install it at my next opportunity. Below are pictures of my work. The schematics are not pretty but I've not had time to clean it up so forgive me. If anyone would like to duplicate this design completely or in part, for their own shack, let me know. The software was created in basic and is also editable at the assembly level so it is easy to customize it for other uses. Let me know if you want a copy.
…WA8RMC












2
1
2
1
DATA VALID
DTMF INPUT
DTMF CONTROL
+5V POWER
ON
OFF


2
1

CONSTRUCTION ARTICLE INDEX

The following list is an index of all construction related material that has appeared in the ATCO Newsletter since its inception in the early '80's. This is a handy reference for that particular construction article that you knew existed but didn't want to wade through each issue to find it. All Newsletters below are also listed in order in the ATCO homepage under "Newsletters".CTRL Click on www.atco.tv. Once you locate the Newsletter section, the displayed list can then be re-sorted as needed by clicking on the "date" in the header.

…Bob N8OCQ

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Vol 2 III	7	1296 Ant 45 Ele loop yagi
Vol 2 III	10	RF Power Indicator (in-line) for 1296 MHZ
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Vol 2 SE	4,5	1296 MHZ 10 Watt Solid State Linear Amp
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Vol 21 II	14	10-14 Volt Doubler for 28 Volt Ant Relays
Vol 21 III	5	S-Video To Composite Adaptor
Vol 21 IIII	3,4	Video Noise Rejection Amp
Vol 21 IIII	14,15,16,17	"S" Meter For Comtech Boards
Vol 22 I		No Articles
Vol 22 II	10	1260 MHZ Cavity Filter
Vol 22 III		No Articles
Vol 22 IIII		No Articles
Vol 23 I		No Articles
Vol 23 II	5,6	Linear 60 Watt For 70CM
Vol 23 II	8,9	Video Modulator Update
Vol 23 III		No Articles
Vol 23 IIII		No Articles
Vol 24 I	13	RF Sniffer For 2.4 GIG
Vol 24 II		No Articles
Vol 24 III	3	Quantum 1500 Rec Tuner Mod
Vol 24 IIII	9	Battery Recharge Ckt
Vol 25 I		No Articles
Vol 25 II	6,7	Comtech TX Module Improvement
Vol 25 III	11	Comtech TX Module Improvement Correction
Vol 26 I	6	Isolator (Circulator) Mod. 850 To 1260 MHz
Vol 26 II	5,6	Comtech 1200 MHz rec. module improvements
Vol 26 III		No Articles
Vol 26 IIII	9	Remote Touch Tone Decoder For Your Shack
Vol 27 I	10	ATV Low Pass Filter (427 Mhz)
Vol 27 II	15	PictureTel Camera Data Cable Wiring
Vol 27 II	10	ATV Low Pass Filter (427 Mhz)
Vol 27 II	15	PictureTel Camera Data Cable Wiring
Vol 27 III		No articles
Vol 27 IIII		No articles
Vol 28 I	11	Super 1280 MHz amplifier
Vol 28 II		No articles
Vol 28 III		No articles
Vol 28 IIII		WB8LGA Antenna switching system
Vol 29 I		No articles
Vol 29 II		1280 MHz Hi Gain Panel Antenna
Vol 29 III		No articles
Vol 29 IIII		No articles
Vol 30 I		No articles
Vol 30 II		No articles
Vol 30 III		No articles
Vol 30 IIII		No articles
Vol 31 I		No articles
Vol 31 II		No articles
Vol 31 III		No articles
Vol 32 I	12	On screen display generator
Vol 32 II	7	DVB-T power amplifiers
Vol 32 III		No articles
Vol 32 IIII		No articles
Vol 33 I		No articles
Vol 33 II		No articles
Vol 33 III	12	Power strip controller

This is the complete list for construction articles shown in past ATCO newsletters. The page numbers listed may not match the actual page in the Newsletter. They are the numbers shown in the PDF file. Some early issues are missing. Art did not have a copy of every year. This list is complete through Volume 33 II.

…Bob N8OCQ

LOCAL HAMFEST SCHEDULE

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. To see additional details for each Hamfest, Control Click on the blue title and the magic of the Internet will give you the details complete with a map! To search the ARRL Hamfest database for more details, CTL click ARRLWeb: Hamfest and Convention Calendar …WA8RMC.

07/17/2016 | Van Wert Hamfest
Location: Van Wert, OH
Type: ARRL Hamfest
Sponsor: Van Wert Amateur Radio Club
Website: http://w8fy.org

08/06/2016 | Columbus Hamfest
Location: Grove City, OH
Type: ARRL Hamfest
Sponsor: Voice of Aladdin Amateur Radio Club (W8FEZ)
Website: http://www.columbushamfest.com

08/13/2016 | MARA's 5th Annual Swapmeet
Location: Miamisburg, OH
Type: non-ARRL Hamfest
Sponsor: Mound Amateur Radio Association
Website: http://w8dyy.org

08/21/2016 | Cuyahoga Falls ARC's Eighth Annual Tailgate Hamfest
Location: Stow, OH
Type: ARRL Hamfest
Sponsor: Cuyahoga Falls Amateur Radio Club
Website: http://cfarc.org/tailgate.php

09/11/2016 | Findlay Hamfest
Location: Findlay, OH
Type: ARRL Hamfest
Sponsor: Findlay Radio Club
Website: http://www.findlayradioclub.org

09/17/2016 | OH-KY-IN Hamfest
Location: Cincinnati, OH
Type: ARRL Hamfest
Sponsor: OH-KY-IN Amateur Radio Society
Website: http://www.ohkyin.org

09/25/2016 | Cleveland Hamfest and Computer Show
Location: Berea, OH
Type: ARRL Hamfest
Sponsor: Hamfest Association of Cleveland
Website: http://www.hac.org

10/16/2016 | Conneaut ARC Hamfest
Location: Conneaut, OH
Type: ARRL Hamfest
Sponsor: Conneaut Amateur Radio Club
Website:
https://www.facebook.com/events/1109527472432186/

10/23/2016 | Massillon ARC Hamfest
Location: Massillon, OH
Type: ARRL Hamfest
Sponsor: Massillon Amateur Radio Club
Website: http://www.w8np.org

11/12/2016 | Indiana State Convention (Fort Wayne Hamfest & Computer Expo)
Location: Fort Wayne, IN
Type: ARRL Convention
Sponsor: Allen County Amateur Radio Technical Society
Website: http://www.fortwaynehamfest.com

TUESDAY NITE NET ON 147.48 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 followed by late check-in requests or comments. We usually chat for about ½ hour so please join us locally or via internet at www.BATC.tv then ATV repeaters thenWR8ATV.

ATCO TREASURER'S REPORT - de N8NT

OPENING BALANCE (04/23/16).....	$ 1796.08
RECEIPTS(dues).....	$ 80.00
PayPal fee.....	$ (0.59)
Spring Event food.....	$ (210.85)
CLOSING BALANCE (07/20/16).....	$ 1664.64

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 the average street level (1460 feet above sea level)

TV Transmitters:	423.00 MHz DVB-T, 10 W cont, FEC=7/8, Guard=1/32, Const=QPSK, FFT=2K, BW=4MHz, PMT=4095, PCR=256, Video=256, audio=257
	427.25 MHz Analog VSB AM, 50 watts average 100 watts sync tip (Analog TV on cable channel 58)
	1258 MHz 40 watts FM analog
	1268 MHz DVB-S QPSK 20W continuous. SR=3.125MS, FEC=3/4, PMT=32,Video=162,Teletext=304,PCR=133,Audio=88,Service =5004)
	2395 MHz Mesh Net transceiver 600mw output (channel 1 -2). ID is WR8ATV-2
	10.350 GHz: 1 watt continuous analog FM
Link transmitter:	446.350 MHz: 5 watts NBFM 5 kHz audio. This input is used for control signals.

Identification:	423, 427, 1258, 1268 MHz, 10.350GHz transmitters video ID every 10 min. with active video and information bulletin board every 30 minutes.
	423 MHz digital, 1268 MHz digital & 10.350 GHz analog - Continuous transmission of ATCO & WR8ATV with no input signal present.

Transmit antennas:	423.00 MHz – 8 element Lindsay horizontally polarized 6dBd gain "omni"
	427.25 MHz - Dual slot horizontally polarized 7 dBd gain "omni" major lobe east/west, 5dBd gain north/south
	1258 MHz - Diamond vertically polarized 12 dBd gain omni
	1268 MHz - Diamond vertically polarized 12 dBd gain omni
	2395 MHz - Comet Model GP24 vertically polarized 12 dBd gain omni (Used for experimental Mesh Net operation)
	10.350 GHz - Commercial 40 slot waveguide slot horizontally polarized 16 dBd gain omni

Receivers:	147.480 MHz - F1 audio input with touch tone control. (Input here = output on 446.350)
	438.000 MHz - DVB-T QPSK, 2K BW. Receiver will auto configure for FEC's and PID's. (Input here = output on all TV transmitters)
	439.250 MHz - A5 NTSC video with FM subcarrier audio, **lower sideband**. (Input here = output on all TV transmitters)
	449.975 MHz - F1 audio input aux touch tone control. 131.8 Hz PL tone. (Input here = output on 446.350).
	1288.00 MHz - F5 video analog NTSC. (Input here = output on all TV transmitters)
	1288.00 MHz - DVB-S QPSK digital SR=4.167Msps, FEC=7/8. PIDs: PMT=133, PCR=33, Video=33, Audio=49 (Input here feeds all TV transmitters and also goes directly to 1268 MHz DVB-S digital output channel 2.)
	2398.00 MHz - F5 video analog NTSC. (Input here = output on all TV transmitters)
	10.450 GHz - F5 video analog NTSC. (Input here = output on all TV transmitters)

Receive antennas:	147.480 MHz - Vert. polar. Diamond 6dBd dual band (Shared with 446.350 MHz link output transmitter)
	438.00/439.250 MHz - Horizontally polarized dual slot 7 dBd gain major lobe west (Shared with 438 & 439 receivers)
	1288.00 MHz - Diamond vertically polarized 12 dBd gain omni (shared with analog and DVB-S receivers)
	2395.00 MHz - Comet Model GP24 vertically polarized 12 dBd gain omni (Used for experimental Mesh Net operation)
	10.450 GHz - Commercial 40 slot waveguide horizontally polarized 16 dBd gain omni

Auto mode Input control:	Touch Tone	Result (if third digit is * function turns ON, if it is # function turns OFF)
	00*	turn transmitters **on** (enter manual mode-keeps transmitters on till 00# sequence is pressed)
	00#	turn transmitters **off** (exit manual mode and return to auto scan mode)
	264	Select Channel 4 Doppler radar. (Stays on for 5 minutes) Select # to shut down before timeout.
	004	Select 10.450 GHz receiver. **(Always exit by selecting 001)**
	003	Select room camera **(Always exit by selecting 001)**
	002	Select roof camera. Select room cam first then 002 for roof cam. (**Always exit by selecting 001**)
	001	Select 2398 MHz receiver then 00# for auto scan to continue

Manual mode Functions:		
	00* then 1 for Ch. 1	Select 439.25analog /438digital receiver (if video present on digital, it is selected. Otherwise analog)
	00* then 2 for Ch. 2	Select 1280 digital receiver
	00* then 3 for Ch. 3	Select 1280 analog receiver
	00* then 4 for Ch. 4	Select 2398 receiver
	00* then 5 for Ch. 5	Select video ID (17 identification screens)
	01* or 01#	Channel 1 439.25 MHz scan enable (hit 01* to scan this channel & 01# to disable it)
	02* or 02#	Channel 2 1288 MHz digital receiver scan enable
	03* or 03#	Channel 3 1288 MHz analog receiver scan enable
	04* or 04#	Channel 4 2398 MHz scan enable
	A1* or A1#	Manual mode select for 439.25 receiver audio
	A2* or A2#	Manual mode select for 1288 digital receiver audio
	A3* or A3#	Manual mode select for 1288 analog receiver audio
	A4* or A4#	Manual mode select for 2398 receiver audio
	C0* or C0#	Beacon mode – transmit ID for twenty seconds every ten minutes
	C1* or C1#	C1* to turn off 438 MHz DVB-T Tx, C1# to enable it (Must be in manual mode to enable this function).
	C2* or C2#	C2* to turn off 423 MHz DVB-T Rx, C2# to enable it (Must be in manual mode to enable this function).

Note: The DVB-T Tx and Rx units can lock up when they lose video or see bad video. When this happens, power must be cycled. To do this select C1* or C2* to turn off power. A few seconds later select C1# or C2# whichever appropriate to restore power to selected unit. Wait about 15 to 30 seconds to see restored operation. (Example: To reset the DVB-T receiver enter C2*,wait a few seconds then C2#)

ATCO MEMBERS as of April 2016

Call	Name	Address	City	St	Zip	Phone
KD8ACU	Robert Vieth	3180 North Star Rd	Upper Arlington	OH	43221	614-457-9511
AH2AR	Dave Pelaez	1348 Leaf Tree Lane	Vandalia	OH	45377	937-264-9812
W8ARE	Larry Meredith III	6070 Langton Circle	Westerville	OH	43082-8964	
NN8B	Don Kemp	6384 Camp Blvd.	Hanoverton	OH	44423	
VK3BFG	Peter Cossins					
N9BNN	Michael Glass	6836 N. Caldwell Rd	Lebanon	IN	46052	
WB8CJW	Dale Elshoff	8904 Winoak Pl	Powell	OH	43065	614-210-0551
N8COO	C Mark Cring	2844 Sussex Place Dr.	Grove City	OH	43123	614-836-2521
N3DC	William Thompson	6327 Kilmer St	Cheverly	MD	20785	301-772-7382
K8DMR	Ron Fredricks	8900 Stonepoint Ct	Jennison	MI	49428-8641	
W8DMR	Bill Parker	2738 Florbunda Dr	Columbus	OH	43209	
WA8DNI	John Busic	2700 Bixby Road	Groveport	OH	43125	614-491-8198
K8DW	Dave Wagner	2045 Maginnis Rd	Oregon	OH	42616	419-691-1625
WB8DZW	Roger McEldowney	5420 Madison St	Hilliard	OH	43026	614-405-1710
KB8EMD	Larry Baker	4330 Chippewa Trail	Jamestown	OH	45335-1210	
KC8EVR	Lester Broadie	108 N Burgess	Columbus	OH	43204	
N8FRT	Tom Flanagan	6156 Jolliff St.	Galloway	OH	43119	
W8FZ	Fred Stutske	8737 Ashford Lane	Pickerington	OH	43147	
WA8HFK,KC8HIP	Frank & Pat Amore	P.O. Box 2252	Helendale	CA	92342	614-777-4621
WA8HNS	Mike Gray	5029 St Rt 41 NW	Washington Ct Hs	OH	43160-8740	740-335-5133
WB2IIR	Michael Anthony	370 Georgia Drive	Brick	NJ	08723	
K8KDR,KC8NKB	Matt & Nancy Gilbert	5167 Drumcliff Ct.	Columbus	OH	43221-5207	614-771-7259
W8KHP	Allan Vinegar	2043 Treetop Lane	Hebron	Ky	41048	
WA8KKN	Chuck Wood	5322 Spruce Lane	Westerville	OH	3082-9005	614-523-3494
WA8KQQ	Dale Waymire	225 Riffle Ave	Greenville	OH	45331	937-548-2492
N8LRG	Phillip Humphries	30856 Coshocton Road	Walhonding	OH	43843	614-3543744
W8MA	Phil Morrison	154 Llewellyn Ave	Westerville	OH	43081	
KA8MFD	Ross McCoy	227 S Boundary St PO Box 9	Edison	OH	43320	
KA8MID	Bill Dean	2630 Green Ridge Rd	Peebles	OH	45660	
N8NT	Bob Tournoux	3569 Oarlock Ct	Hilliard	OH	43026	614-876-2127
W8NX, KA8LTG	John & Linda Beal	5001 State Rt. 37 East	Delaware	OH	43015	740-369-5856
WU8O	Tom Walter	15704 St Rt 161 West	Plain City	OH	43064	614-733-0722
N0OBG	Jim Conley	33 Meadowbrook C C Est	Ballwin	MO	63011	
W6ORG,WB6YSS	Tom, Maryann O'Hara	2522 Paxson Lane	Arcadia	CA	91007-8537	626-447-4565
N8OCQ	Bob Hodge Sr.	3750 Dort Place	Columbus	OH	43227-2022	
KC8QJR	Adam Burley	931 West High Street	Mount Vernon	OH	43050	
KE8PN	James Easley	1507 Michigan Ave	Columbus	OH	43201	614-421-1492
WA8RMC	Art Towslee	438 Maplebrooke Dr W	Westerville	OH	43082	614-891-9273
W8RUT,N8KCB	Ken & Chris Morris	2895 Sunbury Rd	Galina	OH	43021	
KB8RVI	David Jenkins	1941 Red Forest Lane	Galloway	OH	43119	614-853-0679
W8RWR	Bob Rector	135 S. Algonquin Ave	Columbus	OH	43204-1904	614-276-1689
W8RXX, KA8IWB	John & Laura Perone	3477 Africa Road	Galena	OH	43021	614-579-0522
WA6RZW	Ed Mersich	34401 Columbine Trl West	Elizabeth	CO	80107	
KB8SSH	Mike Cotts	3424 Homecroft Dr	Columbus	OH	43224	614-371-7380
WA6SVT	Mike Collis	PO Box 1594	Crestline	CA	92325	
KD8TIZ	Bob Holden	5161 Goose Lane Rd	Alexandria	OH	43001-9730	614-562-8441
K8TPY, K8FRB	Jeff & Dianna Patton	3886 Agler Road	Columbus	OH	43219	
NR8TV	Dave Kibler	243 Dwyer Rd	Greenfield	OH	45123	937-981-1392
W8URI	William Heiden	5898 Township Rd #103	Mount Gilead	OH	43338	419-947-1121
KB8UWI	Milton McFarland	115 N. Walnut St.	New Castle	PA	16101	
WA8UZP,KD8YYP	James & Anna Reed	818 Northwest Blvd	Columbus	OH	43212	614-297-1328
KC8WRI	Tom Bloomer	PO Box 595	Grove City	OH	43123	
AA8XA	Stan Diggs	2825 Southridge Dr	Columbus	OH	43224-3011	
KB8YMQ	Jay Caldwell	4740 Timmons Dr	Plain City	OH	43064	
KC8YPD	Joe Ebright	3497 Ontario St	Columbus	OH	43224	
WB8YTZ	Joe Coffman	233 S. Hamilton Rd	Gahanna	OH	43230-3347	
N8YZ	DaveTkach	2063 Torchwood Loop S	Columbus	OH	43229	614-882-0771
KA8ZNY,N8OOY	Tom & Cheryl Taft	386 Cherry Street	Groveport	OH	43125	614-202-9042
W8ZCF	Ferrel Winder	6686 Hitching Post Ln.	Cincinnati	OH	45230	
N8ZM	Tom Holmes	1055 Wilderness Bluff	Tipp City	OH	45371	

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 them with information. New members are our group's lifeblood so it's important we aggressively recruit new faces.

No new members this time

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 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. All Newsletters are sent via Email unless the member does not have an internet connection.

The membership period is from January 1ST to December 31ST. New members joining before August 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. For those joining after August 1ST, they can elect to receive a complementary October issue with the membership commencing the following year or get the previous (3) Newsletters. Your support of ATCO is welcomed and encouraged.

Membership expiration notices will be sent out in January in lieu of Newsletters for those with an expired membership.

NOTE: Dues records on your individual portion of the ATCO website are listed as the date money is received and shows due one year from that date. The actual expiration is on January of the following year to keep the dues clock consistent with the beginning of each year.

ATCO MEMBERSHIP APPLICATION

RENEWAL ○ NEW MEMBER ○ DATE _____
CALL _____
OK TO PUBLISH PHONE # IN NEWSLETTER YES ○ NO ○
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 ○ MONEY ORDER ○

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 and fill out the "pay ATCO dues" section. Alternately, you can use the ATCO web site www.atco.tv/PayDues.aspx directly. Credit card 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 CLUB OFFICERS

President: Art Towslee WA8RMC
V. President: Ken Morris W8RUT
Treasurer: Bob Tournoux N8NT
Secretary: Mark Cring N8COO
Corporate trustees: Same as officers

Repeater trustees: Art Towslee WA8RMC
Ken Morris W8RUT
Dale Elshoff WB8CJW
Statutory agent: Tom Bloomer KC8WRI
Newsletter editor: Art Towslee WA8RMC

ATCO Newsletter
c/o Art Towslee -WA8RMC
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Westerville, Ohio 43082

FIRST CLASS MAIL

REMEMBER...CLUB DUES ARE NEEDED.
CHECK THE
MEMBERS PAGE OF ATCO WEBSITE FOR THE EXPIRATION DATE.
SEND N8NT A CHECK OR USE PAYPAL IF EXPIRED.