

ATCO NEWSLETTER

VOLUME 28 NUMBER 3

July 2011

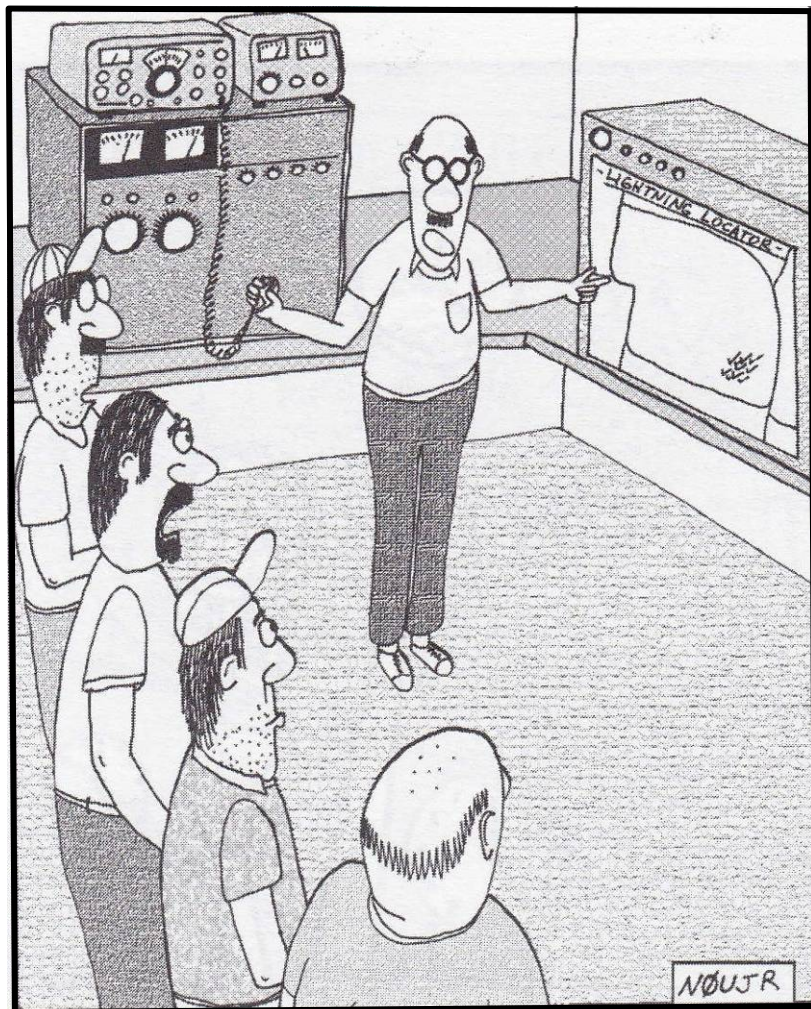
The ATCO newsletter is the official publication of a group of amateur television operators known as "AMATEUR TELEVISION IN CENTRAL OHIO Group Inc" and is published quarterly (January, April, July, and October)
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ATCO SPOTLIGHT TOPIC

Thanks to Greg Trook N0UJR for allowing us to share one of his cartoons. See also <http://incolor.inetnebr.com/n0ujr/>.

"Notice Gentlemen...

A sign of too much power output is when I key the ATV transmitter it registers as a hit on the weather channel lightning locator".



ACTIVITIES ... from my “workbench”



Hello again fellow ATCO ATVers! This time I'm trying to finish the ATCO Newsletter while in the midst of moving into a new house. It's really hard navigating my move operations and minimally staying on the air at the same time. We officially move August 19, but I already have most of my workshop in place at the new facility. However, it's all in boxes in the crawl space at this time. Frequently I've needed something in one of those boxes but not a clue as to which box to look in. **NO**, I didn't take the time to mark each box with the contents. The tower is about half down now and all antennas removed. If any of you need tower sections, let me know for I won't be able to put up all of it at the new place. I'm maintaining my 2 meter Omni so I can at least communicate on 147.48. I don't know when the equipment will be operational at the new place but it probably won't happen till late fall. Oh well, so much for the move. Now back to ATV stuff.

Not much has been going on with the repeater. In fact, I haven't been there for at least 4 months. There is a defective 1280 MHz spare antenna there that I have been meaning to retrieve and repair but other things have taken priority. The ID generator is working OK as far as I can see. Its video level seems low but acceptable for the time being. Since I added a battery backup to the ID generator, no resets have taken place. That's good. I still haven't finished the mounting work for the roof camera but that's next on the agenda after I get moved and settled. It's just about ready to go but I need to retrieve the 10GHz box, bring it home and test it with the camera as the camera plugs into it. There is also some resolution issues with the 10GHz signal that needs checking at the same time.

A new interference issue has surfaced. This time it's someone else interfering with **US**, not the other way around. It's a vertically polarized pulsed digital signal about 50 KHz wide centered on 438.00MHz. Whenever anyone transmits on 439.25, the interference signal flashes through it almost wiping out the 439 signal. It's very strong and can be heard in Marion, Ohio more than 50 miles away. I traced it to the medical complex under construction on the Ohio State University campus. I notified OSU communications and we confirmed that it was in fact on or near the construction site. Not being able to gain access to the site for tracking purposes, I called the FCC in Detroit as the last resort. They obliged and traveled to OSU to locate the source. They told me that it is a very strong signal and is indeed coming from somewhere around that facility but were unable to locate it within their allotted time frame. They spent a full day there but had to return to Detroit that evening. I heard nothing for about 2 weeks until I got an Email from Laura Smith from the enforcement division in Washington D.C. who said they were notified by the Domestic Affairs Bureau that we were having interference issues so she asked me for more details. I obliged which she then said she would direct the Detroit office to find and eliminate the problem as soon as possible. Recently, I got an Email from the Detroit office that said we were indeed on their radar screen and they will be out as soon as their schedule permits. That was about a week ago so I'm waiting for a date from them. They said they'd let me know when they're on their way so if I wanted to participate, that would be OK.

I've been participating in a new digital ATV forum group on Yahoo that is very interesting. My friend in California, Ken, W6HHC helped organize it and asked anyone interested in digital ATV to join also. He is the moderator. We discuss numerous topics generally centered on the digital ATV topic. I also welcome you to join and learn more about digital television from people around the globe. CTRL Click on the following link to learn more. <http://groups.yahoo.com/group/digitalATV> .

I've nothing else to report at this time. Hopefully there will be more by next Newsletter.
...73, WA8RMC



SPECTRUM MANAGEMENT BILL THREATENS HAM FREQUENCIES

April 21, 2010: ST. LOUIS, Missouri - Nearly two years after the digital TV transition, antenna sales are exploding as Americans migrate back to over the air reception. This has led antenna manufacturer, Antennas Direct, to its eighth year in a row of double digit growth, with \$8.7 million in 2010 revenue and a forecasted \$21 million in 2011 revenue, where sales were up 225% in Q1 alone.

To make the digital transition possible, the nation's broadcasters invested \$15 Billion dollars in rebuilding their stations. That investment is already paying major dividends as Americans become captivated with digital TV. In fact, the rush back to over-the-air is generating panic in pay TV providers, who for the first time in history, lost a record number of subscriber in 2010. It has also been estimated that 1.6 million people will cancel their cable or satellite by the end of 2011, according to the Convergence Consulting Group.

In the midst of this phenomenon, FCC chairman Julius Genachowski continues to assert that over-the-air broadcasting is no longer needed and consequently should be barred. These assertions are 180 degrees from the reality occurring in living rooms across America. As Antennas Direct's growth demonstrates, the pace of antenna sales are convincingly accelerating as people cut the cord. Viewers appreciate that not only does Digital TV offer improved picture quality, more channels and greater reliability, it's also free to the consumer - an important feature during a time of such economic challenges.

According to Richard Schneider, President of Antennas Direct, "Experts have been telling me for 8 years that OTA was dead, yet we have maintained 110% compound annual growth since we started, earning multiple honors on the Inc 500 fastest growing list. So the uninformed statements by the FCC Chairman are nothing but regurgitation of outdated notions from the waning days of analog TV."

Schneider goes on to point out that for legions of Americans, over-the-air digital TV is the new basic cable. "Digital TV is the new disruptive technology, terraforming the media landscape," said Schneider. "Think about it. Is it really surprising sales are exploding, considering the Billions invested by broadcasters and the cluelessness of the cable TV companies?"

"This year we are on pace to liberate nearly 1 million Americans from an unhappy relationship with their pay TV provider while putting over \$1.1B annually back in the pockets of our customers," said Schneider.

About Antennas Direct

Antennas Direct is a leader in antenna technology, reinventing the antenna for the digital era. With a heritage in over-the-air antennas specifically tuned for core DTV frequencies, Antennas Direct has invested major resources into the discovery and implementation of new antenna designs for digital reception. A multiple year Inc. 500 fastest-growing company, Visit www.antennasdirect.com for more information.

OLD TELEVISION MUSEUM REVISITED

Right after the Dayton Hamvention experience, a group of us decided to see if we could visit the Old Television Museum in Hillard, Ohio near Columbus. We were granted a private tour of the facilities with very satisfying results. We spent about two hours there but easily could have spent more if time permitted. He has, I believe, the most complete and comprehensive collection of old TV's from around the world ever assembled. Most of the sets are fully operational which is truly amazing. I recommend it as a perfect ending to the Dayton weekend. If you're at Dayton next year, put this museum on your schedule if you can as it's only a 1 hour drive from there. You'll not regret it! There is not enough space here to describe each picture but I'm sure you will recognize some of them!



AMATEUR DIGITAL TV COMES TO DENVER

By Ed Mersich – WA6RZW

I began my interest in digital video in 2005, when I discovered MythTV. I built a four tuner-recorder MythTV system. After the U.S. ATSC conversion in 2009 I was giving thought to constructing a HD audio-video distribution system using component and HDMI cabling, for the house. One day I made a visit to Best-Buy and looked behind their wall of TVs that were all displaying the same program. I noticed Best-Buy used coax to the antenna jack, and had programming on several ATSC channels. Best-Buy is using QAM (Cable TV format) digital signage modulators. This is a great solution if you have a lot of coax cable and tons of money. It isn't the solution for amateur DTV.

The DVB-S protocol is the defacto standard for European, Australian and U.S. ADTV experimentation. It works well in weak signal, high path loss environments, and incorporates a robust FEC (forward error correction) strategy. It uses MPEG-2 video compression, a widely used standard for all manner of video applications, including the U.S. commercial ATSC broadcasts. The DVB-S protocol supports several types of audio encoding, amateurs have settled on MPEG-2 audio and it produces high quality stereo sound. In addition to satellite up and down links, DBV-S is also used in a type of products known as "digital signage". The modulators used for the DVB-S digital signage applications operate in the 950-2150 MHz range. It conveniently happens to encompass the 23cm amateur radio band. That's the good part, the bad part is that the modulators have a fixed output power level (in the U.S.) of about 1uW (1 micro-watt), and are operated on coax cable systems, such as the Best-Buy example.



I found a commercial DVB-S computer based PCI board modulator model DTA-107 made by Dek Tec Digital Video B.V. in Netherlands. While the DTA-107 was not my first choice, it was usable and provided an opportunity to actually produce an ADTV signal. The DTA-107 requires a program file preformatted as a TS (transport stream) file. Fortunately, there is free software available to convert an MPEG-2 video/audio file into the TS format. Now that I had a modulator capable of producing an amateur DTV signal, the question of reception arises. How do you view the DVB-S signal on a receiving screen? Yet another stroke of serendipitous good fortune awaits the resourceful ham. There is a class of space satellite receivers known as FTA (Free to Air). FTA receivers today are primarily used for "KU" band satellites; in years past they were popular on "C" band, using those big 10-12 ft diameter backyard dish antennas. FTA receivers use, you guessed it, DVB-S protocol, and as luck would have it, the first IF (intermediate frequency) of the FTA receiver just happens to be, you guessed it again, 950-2150MHz. The combination of DVB-S modulators and FTA receivers is a solution just begging for a problem; how do you implement amateur digital television. While the use of "C" and "KU" bands for entertainment programming has declined dramatically since the advent of the DSS, such as DIRECTV, and Dish Network, these satellites are still used for entertainment, educational, religious, and corporate programming. Many FTA receivers have reached the used market, and are available on sites such as eBay. Prices range from \$25 to \$200+. A good FTA receiver with remote control can be purchased for under \$50, shipping included.



The DBV-S modulator and FTA receiver combination works splendidly on a cabled network. I now faced the problem of raising the -30dBm modulator power level to the 30 to 40 milliwatts that would be required to drive the final amplifier, a Downeast Microwave, Inc. model 2330PATV; a solid state amplifier with a proven ATV track record. The gain required for the pre-amplifier stages is 45dBm. I used two pre-amps from Mini-Circuits, Inc. and a surplus commercial microwave preamplifier found on eBay. The total gain of the three stage preamplifier circuit is 55dBm, more than enough to drive the final amplifier. One of my main concerns was that at some point I would lose the linearity of the signal and it would no longer produce a usable digital TV signal. My concern was unfounded; the pre-amplifier stages produce a beautiful signal and TV images up to the required +20dBm drive level. I was confident that a viable DTV transmitter was a feasible undertaking.

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You can learn more about the Denver ADTV project at: <http://wa6rzw.homelinux.net/addon/adv>
Credit for this article goes to the Denver Radio Club <http://www.w0tx.org/>. Denver Radio Club May 2011

AMATEUR DIGITAL TV COMES TO DENVER PART 2

By Ed Mersich – WA6RZW

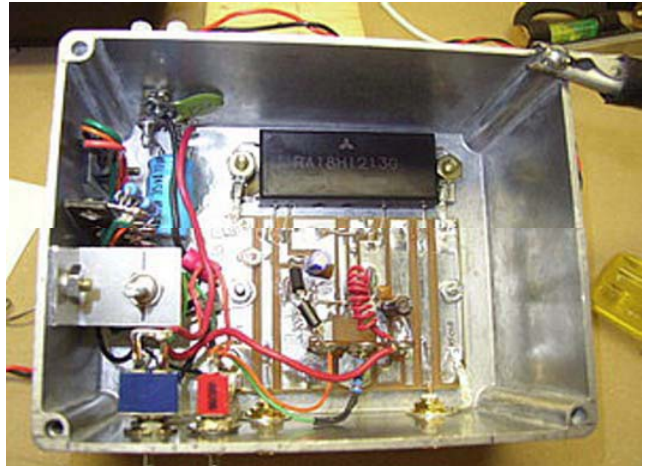
In part 1 of the amateur digital TV article I discussed the basic concept of using DVB-S modulators as the driver section of the amateur TV transmitter. Currently I have 2 modulators available in the transmitter equipment rack. The first is a computer PCI card based modulator model DTA-107 it is manufactured by Dek Tec Digital Video B.V. in Netherlands. It is intended for commercial business applications; most of this article will focus on adapting the DTA-107 for amateur TV transmissions. In addition to the DTA-107 modulator I also acquired a “Komplettsender” from [SR-Systems](#) (Stefan Reimann, DG8FAC) in Germany. The Komplettsender is an amateur DTV transmitter, taking line level video and audio inputs and producing a modulated RF output at +20dBm suitable for driving a final amplifier section in the 5-30 watt range. The Komplettsender is available in several DVB formats and bands from 70 to 6cm. The DTA-107 modulator operates in the “L” microwave band, with a software selectable output frequency.

Fortunately the output frequencies encompass the U.S. amateur radio frequency. I consulted the ARRL recommended band plan and selected 1255MHz as my desired output frequency. After installing the DVB-S modulator in the computer, and learning how to create the required TS (transport stream) formatted files I was faced with the task of increasing the signal level to a power level suitable for over the air transmissions. My target goal was about 10W RF output. Starting with the modulator power level of -30dBm (1uW) I added three pre-amplifier stages to bring the drive level to +22dBm or about 150mW. Although having been a ham for over 30 years and using various tube type and solid state radios and amplifiers over the years I had never actually operated a class “A” amplifier, let alone constructed one. Building a solid state class “A” microwave amplifier turned out to be quite educational, enlightening, and expensive. To be honest at the time I stated building the amplifier I had already ordered a completely assembled 30W amplifier from Downeast Microwave, Inc.; there was however, a four months wait time for delivery giving me ample time to be an “amateur radio man”. I decided to build the K9EK “L” band amplifier described in the ARRL Handbook since 1998. The K9EK amplifier is based on the M57762 a bipolar CMOS RF module; no longer in production (except in China of course). I found the K9EK PCB (printed circuit board) is available from FAR Circuits in Ohio, and with very little modification, the PCB is able to be used with the Mitsubishi RA18H1213G 30W MOSFET RF amplifier module.

The key element in class “A” design is the bias circuit forcing the amplifier into conduction even without an input signal. The original K9EK design called for a 9 volt bias and the newer MOSFET module specified a gate or bias voltage of around 5 volts. I thought I would outsmart the original designers and replace the fixed bias supply with an adjustable bias source; mistake. I mounted the PCB board, RF module, and bias supply in a cast aluminum box, with the confidence that

convection cooling would be adequate to prevent overheating; mistake. The FAR Circuits PCB is not a commercial grade product, while the RF input and output traces are intended to be 50 ohm stripline in reality they are not. This manufacturing anomaly would have no affect on the original M57762 RF module, however with the higher gain MOSFET device it proved to be problematic; mistake. To make matters worse included in the original K9EK design was a small variable capacitor on the input lead intended to adjust the module drive level; mistake. Let the testing begin. At the time I began testing of my modified design of the final amplifier I had no way to measure the output power level. I did have a [Spectran HF-4060](#) handheld analyzer, but without microwave experience it was not as helpful as it could have been. Additionally I had the pretuned FTA DVB-S receiver with its internal signal strength and quality indicators. To round out the test equipment is the DC ammeter on the 13.5 volt supply and the digital VOM connected to the adjustable bias circuit. With both the input and output connectors terminated I increased the bias voltage until the current showed 4 amps.

With a little experimentation I increased the bias voltage until I reached an input current of about 6.5 amps, and concluded this was the “safe” bias range; wrong. Within 10 minutes of this testing the aluminum case became uncomfortable to touch and I concluded the amplifier needed fan cooling. I modified the enclosure to add a small fan (*Above Right*) which solved the heat problem. After connecting the DTV drive signal of about +10dBm I was expecting to see my test picture on the receiver, but I got no picture. The handheld analyzer seemed to show a signal resembling the DTV signal expected but was centered at the wrong frequency, and was quite unstable. I needed better test equipment, and acquired a Bird wattmeter with the correct microwave slug. I found the amplifier was oscillating and putting out over 40 watts, with no input connected. I traced the problem to the mismatched input circuit and the trimmer capacitor.



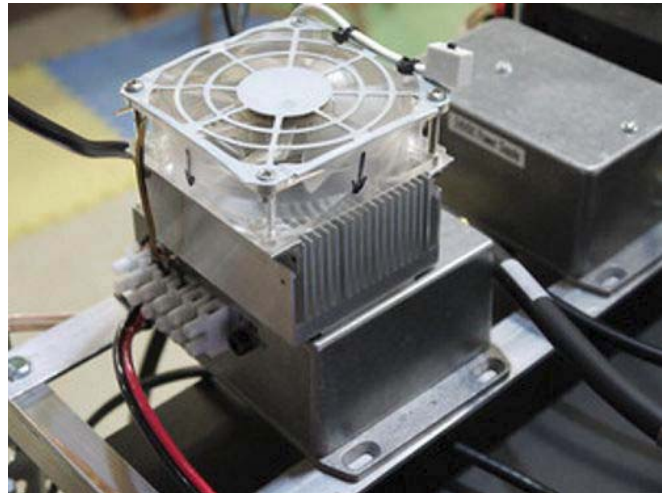
Completed K9EK 1.2 GHz Amplifier



Testing K9EK Amplifier

Bypassing the stripline with a short length of coax brought the amplifier into stability. The damage however was done. While still usable, the module is not able to reach its rated output level, but still usable at about 8 watts RF output, with a perfect DTV signal. Remaining to be done is full power range testing, linearity, purity, and harmonic testing. Hopefully we will actually see some real amateur DTV video miles away from the transmitter. You can see more about the K9EK amplifier construction at [WA6RZW ADTV Web Site](http://WA6RZWADTVWebSite).

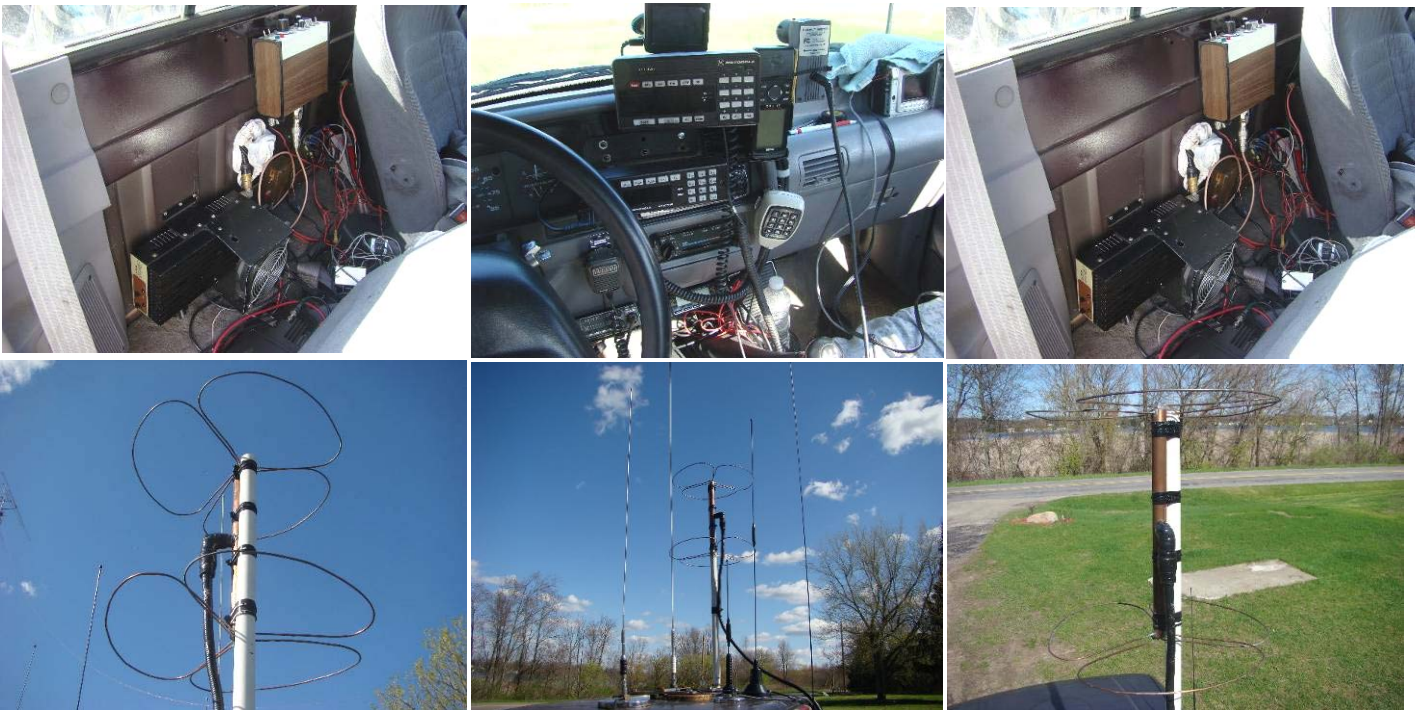
You can learn more about the Denver ADTV project at: <http://wa6rzw.homelinux.net/addon/adtv>
Credit for this article goes to the Denver Radio Club <http://www.w0tx.org/>. Denver Radio Club May 2011



Amplifier with Fan Modification

KC8LMI DISPLAYS HIS MOBILE 439MHz ATV SETUP

These are pictures of my 439.25 mobile ATV setup. It isn't pretty but it works. The stacked homemade wheels (made from Romex) mounted on a quad 5" magnet mount, fed with 6' of 1/2" Heliac. The TC70-1 exciter and model D1010 running 90 watts, 12 volt color camera and overlay board. This setup works flawless. I have driven over 30 miles away and dad could still see me. ...Bryan KC8LMI



PUZZLE TIME!

*Attached is a copy of a puzzle I received from Kent Wright a couple of years ago. It took me 6 Hrs 15 Min to solve. I will not feel bad if you can do it in three. I will send the solution later. (Bill Parker, W8DMR, should be able to solve it in about 15 minutes!)
...John Busic WA8DNI*

A friend of mine sent me this a while ago. I have tried several times to get it figured out, but either keep getting interrupted, or just plain bogged down. (There is always the possibility that it is incomplete, but it doesn't seem to be.) The original e-mail claimed that this was written by Einstein, and that 98% of all people would be unable to solve it. I doubt this. 2% would mean you need to be a true genius, and it seems to be a straight forward logic problem.

I assume the houses are in a straight row, which may be erroneous, but the clues won't make sense if I don't assume that. If you can solve it, I'd like to see the result (with chart.)

Kent Wright

Facts:

- 1: There are 5 houses in 5 different colors
- 2: In each house lives a person with a different nationality.
- 3: These 5 owners drink a certain beverage, smoke a certain brand of cigarette and keep a certain pet.
- 4: No owners have the same pet, smoke the same brand of cigar or drink the same drink.

Clues :

- 1: The Brit lives in a red house.
- 2: The Swede keeps dogs as pets.
- 3: The Dane drinks tea.
- 4: The green house is on the left of the white house.
- 5: The green house owner drinks coffee.
- 6: The person who smokes Pall Mall rears birds.
- 7: The owner of the yellow house smokes Dunhill.
- 8: The man living in the house right in the center drinks milk.
- 9: The Norwegian lives in the first house.
- 10: The man who smokes Blend lives next to the one who keeps cats.
- 11: The man who keeps horses lives next to the man who smokes Dunhill.
- 12: The owner who smokes Blue Master drinks beer.
- 13: The German smokes Prince.
- 14: The Norwegian lives next to the blue house.
- 15: The man who smokes Blend has a neighbor who drinks water.

The question is..... WHO KEEPS FISH?

NBP REPACKING EVALUATION FREEZES TV CHANNEL SWAPS

Below is the FCC public notice,

FCC PUBLIC NOTICE May 31, 2011

PETITION FILING FREEZE OF DIGITAL CHANNEL SUBSTITUTIONS, EFFECTIVE IMMEDIATELY

On May 30, 2008, the Media Bureau lifted its freeze on the filing of rulemaking petitions by licensed television stations requesting channel substitutions to the Post-Transition Table of DTV Allotments.¹ Since lifting this freeze, the Media Bureau has completed almost 100 channel substitution proceedings. Subsequent to the Media Bureau lifting its freeze, the National Broadband Plan was released. ² The Broadband Plan announced an effort to identify 500 megahertz of spectrum that can be reallocated from existing uses to enable the expansion of new mobile, fixed and unlicensed broadband service.³ To aid in this endeavor, the Broadband Plan recommended, among other things, that the Commission initiate a rulemaking proceeding to reallocate 120 megahertz from the broadcast television bands (channels 2 – 51), and also to consider methodologies for repacking full-power television channels to increase the efficiency of channel use.⁴ The Commission has now issued a Notice of Proposed Rulemaking as the first step in a series of actions towards achieving these goals.⁵ To permit the Commission to evaluate its reallocation and repacking proposals and their impact on the Post-Transition Table of DTV Allotments, the Media Bureau deems it appropriate to freeze the acceptance of additional rulemaking petitions to change channels at this time. Furthermore, the Media Bureau has been accepting channel substitution rulemaking petitions since May 30, 2008, and believes that those stations interested in changing channels have had sufficient time to evaluate engineering options and submit rulemaking petitions. The Media Bureau will continue its processing of rulemaking petitions that are already on file with the Office of the Secretary. For additional information or questions, please contact Kevin Harding (technical) or Joyce Bernstein (legal) of the Video Division, Media Bureau at (202) 418-1600.

The following partial excerpt is a response from TV Technology Magazine by Doug Lung on 6/2/201. The complete article can be viewed at <http://www.tvtechnology.com/article/121354>.

The FCC announced it was implementing a [freeze on the filing of petitions for digital channel substitutions](#). Many stations with VHF DTV channel assignments filed petitions to move to UHF channels after the previous freeze was lifted on May 30, 2008.

"To permit the Commission to evaluate its reallocation and repacking proposals and their impact on the Post-Transition Table of DTV Allotments," the FCC said in a notice, "the Media Bureau deems it appropriate to freeze the acceptance of additional rulemaking petitions to change channels at this time."

According to the commission, the freeze is the first in a "series of actions" aimed at achieving the National Broadband Plan (NBP) goal of reallocating 120 MHz from TV broadcasters and considering methodologies for repacking full-power TV channels "to increase efficiency of channel use."

While not mentioned in the FCC Public Notice, it's possible that one of the next steps could be a freeze on applications proposing any change in coverage area. After seeing how difficult it was to find both high-band VHF and/or UHF channels for DTV stations in some parts of the country after channels 52-69 were reallocated, it will be interesting to see how effective the FCC's repacking proposals are in these congested areas, and also what the impact will be on stations' interference free coverage.

DTV SET BREAKS \$35 PRICE BARRIER

The [New-egg.com](http://www.newegg.com) web site is advertizing "Haier" 7" portable TV sets (same as the Prizm sets many of us have) for only \$34.99. To put this in perspective, the first commercial transistor radio, Regency TR-1, sold for \$49.95 in 1954 which is about \$400 in today's dollars! However, it costs an extra \$11 for shipping and I hear they're now "out of stock" as they were "re-certified" sets that normally sold for \$79.95. Amazon now sells them for \$49.98 and free shipping!!!

Check it out at,

<http://www.newegg.com/Product/ProductList.aspx?Submit=ENE&DEPA=0&Order=BESTMATCH&Description=haier+tv&x=19&y=29>

...WA8RMC

WA8RMC MOVING DAY TOWER REMOVAL

Finally it's time to remove my tower in preparation to the upcoming move to a new house. I knew it would be a chore so I was not especially looking forward to it. Fortunately my son Dan decided he didn't want to see ME on the tower top removing antennas by myself so he volunteered his help! It's about 80 feet to the top so a younger person is better suited for the job. Thankfully he's not afraid of heights.



Here is an old picture of the tower and antennas before we started dismantling it.



The top antennas are now off with only my gin pole at the top.



That's not me at the top. My son volunteered to be the "top guy".



Finally the 48 element 439MHz collinear antenna is down but it didn't survive in one piece. No problem. It's 20 years old so it was to be trashed anyway.



OK, now I realize I had far too much coax on the tower. This is what it looks like all coiled up for "transport".

RED-WHITE-BOOM PUBLIC SERVICE

This year the annual Columbus, Ohio fireworks RWB were much better than previous years. They have always published that there were about 500,000 people in attendance which, in the past, left me in doubt. However, this year I believe them. There were certainly more people this year. Also, the fireworks were bigger, longer and louder! And we most certainly appreciated it as we had a front row seat!

We desperately need more helpers so if you can reserve time to help us next year, we'd love to have you. You get a great view of the fireworks and free food is available for us. We were understaffed but managed to get everything set up in time. The equipment worked flawlessly. Tom Taft, KA8ZNY, Bob Rector, W8RWR, and I operated the local cameras while John Chapman, WB8INY, observed and gave us directions from the Police Emergency Operations Center below. We had 2 cameras on the Columbia Gas Co. roof and one on the AEP building, both operated remotely. There were 3 local cameras on the Police building 12th floor mezzanine operated manually under computer control.



On the Gas Co. roof are positioned these two cameras. The one on the left points toward the new waterfront park and is fixed. The one on the right points toward the fireworks activity and is remotely controlled from Police HQ (green roof) in the center of the picture. The AEP building is the tall one to the left.



The antenna on the right is a loop yagi. It sends the 2398MHz video signal to the receiver on the Police building mezzanine. The equipment on the left is the DTMF decoder for touch tone control, a 449.995MHz handie talkie, Wavecom and amplifier for about ¼ watt @ 2398MHz.



These 3 cameras above are located on the Police HQ mezzanine looking down at the crowd. They are all locally pan-tilt-zoom controlled from the computer screen inside. The left one is directed roughly south toward the Broad street bridge. The center one views to the west mainly at the railroad bridge. The right one points north back toward Nationwide arena.



The antenna on the left receives the camera video from the AEP roof. The photo on the right shows our control station with 2 split screen monitors to view the data inside the mezzanine on the Police building 12th floor. To its right is the 1270MHz receivers for the AEP video and camera control.



The pictures on the left and right are general views of the crowd. The concentration increased significantly after the sun went down.



I like this photo! It shows the Columbus buildings looking east from our location. The parking garage roof is packed with people and you can see them lining the railings most of the way down.

The tall building on the left is the State Office Tower (Rhodes Tower) where our repeater is located. The antennas can be seen at the extreme upper left of the photo. See arrow.

...WA8RMC

DAYTON HAMVENTION FRIDAY NIGHT DINNER DETAILS

Well, here we are again at the Dayton Hamvention Friday Night ATV dinner. It's always kind of special to enjoy a good sit down dinner with Ham friends of similar interests to discuss the Hamvention adventures that day. We just sit down, relax, rest our feet and enjoy the moment.

The drive to Roush's Restaurant in Fairborn, Ohio (near the end of the Wright Patterson Air Force base north runway) is about a 10 mile drive from Hara Arena but easy to find. Once there, we can immediately order food independently so we can both eat and partake in the discussions about the day's bargains!

We had about 50 participants this year up from about 35 the year before. The formal discussions and presentations were moderated by Ron Coen, K3ZKO who guided us through them and handed out some door prizes. The pictures below are a sample of the good time had by all.

Please try to reserve time in your next years Dayton schedule to attend and enjoy these festivities. You won't regret it. We already have the same restaurant reserved. For those Columbus, Ohio Hamvention attendees, remember, it's located on the way home so you won't be going out of your way!



DAYTON HAMVENTION ATV FORUM

This year's ATV forum was packed full of a variety of ATV topics. I started out by introducing the presenters then quickly moved on to the presentations.



First up was Gordon West, WB6NOA, who never ceases to amaze us with his live demonstrations. I like him to go first because if there was anyone in the audience tired and sleepy from the day in the flea market, they would surely be awake and alert for the rest of the presentations. (Sorry Gordo, if I used you as a human alarm clock).



In the above photos, Gordo on the right shows Mike, WB6SVT, how his “anti-gravity’ tube works.

Next, Bill Brown, WB8ELK, and Mike Collis, WA6SVT, talked about their ATVQ Magazine progress. Even though they are slightly behind schedule, they are working hard to get caught up. They detailed some upcoming new articles and asked for input about future topics.

Next, Lou McFadden, W5DID was scheduled to talk about the NASA space station and OSCAR topics but due to a family medical emergency, he was unable to be with us. Instead I talked about the activities the best I could. I knew some of the details because I'm on the team working to put an ATV transmitter in the Space Station but he knows the material much better. We hope to have more details by Dayton time next year.

Next, Ken Konechy, W6HHC, discussed his “Digital ATV Basics” presentation via DVD since he was unable to make the trip from California. Much was learned from the discussion and slides with a complete handout of the entire presentation for the audience.

After that, Mike Collis, WA6SVT, talked about ATV repeater linking in southern California. They have a number of repeaters with mountains so it is a real challenge to accomplish this with as much reliability as they do.

Finally, Chris Oesterling, N8DUK, described an ATV equipped rocket launch project with the Boy Scouts. It's always entertaining and satisfying to see the Boy Scouts involved in this type of activity. That helps to promote the ATV hobby to the younger generation so they can carry on with the ATV hobby. In Chris' “spare time” he owns and operates Intuitive Circuits an electronics manufacturing business that offers many HAM related products including ATV controllers and video ID boards.

DAYTON HAMVENTION "ASTRONAUT"

While walking around Dayton this year, I happened upon a person in an astronaut suit with an ATV transmitter and I couldn't resist the urge to stop and question him about his unusual attire. He obliged and was even willing to promote the ATVQ Magazine by holding up a copy. He is Russ Hummel W4PGT, Quinton, VA rshummell@cox.net. The suit has a 427.25 MHz Videolynx transmitter with a 1/4 wave Halo antenna. Included is an Intuitive Circuits overlay with oxygen saturation sensor, CO₂ sensor, heart rate, respiration rate, plus five temperatures for both equipment and environment. It is a real NASA Apollo suit used for ground training.



Russ holds up a copy of ATVQ Magazine on the left.



To the right Mike, WA6SVT, signs him up for an ATVQ subscription.

Below they both "celebrate" a successful transaction.



ATCO SPRING EVENT

Again, as shown below, the ATCO members enjoyed a little time away from home and at the ABB cafeteria for our annual Spring Event last May. This year fewer than normal attended...I don't know why. Maybe it was because the Athens Hamfest was the same day but I don't think so. It rained hard and most that were going to go to that one didn't. There were about 25 people here, down from about 30 the year before. Maybe if the absentees knew I served pulled port sandwiches, we would have had more attendees. (Next year maybe I should publish a menu first!). Nevertheless, all present had a good time. There were plenty of door prizes to go around.



OK, look at these prizes guys! That alone should be enough of an incentive to attend future Events!
Let's hope we have a record attendance at the Fall Event.

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". 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

Issue	Page(s)	Article
Vol 1 II	5	439 Beam
Vol 2 I	4	439 Beam
Vol 2 II	8,9	439 Parabolic Ant
Vol 2 II	9	Video Modulator
Vol 2 III	7	1296 Ant 45 Ele loop yagi
Vol 2 III	10	RF Power Indicator (in-line) for 1296 MHZ
Vol 2 SE	2,3	Diode Multiplier for 23 CM
Vol 2 SE	4,5	1296 MHZ 10 Watt Solid State Linear Amp
Vol 4 I	3	RF/Video Line Sampler
Vol 4 II	3	P-Unit Meter
Vol 4 II	7,10,11	UHF Gated Noise Source
Vol 4 II	12	420 - 450 Broom Handle Rhombic Ant
Vol 4 III	4,8	25 Element 1.26 Loop Yagi
Vol 4 III	6	Video Modulator (Tube Type)
Vol 5 I	3	Video Modulator One Transistor
Vol 5 II	4,7	900 MHZ Yagi Ant
Vol 5 II	6	Video Modulator for 2C39 Final
Vol 5 III	3	440 MHZ Hidden Transmitter Finder
Vol 6 I	3	Video Line Amp
Vol 6 I	8	25 Ele 910 MHZ Loop Yagi
Vol 6 II	4,6,7	Microwave Oven ATV Xmitter
Vol 6 II	5	Matching a Quad Driven Ele
Vol 6 II	8	Power Divider for 33CM
Vol 9 III	5,7	16 Ele Loop Yagi for 439.25 MHZ
Vol 10		No Articles
Vol 11 II	4,5,6	439 48 Ele Collinear Ant
Vol 11 III	7	1280 MHZ Cavity Filter
Vol 12 I	6,7,8	439 & 1200 Horz Polarized Mobile Ant
Vol 12 II	5,6,7	ATV Line Sampler
Vol 12 II	10	439 & 1280 Interdigital Filter(s)
Vol 12 III	6,7,8	439 Cheap Attic Ant
Vol 13 I	9, 10	High Level Modulator for ATV
Vol 13 II	5	VGA to NTSC Converter for Computer
Vol 13 III	9, 10	AM Video Modulator
Vol 13 III	4	1200 MHZ Transistor Linear Amp
Vol 13 III	6	900 & 1200 MHZ Loop Yagis
Vol 14 III	8	439 31 Ele Yagi
Vol 14 III	12, 13	1250 MHZ FM ATV 3 Watt Xmitter
Vol 15 I	16	427.25 Horz J-Pole Ant
Vol 15 II	14	2400 MHZ Loop Yagi
Vol 15 III	8	Wavecom Modification
Vol 15 III	12,13,14	2.4 Gig Antenna's
Vol 16 II	20	2.4 Gig Helix Ant
Vol 16 III	4	1280 MHZ Loop Yagi
Vol 17 I	14, 15	Video Amp (Multi Output)
Vol 18		No Articles
Vol 19 III	4	Pwr Supply for 28 Volt Ant Relay
Vol 20 III	9, 10	Video Sampler

Vol 21 II	4	RF Pwr Amp for 900/1200 MHZ
Vol 21 II	14	10-14 Volt Doubler for 28 Volt Ant Relays
Vol 21 III	5	S-Video To Composite Adaptor
Vol 21 III	3,4	Video Noise Rejection Amp
Vol 21 III	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 III		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 III		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 III	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 III	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 III		No articles
Vol 28 I	11	Super 1280 MHZ amplifier
Vol 28 II		No articles
Vol 28 III		No articles

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 number shown in the PDF file. Some issues are missing. Art did not have a copy of every year. This list is complete through Volume 28 III.

...Bob N8OCQ

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.

WA6RCW Ed Mersich - Elizabeth, Colorado

WB4ATV Don Coy - Melborn, Florida

WB8CXO Mike Young - Munroe Falls, Ohio (I missed him from 2009, sorry Mike).

...WA8RMC

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.

07/31/2011 | [Portage Hamfair '11](#)

Location: Randolph, OH

Sponsor: Portage Amateur Radio Club

Website: <http://hamfair.com>

08/06/2011 | [Columbus Ohio Hamfest](#)

Location: Columbus, OH

Sponsor: Voice of Aladdin ARC (W8FEZ)

Website: <http://www.aladdinshrine.com/hamfest.htm>

08/07/2011 | [CFARC 3rd Annual TailgateFest](#)

Location: Stow, OH

Sponsor: Cuyahoga Falls Amateur Radio Club

Website: <http://www.cfarc.org/tailgate2011.html>

08/20/2011 | [Portsmouth Radio Club Hamfest](#)

Location: Friendship, OH

Sponsor: Portsmouth Radio Club

08/21/2011 | [55th Annual Warren ARA's 2011 Hamfest](#)

Location: Cortland, OH

Sponsor: Warren Amateur Radio Association

Website: http://groups.yahoo.com/group/WARA_HAMFEST

08/28/2011 | [Cambridge ARA Hamfest & Computer Show](#)

Location: Cambridge, OH

Sponsor: Cambridge Amateur Radio Association

Website: <http://www.w8vp.org>

09/11/2011 | [Great Lakes Division Convention \(Findlay Hamfest\)](#)

Location: Findlay, OH

Type: ARRL Convention

Sponsor: Findlay Radio Club

Website: <http://www.w8ft.org>

09/18/2011 | [GCARA Hamfest](#)

Location: Cincinnati, OH

Sponsor: Greater Cincinnati Amateur Radio Association

Website: <http://www.gcara.org>

09/25/2011 | [Cleveland Hamfest and Computer Show](#)

Location: Berea, OH

Sponsor: Hamfest Association of Cleveland

Website: <http://www.hac.org>

10/30/2011 | [Massillon Hamfest](#)

Location: Massillon, OH

Sponsor: Massillon Amateur Radio Club

Website: <http://www.w8np.org>

INTERNET ATV HOME PAGES (list verified 01/14/11)

Domestic homepages

http://www.atco.tv	Ohio, Columbus, homepage (ATCO)
http://www.w8bi.org/atv/atvresources.html	Ohio, Dayton ATV group (DARA)
http://www.citynight.com/atv	California, San Francisco ATV
http://atn-tv.org/ATN.htm	California, Amateur Television Network in Central / Southern
http://members.tripod.com/silatvg	Illinois, Southern, Amateur Television group
http://www.ussc.com/~uarc/utah_atv/id_atv1.html	Idaho ATV
www.bratsatv.org	Maryland, Baltimore Radio Amateur Television Soc. (BRATS)
www.qsl.net/k7atv/	Salem, Oregon Amateur Television Associations-Salem
http://www.qsl.net/kd2bd/atv.html	New Jersey, Brookdale ARC in Lincroft
http://www.ipass.net/~teara/menu3.html	North Carolina, Triangle Radio Club (TEARA)
http://www.oregonatv.org	Oregon, Portland OATVA Oregon Amateur TV Association
?	Pennsylvania, Pittsburg Amateur Television
http://members.bellatlantic.net/~theoikat/	Pennsylvania, Phila. Area ATV
?	Texas, Houston ATV (HATS)
http://www.hotarc.org/atv.html	Texas, WACO Amateur TV Society (WATS)
?	Utah ATV
www.qsl.net/ww7ats	Washington, Western Washington Television Soc. (WWATS)
http://www.shopstop.net/bats/	Wisconsin, Badgerland Amateur Television Society (BATS)

Foreign homepages

http://atv.hamradio.si	Slovenia ATV
http://www.batc.tv	British ATV club (BATC)
http://www.cq-tv.com	British ATV Club and CQ-TV Magazine
	Finland ATV, OH3TR repeater.
	German ATV

Misc other ATV related sites

http://www.atv-tv.org	The Amateur Television Directory
http://www.atn-tv.org	Amateur Television Network
http://www.atvquarterly.com	Amateur Television Quarterly Magazine
http://gb3lo.camstreams.com	"GB3LO" Repeater Camstream westoft, UK
http://www.ham-radio.com/sbms	"SBMS" San Bernardino Microwave Society
http://www.qsl.net/kc6ccc/	"METS" Microwave Experimenters Television System

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. 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 TREASURER'S REPORT - de N8NT

OPENING BALANCE (04/16/11).....	\$ 2083.96
RECEIPTS(dues).....	\$ 180.00
Donation	\$ 15.29
Spring Event food.....	\$(229.78)
Paypal fee.....	\$ (1.47)
CLOSING BALANCE (07/24/11).....	\$ 2048.00

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)
 TV Transmitters: 427.25 MHz AM mod, 1258 MHz FM mod, 1268 MHz QPSK digital, 2433 MHz FM mod, and 10.350 GHz FM mod.
 multipole filters in output line of all transmitters
 Output Power - 427.25 MHz: 50 watts average 100 watts sync tip
 1258 MHz: 40 watts continuous (Analog ATV)
 1268 MHz: 20 watts continuous (DVB-S digital ATV - 2 channels)
 2433 MHz: 15 watts continuous
 10.350 GHz: 1 watt continuous
 Link transmitter - 446.350 MHz: 5 watts NBFM 5 kHz audio
 Identification: 427, 1258, 1268, 2433, 10.350 GHz transmitters video identify every 30 min. with ATCO & WR8ATV on 6 different screens.
 1268 MHz & 10.35 GHz - 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
 1258 MHz - Diamond vertically polarized 12 dBd gain omni (Analog ATV)
 1268 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: 147.48 MHz - F1 audio input with touch tone control
 439.25 MHz - A5 video input with FM subcarrier audio (lower sideband)
 449.975 MHz - F1 audio input aux touch tone control. (An input here generates an output on 147.48 and 446.350).
 1280 MHz - F5 video input or DVB-S digital (digital input fed direct to 1268 MHz digital output channel 2)
 2398 MHz - F5 video input
 10.450 GHz - F5 video input (not installed yet)
 Receive antennas: 147.48 MHz - Vert. polar. Diamond 6dBd dual band (also used for 446.350 MHz link output)
 439.25 MHz - Horizontally polarized dual slot 7 dBd gain major lobe west
 1280 MHz - Diamond 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 (not installed yet)

Input control:	<u>Touch Tone</u>	<u>Result (if third digit is * function turns ON, if it is # function turns OFF)</u>
	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 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 for Ch. 1 Select 439.25 receiver
 00* then 2 for Ch. 2 Unused
 00* then 3 for Ch. 3 Select 1280 receiver
 00* then 4 for Ch. 4 Select 2398 receiver
 00* then 5 for Ch. 5 Select video ID (4 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 (not in use at this time)
03* or 03#	Channel 3 1280 MHz scan enable
04* or 04#	Channel 4 2398 MHz scan enable
A1* or A1#	Manual mode select of 439.25 receiver audio
A2* or A2#	Unused channel at this time
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#	C1* to disable 427 MHz transmitter, C1# to enable it
C2* or C2#	C2* to disable digital transmitter, C2# to enable it

ATCO MEMBERS AS OF July 2011

Call	Name	Address	City	St	Zip	Phone
KD8ACU	Robert Vieth	3180 North Star Rd	Upper Arlington	OH	43221	614-457-9511
KC3AM	Dave Stepnowski	735 W Birchtree Ln	Claymont	DE	19703	
AH2AR	Dave Pelaez	1348 Leaf Tree Lane	Vandalia	OH	45377	
W8ARE	Larry Meredith III	6070 Langton Circle	Westerville	OH	43082-8964	
KC8ASF	Tom Pallone	3437 Dresden St.	Columbus	OH	43224	614-268-4873
WB4ATV	Don Coy	489 Crystal Lake Drive	Melbourn	FL	32940	
KC8BTX	Dudley Field	357 N. Ridge Heights Dr	Howard	OH	43028	
W6CDR	Wynn Rollert	1141 Pursell Ave	Dayton	OH	45420	937-256-1772
WB8CJW	Dale Elshoff	8904 Winoak Pl	Powell	OH	43065	614-210-0551
N8COO	C Mark Cring	3941 Three Rivers Lane	Groveport	OH	43125	614-836-2521
N8CXI	Garry Cotter	2367 Northglen Drive	Columbus	OH	43224	
N9CX	Bill Erwin	231 Gateside Ct.	Gahanna	OH	43230	
WB8CXO	Mike Young	289 Gaylord Dr	Munroe Falls	OH	44262	
N3DC	William Thompson	6327 Kilmer St	Cheverly	MD	20785	
WA8DNI	John Busic	2700 Bixby Road	Groveport	OH	43125	614-491-8198
K8DMR	Ron Fredricks	8900 Stonepoint Ct	Jennison	MI	49428-8641	
K8DW	Dave Wagner	2045 Maginnis Rd	Oregon	OH	42616	419-691-1625
WB8DZW	Roger McEldowney	5420 Madison St	Hilliard	OH	43026	614-876-6033
KC8EVR	Lester Broadie	108 N Burgess	Columbus	OH	43204	
N8FRT	Tom Flanagan	1751 N Eastfield Dr.	Columbus	OH	43223	
W8FTX	George Biundo	3675 Inverary Drive	Columbus	OH	43228	614-274-7261
W8FZ	Fred Stutske	8737 Ashford Lane	Pickerington	OH	43147	
KB8GHW	Mike Amirault	5560 Refugee Rd.	Baltimore	OH	43105	614-859-7005
WA8HFK,KC8HIP	Frank & Pat Amore	3630 Dayspring Dr	Hilliard	OH	43026	614-777-4621
W4HTB	Henry Cantrell	905 Wrenwood Dr.	Bowling Green	KY	42103	270-781-9624
WG8I	Chris Vojsak Sr.	3536 W Henderson Rd	Columbus	OH	43220-2232	614-203-6000
WB2IIR	Michael Anthony	370 Georgia Drive	Brick	NJ	08723	
N8IJ	Dick Knowles	1799 Homeward Ave	Lima	OH	45805	
K8KDR,KC8NKB	Matt & Nancy Gilbert	5167 Drumcliff Ct.	Columbus	OH	43221-5207	614-771-7259
N9KNV	Edmund Janowski	1721 Minnesota Ave	South Milwaukee	WI	53172	
WA8KQQ	Dale Waymire		Greenville	OH	45331	937-548-2492
N8LRG	Phillip Humphries	3226 Deerpath Drive	Grove City	OH	43123	614-871-0751
KA8LWR	Mel Alberty	1645 Olentangy Road	Bucyrus	OH	44820	419-468-2971
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	
WOMNE	Mike Doty	4300 Winchester Southern Rd	Circleville	OH	43113	740-420-9060
N8NT	Bob Tournoux	3569 Oarlock Ct	Hilliard	OH	43026	614-876-2127
N0OBG	Jim Conley	33 Meadowbrook C C Est	Ballwin	MO	63011	
WU8O	Tom Walter	15704 St Rt 161 West	Plain City	OH	43064	614-733-0722
N8OCQ	Bob Hodge Sr.	3750 Dort Place	Columbus	OH	43227-2022	
KB8OFF	Jess Nicely	742 Carlisle Ave	Dayton	OH	45410	
KG4OPZ,KG4OQA	Dave,MaryHoltSchneider	7 Akal Court	Durham	NC	27713	
W6ORG,WB6YSS	Tom, Maryann O'Hara	2522 Paxson Lane	Arcadia	CA	91007-8537	626-447-4565
KE8PN	James Easley	1507 Michigan Ave	Columbus	OH	43201	614-421-1492
W8PU	Gary Poland	3347 S.R. 28	Midland	OH	45148	
KC8QJR	Adam Burley	1796 Queensbridge Drive	Columbus	OH	43235	614-886-2326
WA6RCW	Ed Mersich	34401 Columbine Trl W	Elizabeth	CO	80107-7866	
WA8RMC	Art Towslee	180 Fairdale Ave	Westerville	OH	43081	614-891-9273
W8RRF	Paul Zangmeister	10365 Salem Church Rd	Canal Winchester	OH	43110	
W8RRJ	John Hull	580 E. Walnut St.	Westerville	OH	43081	614-882-6527
W8RUT,N8KCB	Ken & Chris Morris	2895 Sunbury Rd	Galena	OH	43021	
W8RVH	Richard Goode	9391 Ballentine Rd	New Carlisle	OH	45334	937-964-1185
W8RQI	Ray Zeh	2263 Heysler Rd	Toledo	OH	43617	
KB8RVI	David Jenkins	1941 Red Forest Lane	Galloway	OH	43119	614-878-0575
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
W8SJQ	Rocky Eramo	795 Riverbend Ave	Powell	OH	43065	614-207-2740
W8SJV, KA8LTG	John & Linda Beal	5001 State Rt. 37 East	Delaware	OH	43015	740-369-5856
KB8SSH	Mike Cotts	3424 Homecroft Dr	Columbus	OH	43224	614-371-7380
W3SST	John Shaffer	6706 Gilette Dr	Reynoldsburg	OH	43068	614-751-0029
WA6SVT	Mike Collis	PO Box 1594	Crestline	CA	92325	
W8TIP	Gene Hawkins	1720 Liberty Street	Toledo	OH	43605	
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	
KB8WBK	David Hunter	45 Sheppard Dr	Pataskala	OH	43062	740-927-3883
KC8WRI	Tom Bloomer	PO Box 595	Grove City	OH	43123	
AA8XA	Stan Diggs	2825 Southridge Dr	Columbus	OH	43224-3011	
N8XYJ	Dan Baughman	4269 Hanging Rock Ct.	Gahanna	OH	43230	
KB8YMQ	Jay Caldwell	4740 Timmons Dr	Plain City	OH	43064	
KC8YPD	Joe Ebright	3497 Ontario St	Columbus	OH	43224	
N8YZ	DaveTkach	2063 Torchwood Loop S	Columbus	OH	43229	614-882-0771
N8ZM	Tom Holmes	1055 Wilderness Bluff	Tipp City	OH	45371	

Call	Name	Address	City	St	Zip	Phone
K3ZKO	Ron Cohen	915 Rowland Ave	Cheltenham	PA	19012	215-828-1263
KA8ZNY,N8OOY	Tom & Cheryl Taft	386 Cherry Street	Groveport	OH	43125	614-202-9042

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. 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 so we can keep the dues clock consistent with the beginning of each year.

ATCO CLUB OFFICERS

President: Art Towslee WA8RMC	Repeater trustees: Art Towslee WA8RMC
V. President: Ken Morris W8RUT	Ken Morris W8RUT
Treasurer: Bob Tournoux N8NT	Dale Elshoff WB8CJW
Secretary: Frank Amore WA8HFK	Statutory agent: Frank Amore WA8HFK
Corporate trustees: Same as officers	Newsletter editor: Art Towslee WA8RMC

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

FIRST CLASS MAIL

**REMEMBER...CLUB DUES ARE NEEDED.
CHECK THE
MEMBERS PAGE OF ATCO WEBSITE FOR THE EXPIRATION DATE.
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