ATCO NEWSLETTER

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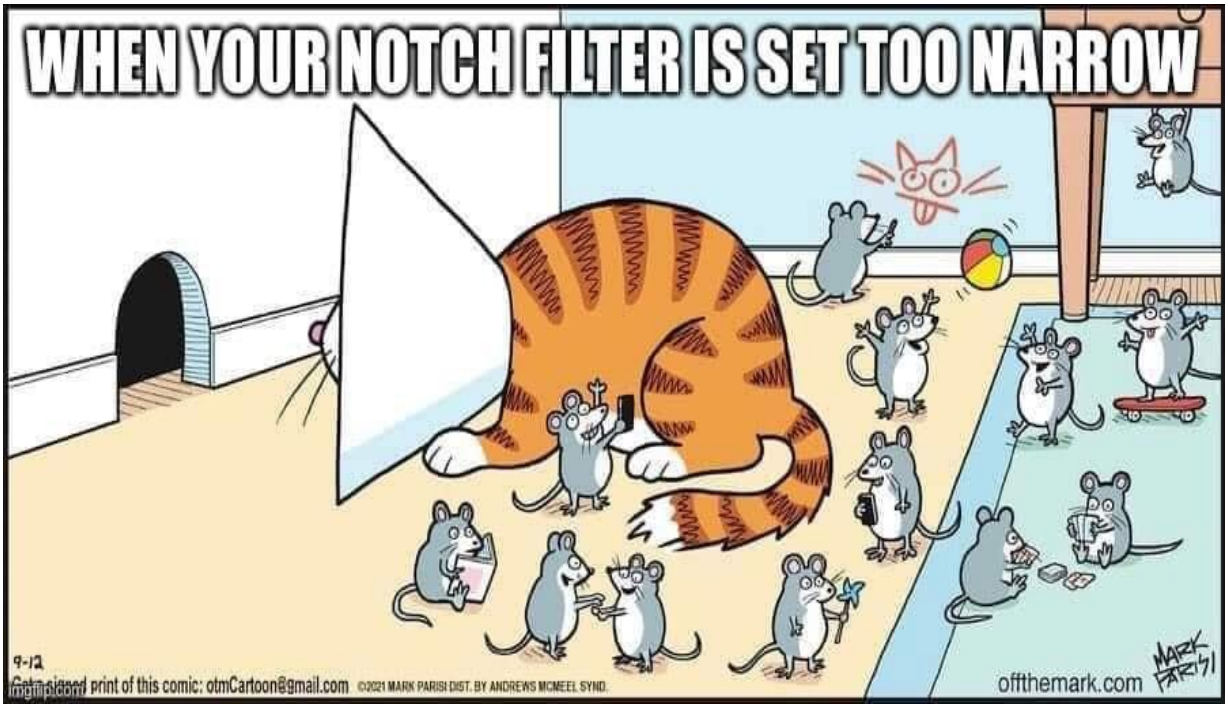
The ATCO newsletter is the official publication of a group of amateur television operators known as "AMATEUR TELEVISION IN CENTRAL OHIO Group Inc" published quarterly (January, April, July, October)

ATCO SPOTLIGHT TOPICS



ACTIVITIES ... from my Workbench

Well, another year, another corona virus. I hate to be redundant but I expected this to be over by now. I don't want to get into a long political or medical debate over this so I'll only say, "Please get vaccinated so we don't infect others!" That applies to everyone else because I'm assuming everyone reading this has done the right thing. Enough said so I'll get off my soap box on that. Right now, I'm waiting for a good time to resume pizza parties and Spring/Fall Events. It's been 2 full years since we got together on that one. On a similar note, the Xenia Hamvention is ON. I plan to attend as I've got a rather long list! So now, on to other topics.

Sadly, there's not much to report on the "workbench" front this time. Let's see, no news about the repeater and my VersaTune DATV receiver design is on hold with supply chain issues. Talking about the supply chain, I need a linear voltage regulator for it from Texas Instruments that is not available now but due for production in November this year. I have had a request to inform me when it becomes available and voila, I got an Email from them yesterday to say they are now available. I rushed to the computer, gathered my records and proceeded to the web site only to find that they are now again out of stock. DAMN, Missed! Looks like someone else beat me to it. To try and prevent a re-occurrence, I decided to contact customer support and ask if the next time they could hold 50 pieces for me and Email that they are available so I can order. It may not work but I wouldn't know if I didn't try. We'll see.

Since I don't want to engage in any "new" projects right now, I decided it's time to clean house in the "hamshack". I tore apart a few old electronic units that I'll never use and separate the recyclables. I now have a pile of aluminum to take to the scrap yard. That felt good but I'm sure I will need one of those items soon. Oh well…Next to the coils of wire and cable laying around. The copper in them is re-cyclable but if I don't strip it out, it's not worth it so into the dumpster it goes. Great, now we're getting somewhere! I then started to check the items I had on shelves. After removing some of them and setting them aside for the dumpster, I had second thoughts so I put them back, but not in the same locations. I'm playing mind games here but now it gives me the feeling that I've thrown them away because it looks different. OK, whatever it takes to tidy things up a bit. Sound familiar????

OK, on to ATCO records that have been neglected for the last couple of years. (Covid excuse) I see there are a number of people that have lapsed ATCO memberships. I notice that if I don't send out constant reminders, we tend to forget. However, I don't want to piss you off either so there is a delicate balance here. That points out a deficiency in our membership dues reminder notices. About one month before your membership expires, we send out weekly computer-generated expiration notices. Good so far. However, if you don't pay dues by the expiration time, we stop sending you notices. Well, good for you but bad for us. I then have to send out a manual expiration notice to remind you again. I did that recently and got a number of positive responses with dues payments so hurray for ATCO! A few said they were no longer interested and a few more didn't respond at all. I don't like to see that!

Well, that's about it from here. Let me know if you think it's safe to have a pizza party or a Spring Event this year.
73.
…WA8RMC

FIRE STORM DESTROYS 991 HOMES IN BOULDER COUNTY, COLORADO

Reprinted by permission from the ATV Repeaters Repeater Newsletter by Jim Andrews KH6HTV

View of Jim KH6HTV QTH during the night of Dec 30. His tower is visible in the center.

On Thursday, December 30th, Boulder County was attacked by a severe windstorm with winds exceeding 100mph. A grass fire started near the base of the mountains in Marshall. The winds rapidly created an extraordinary firestorm. It was too big and fierce for firemen to battle. The only battle was evacuation as the towns of Louisville and Superior and northern suburbs of Denver lay in the wind driven path. The only thing that contained the fire was the winds finally stopping during Thursday evening. By that time hundreds of homes had burned down. This was not a typical forest fire, but an urban firestorm.

On Saturday, January 1st, Sheriff Joe Pelle announced that a total of 991 homes had been lost, 553 in the town of Louisville and 332 in Superior. Plus 106 more in un-incorporated Boulder County. Most of those 106 homes were in my own neighborhood. The above photo is of my own home burning down. The Thursday evening photo was taken by my son-in-law, Mike. He really should not have been there as the extremely intense wind driven heat waves could have easily killed him. Early the next morning, I walked into the area to check on our home. The second photo is all I found remaining. Our daughter, Susan, Mike and grand-daughter Alexa lived next to us and their home was also destroyed. All of our close neighbor friends lost their homes also. They included Boulder ATVers, Roger, N0IHX, and Naomi, KD0PDZ. We had no official warning of the coming firestorm. My only warning was from our daughter who saw it happening. We evacuated saving only ourselves, our bulldog Ruby, 2 laptops and our 2 cars. Lost everything else.

View of the remains of KH6HTV home on Friday morning on Dec 31.

Surprisingly Sheriff Pelle said there were no deaths. If this had occurred during the middle of the night, I am sure there would have been many deaths.

So, what is the ATV impact? Well for one, KH6HTV Video as a supplier of ATV gear will be out of operation for a very long time to come. I have already had to turn down a couple of orders. I will try to continue, as time permits, this ATV newsletter. But it might come out less often in the future.

… Jim, KH6HTV, Boulder, Colorado BATVC web site: www.KH6HTV.com

BCARES Board of Directors Chairman and Region 1, District 3 Emergency Coordinator Allen Bishop, K0ARK, said that a request from the Boulder Office of Emergency Management (OEM) to activate the emergency operations center (EOC) is what initiated the ARES activation. "At that time, staffing was initiated with the activation of the BCARES Radio Network, with three BCARES members assigned to the EOC," Bishop said. The BCARES Net was promptly activated.

ARES volunteers supported communication at evacuation sites and established emergency communication as commercial power failures and preventive shutdowns by utilities caused a loss of commercial communication. "Within about 8 hours," Bishop said, "battery back-up systems for cell phones and landlines failed, and 911 services went down."

"To facilitate a restoration of these emergency services, BCARES activated the Mountain Emergency Radio Network (MERN)," Bishop said. Established in 2010, MERN consists of repeaters installed at fire stations in Gold Hill and Allenspark, at community centers in Nederland and Raymond, and the privately owned Airlink Repeater. "These repeaters provided the emergency communication links that facilitated the restoration of 911 communications back to the dispatch center for the duration of the power outages," Bishop explained. The Allenspark Neighbors Emergency Network (ANEN) and Airlink (Alternate Access Radio Network) participated.

According to Bishop, as the Marshall Fire expanded, evacuation center support was requested at three locations to provide on-site situation reports using Winlink. Bishop said BCARES members and mutual-aid ARES operators from neighboring Districts established local communication with the BCARES EOC radio position from designated field locations. BCARES was activated for 2 days. One person died as a result of the fire.
…from ARRL Letter. January 20 2022

SENATOR BLUMENTHAL SUPPORTS AMATEUR RADIO

From ARRL Headquarters Newington CT December 7, 2021

To all radio amateurs,
Senator Richard Blumenthal (CT) received an affirmative reply from FCC Chairwoman Jessica Rosenworcel when he asked her to commit to providing his office "an update on the steps that the FCC is taking to support amateur radio operators." The Senator posed the written question as part of Rosenworcel's renomination hearing conducted by the Senate Commerce, Science, and Transportation Committee.

Blumenthal took note specifically that "Radio amateurs voluntarily provide an array of public services, especially emergency and disaster-related support communications when infrastructure has been destroyed by a hurricane or similar disaster. Their contributions in this area are regularly recognized by local and state authorities."

"ARRL is grateful to Senator Blumenthal for his support and recognition of radio amateurs," said ARRL President Rick Roderick, K5UR. Blumenthal has previously co-sponsored legislation supporting amateur radio, and his staff was recently briefed by ARRL on pending amateur radio matters at the FCC. Roderick added, "We need the partnership of the FCC and Congress to ensure our rules and spectrum continue to support the march of technological innovation in our vibrant Amateur Radio Service."

Multiple proceedings to update or change the FCC's amateur Part 97 rules to account for changes in technology and operating practices have been languishing at the FCC, some going back five or more years. ARRL is hopeful that these will be addressed soon.

SMALLEST MOON LANDER TO PUT HAM TRANSMITTER ON MOON

Japan's OMOTENASHI, the world's smallest moon lander, will have an X-band and UHF communication system, although it will not carry an amateur band transponder. OMOTENASHI is a 6U CubeSat set for launch via a NASA SLS rocket as early as February 2022. It will have a mission period of from 4 to 5 days. The name is an acronym for Outstanding Moon Exploration Technologies demonstrated by Nano Semi-Hard Impactor.

Wataru Torii of the Japan Aerospace Exploration Agency (JAXA) Ham Radio Club, JQ1ZVI, said radio amateurs can play a role in gathering data from the spacecraft. The spacecraft is made up of two separable components, both having independent communication systems -- an orbiting module and a surface probe. The orbiting module will take the surface probe to the moon. It will transmit beacon or digital telemetry data on UHF (437.31 MHz). The surface probe -- the moon lander -- will transmit digital telemetry or three-axis acceleration analog-wave with FM modulation on UHF (437.41 MHz).

Transmitter power will be 1 W in both cases. "If we succeed in receiving the UHF signal from the surface probe, we could know the acceleration data on the impact on the moon and the success of the landing sequence," Torii explained. "We already have a station for uplink and downlink at Wakayama in Japan -- used as an EME [moonbounce] station. However, if the satellite is invisible from Japan, we cannot receive the downlink signal. So, we need a lot of help from ham radio stations worldwide." The orbiting module beacon will transmit on 437.31 MHz using PSK31. The surface probe beacon will transmit on 437.41 MHz using FM, PSK31, and PCM-PSK/PM. Contact Torii for more information.

SAN DIEGO, CALIFORNIA DATV UPDATE

Greetings --- Just an FYI only, our progress report on the installation of one of the new, *ILO512PA* first unit installations for the upgrade projects for 2022. Four team members and I went to the San Diego site in downtown San Diego to install the new THOR {modified} modulator and one of the new power amplifiers onto the rack mount. Also completed the network link up configuration to the NSM - Network Systems Management Console. Also linked to our MESH backbone. ATSC {Ham TV} channel modifications for two channel slots are ongoing on channel slots 14 and 16. We have not voted yet on what two UHF channels to use yet. The Romona site is on private land so we will coordinate with our property agent that we will be on site late January - early February 2022. We plan to install new hardline, PA and the other THOR modulator. Plus place the MESH antenna another 10' higher on the tower. We have two ATSC, UHF channels now working on the bench using 6 MHz BW, 8VSB on 423.25 MHz and 436.25 MHz using modified THOR modulators.

…73 de Mario, KD6ILO, Oceanside, California

UNCERTAIN FUTURE OF HAM RADIO (Response to my article from 10/20)

From Michelle Thompson W5NYV to SDMC (sdmicrowave sdmicrowave@googlegroups.com) responding to the first article of the Uncertain Future of Ham Radio I published in ATCO Newsletter October 2020.

Re: The Uncertain Future of Ham Radio.
Well said!
We're working on a series of presentations over at RATPAC about the Past, Presence, and Future of amateur radio, and I have to say, we came to essentially the same conclusion. Amateur radio is so broad and it is SO delightfully unorganized and so successful. If you don't know about RATPAC, then our presentations are here: https://www.youtube.com/c/RATPAC

It's a real golden age for ham radio in so many ways, with a huge amount of self-organized interdisciplinary groups out there doing really remarkably cool things. I'll be presenting about ~8 technical projects for my part of the series of talks, and none of them are projects anyone at RATPAC had heard about before. I found them by spending time talking to people at the edge of my network.

One of the most important things about successful ham groups like these, and ours here at SDMG, is the practice of mutual aid. This is something that I think is essential. Without it, if you start giving aid as a transactional or power-relationship thing, it spoils the entire group or organization really, really fast. It becomes authoritarian and opaque and it's all about process and procedures over individuals and interactions. And people like me simply leave.

I did find the article really good - but tone deaf in a couple of ways. It's all men interviewed, and for all the yapping about youth only one youth was interviewed, and the answer felt like it was him agreeing with the interviewer who wanted him to confirm that *emergency communications* were of great interest to youth because she heard it from everyone else. I didn't pick up on anything that seemed like it was really in his voice. I don't think he got a good interview here.

Almost every single man in the article said emcomm appealed to youth and was the way to I guess get more 'utes. Ok...
Emergency communications is done in the US almost exclusively by credentialed and trained adults, and yes hams, who join formal organizations and train up in ICS etc. If you don't have a badge and lanyard, you are not going to be given the dispatch microphone. You know how they used to say No Lids, No Kids, No Space Cadets? That's emergency communications culture on steroids.

Kids are not involved here. Even CERT requires you to be 18.

So... they don't really ever say how this #1 youth appeal thing is supposed to actually be done by youth, or whether kids are going to actually wait until they're adults to then... what? Join Red Cross Communicators? And commit to all that time? EmComm is increasingly done with commercial or proprietary communications, too - this is a big deal.

One of the projects in my 501(c)(3) was open-source aggregator/uplink gear, to compete with the Motorola offering (which starts at $110,000!) that would ship all the mobile/portable traffic, ham radio or otherwise, from a local area, up to a satellite, and then to the entire united states for monitoring. Return channel is defined and provided by the served agency. FEMA loved it, ARRL loved it... and we could not get funding from anyone. We tried very hard, and had good folks on this team. FEMA had $0 budgeted for this but frantically iterated support for two solid years, ARRL offered $3k and that's still on the table today, ARDC rejected it out of hand, Gates, IEEE, and Sloan gave excellent feedback but didn't want to 1) do emcomm or 2) compete against in some cases a sponsor and so we moved on to other things. None of us were paid to do this, although we did get repeated poaching offers from Motorola! Maybe I should have taken it, it was a great offer. But I am not moving from San Diego.

I'm going to talk about this experience as part of the series at RATPAC because emergency communications are in the

justification for our licenses, and we better pay attention to it, and I took some swings at it in places and it was quite the swoop through all sorts of work.

Anyway, there's that talk and a lot more. At least one of the "Future of Ham Radio" talks will critique this IEEE article. One of the members of RATPAC planning team is Sterling, mentioned in the article. I've been working with him on demographic analysis of the FCC license database, and we'll probably do a talk about that too. So far, from what I'm doing with a machine learning algorithm, there's no change since 2005 in the number of women with individual licenses. 2005, 15%. Today, very rough initial results, 14.4%.

From these initial results, it may have actually declined from 14.4%, which would match the trends across tech. The high-water mark for women in computer science, for example, was the mid-1980s. It's been in steep decline since then. There's been like 1500 studies. The reasons are not a secret, it's well defined, and we know the basics on how to fix it. Anyone that's ever glanced at model thinking, and noticed how just a slight bias can make for dramatically segregated communities in terms of race and real estate, can figure it out. It doesn't take a lot of sexist nasty crap and you go from 50% women to 5%. Or 0%.

The specific reason I think it's worse than 14.4% is because of the large number of names the name classifier has put into "unknown". Looking at them, it's a lot more men than women. It's not enough to move 14.4%, and it might move it down. Racial demographics are next, and we have a method to try and get an estimate there. Age is something Sterling might tackle. He's really interested in this.

There's never been anything other than single-digit women FPGA and ASIC design, and telecommunications service delivery, which is what I do for a living. At least, in Information Theory, where I spend a lot of time and have a master's in, the community is healthy, diverse, and super fun. What a joy to be part of. Without the experience of being part of this particular technical community, it's likely I would have quit engineering without regret by 2000.

I am baffled by people that think ham radio lacks youth involvement. I see a lot of it going on, and help out all sorts of young people that want to do radio. Targeting a specific "type" of people, e.g., "UTES!" is an automatic lose. They don't want to join a legacy radio club, which are most commonly designed and enforced as ham radio social gathering for older white well-off men.

There is absolutely nothing wrong with ham radio social gatherings for older white well-off men. Obviously, I enjoy at least two of them, the vast majority of the time. I wouldn't bother to attend if I didn't. SDMG enforces some basic community standards. That is the only thing that matters. It has what is more formally called a code of conduct. We got the spirit of that. It's a non-negotiable thing if you want underrepresented people to show up. Groups that flatly refuse to have one or act like it's an imposition are waving a bright red flag.
…Michelle W5NYV

Here's someone else to weigh in:
Oct 23, 2021 at 8:22 AM Carl Ferree <c_ferree@cox.net> wrote:
Various pundits have been forecasting the demise of Ham Radio as far back as I can remember. There was the CB craze, Computers, Video Games, no-code licenses, etc. etc. As long as there are people who like to experiment with RF there will be some form of Amateur Radio. I notice that the Commercial interests are more covetous of our UHF and Microwave allocations than the HF spectrum. That seems to have been largely left to Right-wing conspiracy nuts like Alex Jones and religious prophets of Doom. Let us just keep on experimenting and building and having fun with our hobby.
…WA6PPG

NEW TECHNICIAN QUESTION POOL RELEASED

From ARRL Headquarters Newington CT January 6, 2022
To all radio amateurs,

New Technician Question Pool Released, Effective July 1,2022. The National Conference of Volunteer Examiner Coordinators (NCVEC) Question Pool Committee (QPC) has released the 2022 – 2026 Technician Class FCC Element 2 NCVEC Question Pool Syllabus & Question Pool into the public domain. It's available as a Word document or PDF. The three graphics required for the new Technician question pool are available within the documents, or separately as PDF or JPG files.

The new pool incorporates some significant changes compared to the 2018 - 2022 pool. Its 257 questions were modified slightly to improve wording or to replace distractors; 51 new questions were generated, and 62 questions were eliminated. This resulted in a reduction of 11 questions, bringing the total number of questions in the pool from 423 to 412. The difficulty level of the questions is now more balanced, and the techniques and practices addressed have been updated.

The new 2022 - 2026 question pool is effective July 1, 2022 – June 30, 2026, and must be used for Technician-class license exams administered on or after July 1, 2022.

AMATEUR OPERATION IN 3.45 - 3.5 GHZ MUST CEASE

From ARRL Headquarters Newington CT January 19, 2022

The FCC has established April 14, 2022, as the date by which amateur radio transmissions must stop in the upper 3.45 - 3.5 GHz segment of the amateur secondary 9-centimeter band. Secondary operations are permitted to continue indefinitely in the remainder of the band, 3.3 - 3.45 GHz, pending future FCC proceedings.

On January 14 the FCC released DA 22-39, which announces the results of Auction 110 for the 3.45 - 3.55 GHz band. Release of this notice triggered FCC rules adopted last year requiring that amateur radio operations between 3.45 GHz and 3.5 GHz cease within 90 days of the public notice.

DA 22-39 can be found online at:
https://www.fcc.gov/document/fcc-announces-winning-bidders-345-ghz-service-auction/attachment-a

In October 2021, ARRL President Rick Roderick, K5UR, urged Congress to direct the FCC to preserve Amateur Radio's secondary use of the 3 GHz band in a written statement responding to H.R. 5378, the Spectrum Innovation Act of 2021, before the US House Commerce Communications and Technology Subcommittee.

A chronology of actions responding to amateur access on the 3.5 GHz band can be found on the ARRL website at, http://www.arrl.org/3-ghz-band .

CHINA EXPANDING SOUTH CHINA SEA ANTENNA FARMS

A December 17 commentary from the Center for Strategic and International Studies (CSIS) has concluded that over the past year China has taken "major steps" to upgrade its capability to wage electronic warfare near the South China Sea." CSIS cites satellite images of massive antenna complexes to back its claim. Some facilities have already been suspected of jamming the communication facilities of US military aircraft operating in the region.

"The Chinese military is taking major steps toward improving its electronic warfare, communications, and intelligence-gathering capabilities near the South China Sea," said the commentary by Matthew P. Funaiole, Joseph S. Bermudez Jr., and Brian Hart, all associated with CSIS. "Recent satellite imagery reveals that China has rapidly expanded facilities near Mumian, on Hainan Island, providing the People's Liberation Army (PLA) with greater ability to track and counter foreign military forces operating in the region and in outer space."

The commentary said, "Many assets in the vicinity appear dedicated to gathering communications intelligence, a subset of [signals intelligence] that includes the collection of communications between individuals and organizations."

Some of China's land claims in the South China Sea include rare DXCC entities. Scarborough Reef (Panatag Shoal) is one. Conflicting land claims exist for other islands, especially in the Spratlys. Further complicating the situation is a 2016 ruling from the Permanent Court of Arbitration in the Hague that discounted China's claims with respect to Scarborough Reef and the Spratlys. The Court ruled in favor of the Philippines in a dispute with China over Scarborough Reef.

In April 2015, a Chinese naval vessel "harassed a Philippine Air Force patrol flight in the Spratlys," according to one news account, by firing an illumination round. The incident postponed a Philippine Navy flight that was to evacuate an ailing participant of the DX0P Spratly Islands DXpedition. A private aircraft carrying a BBC reporter received radio warnings from the Chinese Navy to stay away from the South China Sea reefs and islands that China claims, strongly suggesting that China has expanded its sphere of influence to include the entire region.

This and the more recent artificial island-building in the South China Sea cloud the possibility of future DXpedition to rare DXCC entities in the South China Sea, whether or not China has laid specific claim. The Spratlys are claimed in whole or in part by China, the Philippines, Vietnam, and other countries, and the Philippines government had issued the DX0P call sign. An international amateur radio team postponed a December 2017 DXpedition to the Spratly Islands operating under Malaysian call sign 9M0W, although the DXpedition did take place the following year. The planned 2012 DX0DX DXpedition to the Spratlys was canceled altogether without explanation after being pushed back at least twice. The last operation from Scarborough Reef was in 2007.

ATSC 3.0 VIDEO FORMAT – Pros and Cons

What's this ATSC Buzz that's been going around lately??? It's the discussion about the new USA TV standard that's being presently launched. Now, let's not get into the specifics of the standard and rollout progress right now but only look at what impact it could have for the ham DATV community.

First, ATSC 1.0 is the present USA TV consumer broadcast standard. It is used for consumer television broadcast to virtually all television sets in the USA, Canada, Mexico, S. Korea and India among a few others. The modulation is a vestigial sideband 8VSB 6MHz signal. It was a good method in its day but needs a significant revision to allow multiple carriers and enable motion reception. Its multipath rejection is poor and not designed for reception in a moving vehicle.

Now, ATSC 3.0 is presently being introduced. (ATSC 2.0 was scrapped and never introduced) This signal is a CODFM signal very similar to DVB-T2 but much more complex and with more capability including 4K (Next Gen) video. It too is a 6MHz bandwidth signal that cannot be narrowed. However, it can carry multiple signals at once and compact them into a more efficient signal. The multipath rejection also is improved so now reception in a moving vehicle is possible. Broadcasters like this because of the signal coverage area improvement, transmit power can be reduced saving electricity costs.

OK, so what does that mean for us? Well frankly, "Basically nothing" at this time. But wait! Hams are supposed to innovate and explore frontiers of new technology so it very well may be important to look into because you never know what may be discovered. Additionally, it can be investigated just because **we can.** "Bragging rights" may sneak into the picture too. So, why not? Here are some main Pros and Cons. Then, you decide.

- Maybe, just maybe we can find a way to reduce the bandwidth without sacrificing features. Then a signal centered at about 423MHz could co-exist with others if there was some frequency juggling. For instance, our ATCO DVB-T signal presently on 423 would have to be either moved or replaced.
- The range can be improved for a given power. Experiments would need to verify if better than DVB-T.
- Motion reception is improved. Again, experiments are needed to see if it's better than DVB-T.
- Multiple signal capability allows us to have more multiple conversations on one transmitter signal.

- Present cost is prohibitive. Commercial modulators are $3000 up and complex enough to limit one's ability to roll their own.
- Ham band receivers are non-existent. You would need an ATSC 3.0 receiver with a custom up-converter.
- A standard TV set cannot receive ATSC 3.0 at this time and cannot tune the ham band frequencies.
- Transmission in the 70cm band (420-450MHz) is not practical because of the 6MHz bandwidth requirement.
- The ATSC 3.0 picture resolution goes from HD (2K) to Super HD (4K) but very few, if any TV sets now can receive 4K (Next Gen) pictures. ATSC 1.0 cannot transmit a 4K picture.
- Wide bandwidth 70cm signals will obviously disturb those who coordinate these frequencies. Tread carefully!

So, where does that leave us? Mario, KD6ILO in southern California is presently experimenting with ATSC 3.0 and would like to set up an experimental station on 475 MHz as a low power station. FCC approval to do this is pending. Mario has the experience and capability because he is involved in this technology professionally and presently has the modulators to work with. "Hurray, Mario. Keep up the good work". As for the rest of us, for the time being, let's sit back and see what Mario uncovers as this technology is too new and costly for most of us to invest in at this time. (My opinion). If anyone else would like to perform similar experiments, I suggest you work directly with Mario and keep the rest of us informed. We will jump in at an appropriate time.
…WA8RMC

IS THERE ANYONE OUT THERE WITH ATV Tx/Rx ANYMORE?

I talked to Dave, NR8TV the other day who asked if there is anyone around to transmit and receive ham ATV. He had a P5 picture into the ATCO repeater from Greenville, Ohio (50 miles). I said we are all on ZOOM right now. That's sad and I agree but you go where the activity is! What can we do to change it? Will that happen when COVID-19 goes away? He responds with the message below. WA8RMC

Art,
I love amateur television but agree that it's going by the wayside. Is there any way to incorporate sending video and continuing the zoom thing? What about just like Eco link…linking atv repeaters worldwide? Everyone would be using their gear and checking into your net. This would be way beyond the zoom chat room, plus we can still use antennas, transmitters and amplifiers. If anything, you could push everyone to stay after the net to work ATV. Trying each other direct. This is what amateur television is to me. I was amazed that Rueben didn't even have any gear on. This does not promote ATV. I'll help any way I can to generate some energy. I think I'll email some guys and start some skits on Saturday morning. Jay might be my first contact. It might take off from there. I would like to get back into the swing. If you have any other ideas, let me know.
…Take care, Dave

Dave,
I can't agree with you more. I don't like Zoom but it's the only way we can get participation at this time. It's not Ham TV but it seems like a good way to get new people involved because it only takes a computer and camera. It made me feel good the other day when someone on Zoom was showing how he built his own Ham TV transmitter to someone that didn't know how to do that. It was a good introduction back to ATV!
Art.

So, how about it guys? Both 147.48 and 70cm ATV are dead right now. Let's at least check in on one or both bands more often. Let's hear and see more activity.
Art.

USA ATV REPEATER DIRECTORY June 2021

NOTES:

1. All repeaters are NTSC, VUSB-TV, 6 MHz channel, unless otherwise noted. Some repeaters are using non-standard, lower sideband instead of upper sideband. The frequency listed is the video carrier frequency.
2. Digital TV lists center frequency. 6 MHz channel, unless otherwise noted. dt = DVB-T, ds = DVB-S, da = ATSC
3. For full details, go to the listed web site, or send an e-mail to the contact person
4. Some ATV groups also post repeater info on www.qrz.com under their call sign

Location	Call Sign	Output	Input(s)	Modes	Web Site & Contact for info
ARIZONA					note: AZ is linked to W6ATN in S. CA & NV www.atn-tv.org
Phoenix, White Tank	W7ATN	1253.25	434.0, 434 / 2 dt 2441.5 fm	VUSB, FM DVB-T	wb9kmo@gmail.com kwjacob@icsaero.com
Mesa	W7ATN	1289.25	434.0, 434 / 2 dt 2441.5 fm	VUSB, FM DVB-T	wb9kmo@gmail.com kwjacob@icsaero.com
Tucson, Mt. Lemmon	W7ATN	1277.25	434.0, 434 / 2 dt 2441.5 fm	VUSB, FM DVB-T	wb9kmo@gmail.com kwjacob@icsaero.com
N.E. AZ & NM Green's Peak	W7ATN	1289.25	434.0	VUSB	wb9kmo@gmail.com kwjacob@icsaero.com
CALIFORNIA					W6ATN rptrs linked to AZ & NV
Orange Santiago Peak	W6ATN	1253.25 5910 fm	434.0, 434 / 2 dt 2441.5 fm	VUSB, FM DVB-T	www.atn-tv.org wa6svt@gmail.com
Los Angeles, central Mt. Wilson	W6ATN	1265.25	434.0, 434 / 2 dt 2441.5 fm	VUSB, FM DVB-T	www.atn-tv.org wa6svt@gmail.com
Los Angeles, north Oat Mtn.	W6ATN	919.25 3380 fm	434.0, 434 / 2 dt 2441.5 fm	VUSB, FM DVB-T	www.atn-tv.org wa6svt@gmail.com
Jobs Peak	W6ATN	1253.25	434.0, 434 / 2 dt 2441.5 fm	VUSB, FM DVB-T	www.atn-tv.org wa6svt@gmail.com
San Bernardino Snow Peak	W6ATN	1242 / 4 dt	434.0, 434 / 2 dt 2441.5 fm	VUSB, FM DVB-T	www.atn-tv.org wa6svt@gmail.com
Santa Barbara	WB9KMO	1289.25	434.0, 434 / 2 dt 2441.5 fm	VUSB, FM DVB-T	www.atn-tv.org wb9kmo@gmail.com linked with W6ATN
San Diego	KD6ILO	423 dt 1243 dt 1268 ds	441 dt 1286 ds 5885 fm	DVB-T, DVB-S, FM	kd6ilo@yahoo.com also AREDN mesh
San Jose	W6SVA	427.25	910 fm, 1255 fm	VUSB, FM	www.k6ben.com :w2nyc@pacbell.net
Clayton	W6CX	1244.5 ds	1292.5, 1273, 915 ds, & 1273 fm	DVB-S, FM	www.mdarc.org info@mdarc.org
Palomar	W6NWG	1241.25	915 fm 2441.5 fm	VUSB, FM soon be DVB-S	w6nwg@palomararc.org mountain.michelle@gmail.com
COLORADO					
Boulder	W0BTV	423 / 6 dt or 421.25 5905 FM	1243 / 6 dt 441 / 6 dt 439.25	DVB-T, VUSB, FM	www.kh6htv.com kh6htv@arrl.net
Pueblo	W0PHC	423 / 6 dt	441 / 6 dt	DVB-T	billn@billnicoll.com www.puebloradio.org
DELAWARE					
Wilmigton	KC3AM	423 / 6 dt	439.25 AM, LSB	DVB-T AM	KC3AM@verizon.net qrz.com
FLORIDA					
Cape Coral	W1RP	421.25	439.25	VUSB	paul@cardlink.com
Cocoa Beach	K4ATV	427.2	439.25	VUSB	www.lisats.org
Panama City	KV4ATV	434.0	919.25	?	kv4atv@gmail.com
S.W. Idaho	WI7ATV	1257 fm	426.25	VUSB, FM	ka7anm@yahoo.com under construction
IOWA					
Davenport	W0BXR	421.25	439.25	VUSB	http://www.arcsupport.com/drac/

KANSAS					
Wichita	KA0TV	421.25	439.25	VUSB	k0wws@arrl.net
KENTUCKY					
Bowling Green	KY4TV	421.25	439.25 1280 fm	VUSB FM	w4htb@ieee.org www.qrz.com www.atn-tv.org
LOUISIANA					
New Orleans	WD0GIV	421.25	439.25	VUSB	wd0giv@att.net
MARYLAND					
Laurel	W3BAB	421.25	434.0	VUSB	www.qsl.net/w3bab
Towson	W3BAB	1291 fm	434	VUSB, FM	www.qsl.net/w3bab
Baltimore	W3WCQ	439.25 911.25	426.25 1253.25	VUSB	http://bratsatv.org/ brats@bratsatv.org
MICHIGAN					
Jackson	KC8LMI	923.25	439.25, AM LSB	VUSB	KC8LMI@hotmail.com
Grand Rapids	K8DMR	421.25	439.25	VUSB	ron_fredricks@att.net
Flushing	KC8KCG	1253.25	439.25 AM LSB	AM	kf8ui@mscginc.org
Flint	KC8KGZ	1253.25	439.25	VUSB	www.mscginc.org kf8ui@mscginc.org
MINNESOTA					
Wabasha	KD0HWX	421.25	439.25	VUSB	jonmcpete@yahoo.com
MISSOURI					
St. Louis	W0ATN	426 / 4 dt	440 / 4 dt	DVB-T	k0pfx@arrl.net
NEBRASKA					
Omaha	WB0CMC	421.25	434.0	VUSB	wb0cmc@cox.net
NEVADA					
Las Vegas	N7ZEV	1253.25 912 fm	434.0, 434.0 / 2 dt 2441 fm	VUSB, FM DVB-T	frank.n7zev@gmail.com linked to W6ATN S. CA & AZ
NEW JERSEY					
Vernon	W2VER	5885 fm	5665 fm	FM	jaythienel@yahoo.com
OHIO					
Columbus	WR8ATV	423 / 2 dt 427.25 1258 fm 1268 ds 2397 mesh 10350 fm	439 / 2 dt 439.25 AM LSB 1288 fm 1288 ds 10450 fm	VUSB AM FM DVB-T DVB-S MESH	www.ATCO.tv gkenmorris@gmail.com towslee1@ee.net
Dayton	W8BI	421.25 428 / 2 dt 1258 fm	439.25, 439 / 2 dt 1280 fm	VUSB, FM DVB-T	www.w8bi.org dpel@aaahawk.com
Van Wert	W8FY	434.0	923.25	VUSB	ka8zge@w8fy.org
OREGON					
Portland	W7AMQ	1257 fm	426.25	FM, VUSB	belles73@comcast.net
Portland	WB2QHS	426.0	910 fm	VUSB, FM	emellnik@emavideo.com
PENNSYLVANIA					
Delaware Cty	KC3AM	421.25	439.25 AM, LSB	VUSB, AM	KC3AM@verizon.net
PUERTO RICO					
Aguas Buenas	KP4IA	426.25	439.25, 1252 fm	VUSB, FM	kp4ia@yahoo.com
WASHINGTON					
Seattle	WW7ATS	1253.25	434.0	VUSB	https://www.qsl.net/ww7ats/ ww7ats@gmail.com qrz.com

Revision Notes:
Aug. 2019 --(1) corrected data for Kentucky (2) changed call sign for Boulder, CO Sept. 2019 - -added Pueblo, CO
Oct. 2019 --added San Diego, CA Feb. 2020 -- changed K6BEN to W6SVA, CA --added KC8KGZ, MI Mar. 2020 -- added Davenport, IA
May 2020 --corrected typos Jan. 2021 -- updated Boulder, CO rptr info June 2021 -- found 20 more ATV repeaters listed on www.repeaterbook.com -- attempted to contact all of their trustees to confirm them. Most are obsolete listings and are no longer on the air. Added only two -- Cocoa Beach, FL, Wichita, KS,

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.

03/12/2022 - MOVARC Hamfest
Location: Bidwell, OH
Type: ARRL Hamfest
Sponsor: Mid-Ohio Valley Amateur Radio Club

03/13/2022 - Winter Hamfest
Location: Elyria, OH
Type: ARRL Hamfest
Sponsor: Northern Ohio Amateur Radio Society

03/20/2022 - Toledo Mobile Radio Assoc. Hamfest & Computer Fair
Location: Perrysburg, OH
Type: ARRL Hamfest
Sponsor: Toledo Mobile Radio Association
Website: http://tmrahamradio.org

04/09/2022 - Sixty-Sixth Cuyahoga Falls Amateur Radio Hamfest
Location: Cuyahoga Falls, OH
Type: ARRL Hamfest
Sponsor: Cuyahoga Falls Amateur Radio Club, Inc.
Website: http://www.cfarc.org/hamfest.php

04/24/2022 - Athens Hamfest
Location: Athens, OH
Type: ARRL Hamfest
Sponsor: Athens County Amateur Radio Association
Website: http://www.ac-ara.org/

05/20/2022 - 05/22/2022 Dayton Hamvention
Location: Xenia, OH
Type: ARRL Hamfest
Sponsor: Dayton Amateur Radio Association
Website: http://hamvention.org

06/04/2022 - FCARC Summer Hamfest
Location: Wauseon, OH
Type: ARRL Hamfest
Sponsor: Fulton County Amateur Radio Club
Website: https://k8bxq.org/hamfest

07/09/2022 - Mansfield Mid Summer Trunkfest
Location: Mansfield, OH
Type: ARRL Hamfest
Sponsor: Intercity Amateur Radio Club
Website: http://www.w8we.club

07/17/2022 - Van Wert Hamfest
Location: Van Wert, OH
Type:
Sponsor: Van Wert Amateur Radio

08/13/2022 - Cincinnati Hamfest℠
Location: Owensville, OH
Type: ARRL Hamfest
Sponsor: Milford ARC
Website: https://CincinnatiHamfest.org
Website: http://W8FY.ORG

09/25/2022 - Cleveland Hamfest
Location: Berea, OH
Type: ARRL Hamfest
Sponsor: Hamfest Assoc. of Cleveland
Website: http://www.hac.org

TUESDAY NITE ZOOM NET (We listen to 147.48 also)

Every Tuesday night @ 8:00PM WA8RMC hosts a net for ATV topic discussion. There is no need to belong to the club to participate, only an interest in ATV. All are invited. We usually chat for about an hour so please join us via the internet using ZOOM on your computer. We also listen to 147.48 during the meeting so if there is anyone checking in there you will be heard and included. It would be great if some of the previous ATCO members would join us as it's been a long time since we've heard from you.

We normally have 10-15 check-ins from various parts of USA and beyond. It's a fun informal time with various topics and jokes. Share with us a funny story or one liner you have if you can.

To join ZOOM for the first time, simply type **https://zoom.us/join** then download, install the .exe program and run it. ZOOM will start. Click on **join**, enter the **9670918666 meeting ID** then the **191593 password.** Use video or just audio if you don't have a camera.

Note: The DARA ATV ZOOM Net is on Wednesday at 8PM using this same ZOOM link. Feel free to join the discussion there as well.

ATCO TREASURER REPORT - de N8NT

OPENING BALANCE (10/23/21)	$ 3552.36*
Receipts (dues)	$ 210.00
Donation	$ 200.00
ZOOM web fee	$ (60.00)
PayPal fee	$ (8.55)
CLOSING BALANCE (01/22/22	$ 3893.81

* $3552.86 was reported in error last time.

ATCO REPEATER TECHNICAL DATA SUMMARY

Location: Downtown Columbus, Ohio
Coordinates: 39 degrees 57 minutes 47 seconds (latitude) 82 degrees 59 minutes 58 seconds (longitude)
Elevation: 630 feet above the average street level of 760 feet ASL (1390 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=2MHz, PMT=4095, PCR=256, Video=256, audio=257
427.25 MHz Analog VSB AM, 50 watts average 100 watts sync tip (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)
Two video channels in this output: Channel 1 is fed from all receivers. Channel 2 is fed from 439.25 analog receiver only.
2397 MHz Mesh Net transceiver 600mw output (channel 1 minus 2). ID is WR8ATV-2
10.350 GHz: 1watt continuous analog FM

Link transmitter: 446.350 MHz: 5 watts NBFM 5 kHz audio. This is an output used for control signals and to repeat the 147.48 MHz and 449.975 MHz input.

Identification:
423, 427, 1258, 1268 MHz, 10.350 GHz 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 5 dBd 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
2397 MHz - Ubiquiti dual polarity omni 13dBi gain slot for channel 1 minus 2 MESH Rx/Tx operation
2397 MHz - Comet Model GP24 vertically polarized 12 dBd gain omni (Used for experimental Mesh operation)
10.350 GHz - Commercial 40 slot waveguide horizontally polarized 16 dBd gain omni

Receivers:
147.480 MHz - F1 audio input with touch tone control. (Input here = output on 446.350)
439.000 MHz - DVB-T QPSK, 2MHz BW. Receiver will auto configure for FEC'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 & also direct to 1268 MHz DVB-S output channel 2.)
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 SR=4.167MS, fec=7/8. PIDs: PMT=133, PCR=33, Video=33, Audio=49 (Input here=output on all Transmitters)
2398.00 MHz - F5 video analog NTSC. (Input here = output on all TV transmitters) (inactive at this time because of MESH on 2397)
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)
439.00/439.250 MHz - Horizontally polarized dual slot 7 dBd gain major lobe west (Shared with 439 digital & 439.25 analog receivers)
1288.00 MHz - Diamond vertically polarized 12 dBd gain omni (shared with analog and DVB-S receivers)
2398.00 MHz - Comet Model GP24 vertically polarized 12 dBd gain omni (inactive at this time because MESH is on 2397)
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)**
	001	Select 2398 MHz receiver then 00# for auto scan to continue
Manual mode Functions:	00* then 1 for Ch. 1	Select 439.25 analog /438 digital receiver (if video present on digital, it is selected. Otherwise, analog)
	00* then 2 for Ch. 2	Select 1288 digital receiver
	00* then 3 for Ch. 3	Select 1288 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#	No function at this time
	C2* or C2#	No function at this time

ATCO MEMBERS as of January 2022

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	937-264-9812
W8ARE	Terry Meredith III	6070 Langton Circle	Westerville	OH	43082-8964	
K9BIF	Charlie Short	415 West Pike Street	Goshen	IN	46527-0554	
VK3BFG	Peter Cossins	14 Coleman Road	Melbourne	Au	03152	
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	8774 Jersey Mill Rd	Alexandria	OH	43001	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	
WA8DNI	John Busic	2700 Bixby Road	Groveport	OH	43125	614-491-8198
WB8DZW	Roger McEldowney	5420 Madison St	Hilliard	OH	43026	614-405-1710
KB8EMD	Larry Baker	4330 Chippewa Trail	Jamestown	OH	45335-1210	
WB4IR	Bob Holden	7725 Tressa Circle	Powell	TN	37849	865-314 - 4285
WA8HFK,KC8HIP	Frank & Pat Amore	P.O. Box 2252	Helendale	CA	92342-2252	760-503-8106
W8KHP	Allen Vinegar	2043 Treetop Lane	Hebron	Ky	41048	
WA8KKN	Chuck Wood	5322 Spruce Lane	Westerville	OH	43082-9005	614-523-3494
WB9KMO	Rod Fritz	8334 E. Culver Street	Mesa	AZ	85207	
WA8KQQ	Dale Waymire	225 Riffle Ave	Greenville	OH	45331	937-548-2492
WB8LGA	Charles Beener	2540 State Route 61	Marengo	OH	43334	
W8MA	Phil Morrison	154 Llewellyn Ave	Westerville	OH	43081	
KA8MID	Bill Dean	2630 Green Ridge Rd	Peebles	OH	45660	
N8NT	Bob Tournoux	135 Barrett Hill Road	Center Rutland	VT	05736	614-563-7443
W8NX, KA8LTG	John & Linda Beal	5001 State Rt. 37 East	Delaware	OH	43015	740-369-5856
WU8O	Tom Walter	15704 St Rt 161 W	Plain City	OH	43064	614-309-7134
KB8OFF	Jess Nicely	1888 Woods Drive	Beavercreek	OH	45432	
W6ORG,WB6YSS	Tom, Maryann O'Hara	2522 Paxson Lane	Arcadia	CA	91007-8537	
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	Dave Jenkins	100 Miller Ave Apt. 108	Ashville	OH	43103	740 954-9221
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
WA6SVT	Mike Collis	PO Box 1594	Crestline	CA	92325	
NR8TV	Dave Kibler	243 Dwyer Rd	Greenfield	OH	45123	937-981-1392
KB8UWI	Milton McFarland	115 N. Walnut St.	New Castle	PA	16101	
WA8UZP	James 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	
AC8XP,KE8GTT,KE8HPA	Troy,Seamus Bonte	5210 Smothers Road	Westerville	OH	43081	
AC8YE	Larry Howell	4080 Dill Road	Centerburg	OH	43011-9771	
KB8YMQ	Jay Caldwell	4740 Timmons Dr	Plain City	OH	43064	614-879-9946
KC8YPD	Joe Ebright	3497 Ontario St	Columbus	OH	43224	
KD8YYP	Anna Reed	818 Northwest Blvd	Columbus	OH	43212	
WB8YTZ	Joe Coffman	233 S. Hamilton Rd	Gahanna	OH	43230-3347	
N8YZ	DaveTkach	2063 Torchwood Loop S	Columbus	OH	43229	614-882-0771
W8ZCF	Farrell Winder	6686 Hitching Post Ln.	Cincinnati	OH	45230	513-218-3876
N8ZM	Tom Holmes	1055 Wilderness Bluff	Tipp City	OH	45371	

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: Stan Diggs AA8XA
Newsletter editor: Art Towslee WA8RMC

NEW MEMBER(S)

Let's welcome the new members to our group! If any of you know anyone who might be interested, let one of us know so we can flood 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. 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. Dues payments are as of the date paid and will expire on the same month/year on the due date year.

Your support of ATCO is welcomed and encouraged.

Membership expiration notices will be sent out via Email starting 30 days prior to expiration date.
NOTE: Dues records on your individual portion of the ATCO website are listed as the date money is received if after the due date. If before the due date then and shows due one year from that date.

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
438 Maplebrooke Dr. West
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 MEMBERSHIP IS EXPIRED.