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" and is published quarterly (January, April, July, and October)

ATCO SPOTLIGHT TOPIC

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

---Yeah, We just came from the guy you were arguing with on ATV --- he did the same thing.

ACTIVITIES ... from my Workbench

Hi again guys. It's Newsletter time!

Well, it seems I've less time than I thought to work on ATV projects. You'd think that retired guys could prioritize our schedules to spend time enjoying our hobby but it really doesn't work out that way. I enjoy walking outside so I spend up to 2 hours per day doing just that. During that time I think about all of the things I SHOULD do and the things I'd LIKE to do. Mixed in there somewhere is time spent where I don't want to do ANYTHING. It's a real job to sort these things out but life lessons say it must be done. As a consequence, since my wife has a voice in this also, I'm reminded of those things I SHOULD do. Nuf said!

So far this summer I have successfully been able to complete my tower project. My crank up telescoping 40 foot tower is now fully automated with a motor and RF remote control. No more going out in the rain on Tuesday nights before the net to put up the tower. To know just how high the tower is at any point, I've installed a small video camera with infrared emitters on the top of the fixed section. I then wrote height marks on the raise-able section so I can read the height with a video monitor as I raise it. Sounds complex doesn't it? Not really. The camera is only about 2 inches square that requires a single cable to supply power and receive video. A limit switch combination would be much less reliable and would require more cables.

While on the tower subject, it takes me to my next project. That is to remove my 10GHz dish as it is not that reliable at my new house location due mainly to the trees and my 50 foot total tower height limit. (I hate those covenants). Also, the existing mast was not large enough to keep the dish from swaying outside the beamwidth limits. A new larger diameter mast involved reworking the tower top thrust bearing and a few other clamps. On the bright side, I was able to install a longer mast above the tower top so I gained about 2 more feet for the top antenna. (I'm now just above my city approved height limit but if you don't say anything, I won't either).

Along with the larger, taller mast came a mesh 120 degree sector antenna installed at the top in place of the 10GHz dish. Out goes 10G, in comes BBHN mesh activity. After installation, Ken W8RUT and John W8NX have been able to see it reliably so far. Terry W8ARE is working on it. Now, we need to get more people to install mesh nodes so those of us that are surrounded with trees blocking certain directions, help can be on the way.

Speaking of mesh networks, I still have to install one downtown at the repeater. I have a Ubiquiti unit that Ken donated programmed to 2397MHz and need to put that one downtown. Since it is on 2397MHz, the interference should go way down. The existing one is on 2417, right in the middle of the Wi-Fi 2402-2450 band. We will test that one for a while but when I can find someone willing to assist me there; I want to remove the tower camera (I don't think it is being used) and put up a dual polarity Omni Mesh antenna in its place. We can't install any more cables that go through the roof but can use the one that's there so if I remove the camera, I can use the unused cable for an Ethernet downfeed. Thanks Ken for your support.

No other work at the repeater has been done so far this summer but I MUST rework the existing dual slot antenna for 427MHz. The Mylar radome has worn off exposing the main feedpoint so when it rains, the repeater 427MHz analog signal drops drastically. I'm thinking about reworking my 4 bay Lindsay antenna and replacing the slot antenna with that. It would save an extra trip to the repeater. Again, that is a buddy project that I will not attempt alone.

Finally, I am going to try to make it over to the Jones Road repeater site to fix the 1288MHz loop yagi pointing toward Columbus and raise the 439MHz rib cage slot antenna from its present 40 feet above ground to the 100 foot level. That way we will have a remote 439MHz input to our Columbus repeater. On a good day, Fort Wayne ATV communication should be possible. Also, WA8KQQ in Greenville, Ohio just west of Dayton should be able to work into it. We'll see. My fingers are crossed!

That's all for now guys,
….73, WA8RMC

CAPTION CONTEST RESULTS

Well, the Caption contest didn't go as well as I first thought. In my opinion, not enough people participated. Maybe the picture wasn't good enough, maybe ATCO people aren't creative enough (NO, that's not true), maybe the moon wasn't aligned right (That's better) or maybe I should have included more pictures to vote on the best one (There, maybe that's it!). Let me know if I can improve it or suggest something else so let's keep the ball rolling.

In any case I had enough participation to qualify a winner. Bob Rector, W8RWR #33, won the $100 prize which I'm told was well spent at Dayton. The second place was a tie among three: Dave, AH2AR #31, Jay, KB8YMQ #2, and John, W8RXX #46 for an extension to ATCO dues.

The entries are below:

1. "Although amateur inventor Jim Carlson achieved a gain of over 10 dB with his covert listening device, the design needed a bit more tweaking before he could submit it to the patent office."
2. Here's ..... testing his hearing aids that he received from the Veterans Administration.
3. I hear that!
4. ATV? Tell me about it, I am all ears!...
5. I can afford feed line next, then some day a RIG!
6. I am still waiting to see that DVB-T signal...
7. This is my solution to avoid problems with my rig and feed line!
8. And they laugh but I've already worked 5 states!
9. I am one that likes to listen to the distant drummer...
10. I can not afford to go to the outdoor concert, but I can hear it just fine from here...
11. My wife makes me wear this as she says I never listen to her...!
12. Like it? Kind of matches my jacket doesn't it?
13. No one said getting on DATV was going to be easy!
14. With this invention, I hope the ATCO group lets me join!
15. If you think this picture is good, you should see my selfie!
16. This is my remote Facebook access rig...
18. I don't know why I'm not a hit on the dating sites...
19. I'm auditioning to be in a 'Dilbert' (who is a Ham) cartoon strip...
20. You're 59 in South Texas...QRZ contest...
21. Don't laugh, my SWR is 1.2 : 1 from 2.4 to 24 GHz!
22. And I still can't get any cell service out here!
23. Not that I can hear so much, but my front to back is wonderful - I can tune out anything!
24. This hobby is dumb! I think I'll get a puppy instead!
25. This is a file photo of Art when he first became a Ham.
26. New hearing aides wife found for me
27. This is my punishment for Ignoring the wife
28. I got my FREE hearing aides
29. I heard of boxing someone's ears BUT this is (#$@%)
30. Sorry Cap'n Kirk - I canna hear you----------
31. Although not for the fashion conscious, Jim's revolutionary hearing aid design does not require the use of batteries.
32. QSL
33. CAN YOU HEAR ME NOW?
34. WHAT?
35. "I'm all ears sweetheart…. could you repeat that?"
36. 10-4 Good Buddy...I've got my ears on
37. Red neck hearing aid
38. Hill billy hearing aid
39. Red Neck stethoscope
40. M-I-C-K-E-Y M-O-U....Hey Art, your signal's a bit Snowy but readable on my new set of EARS.
41. Oh look, my Elephantiasis didn't drop!
42. DX hearing aids
43. I think I can hear Russia from here!
44.) Yes Dear...
45) Grandpa, what big ears you have...
46.) Listening to congress carefully they are still full of S&%#!

…WA8RMC

ALTERNATIVE TO ATV ACTIVITIES……

Hello,
A guy gave me an old back projection big screen TV - I got it working and then found that the reflecting mirror was in little pieces – By playing some more I made a new mirror out of a piece of masonite covered with Reynolds aluminum wrap - it worked but wasn't anything to brag about so I gutted it for parts and you can see in the pictures what I did with the big roll around cabinet - took the stick out - angled the back off - put a new back on it - put 3 shelves in it with sliding panel doors to save on hardware and painted it with some old left over paint - got a little touch up to do on the paint then load it with hand held power tools - it's fun to play.
…Dale WA8KQQ

HAVE A NICE DAY

INTERNATIONAL DATV QSO PARTY PREVIEW

Here's a "heads up" for the upcoming DATV QSO party on Friday August 21st. Last year was a great success but I thought the USA Hams could have been better prepared, me included. It would go much smoother if we all prepare in advance a short, 2-3 minute recorded video of what you are up to including a pan around the shack. When it is your turn to show the video, you can do that yourself or send it to a friend here to show it from their QTH in case you don't have recording facilities. As an alternate, you can send it to me and I'll feed it out on the internet at the appropriate time. Live video is most acceptable too!

Following is a note from Peter Cossins, VK3BFG from Melbourne, Australia who was in the USA earlier this summer…WA8RMC

Hi Guys..
I hope the winter has not been too bad although according to the news northern USA is under a lot of snow and Britain has not been a lot better. I will be in the US in late March/April but unfortunately a long way from either Art or Don. I have hired a Cessna 182 in Dallas and intend to fly myself around the bottom parts of the US for a couple of weeks.

Looking forward to that and it probably will be a 'Bucket List' in terms of my personal flying. I intend to see if yet another DATV QSO Party may be viable. I have purchased a Pinnacle Dazzle which is a beefed up USB Dongle that I am told will work with the newer versions of Skype.

All attempts to keep an old version on my PC have been aborted and I have not been able to succeed in a work around. If I get support for another event , then an idea would be to get participants to prepare a very short video showing their location, antennas and a bit of the shack or ATV transmitter i.e. a bit of show and tell. It could be live if they like.

Of course all would be welcome irrespective, but I would like to get away from just a call sign and some audio … timing would be again around the end of August. Noel … would like to expand the UK connection if possible.
Your thoughts would be appreciated.

Regards,
Peter Cossins, VK3BFG

INTERNATIONAL DATV QSO PARTY PREVIEW

The annual world DATV QSO party is on again, starting on Friday 21st August (Melbourne Australia time). Friday night in VK will include linking DATV Repeaters from Melbourne, Bendigo, Brisbane, Sydney and Port Pirie.

In addition it is envisioned that individual remote stations will Skype into the Melbourne anchor Peter, VK3BFG. All incoming signals to Peter will be transmitted to the Melbourne DATV repeater VK3RTV. When other interstate anchors are used, they send the output of their repeaters by Skype to Peter, who then transmits the signal to VK3RTV. In return, Peter will send the output of VK3RTV to the other anchors for re-transmission through their repeaters. In this way, most of the ATV activity is conducted using amateur frequencies with the internet only as the pipe for national and/or international links.

VK3RTV in Melbourne, VK4RMG in Brisbane, W6ATN in Southern California and GB3HV stream on the BATC so stations who cannot receive a repeater can watch the activity as it unfolds.

10:00 AM Saturday 22nd in Melbourne, Australia is the start of the international activity. Time zones are obviously important and we start in Columbus Ohio. This will be 8.00 PM Friday night in central USA. Art, WA8RMC will be the anchor for stations using the DATV Repeater WR8ATV in Columbus Ohio.

All stations are encouraged to participate, but it would be good to see a few faces and/or see a short prepared video of the ham shack, antennas or anything else of interest. Just a quick check in is also OK.

As the morning progresses, the activity will move to Southern California where Don KE6BXT will be the anchor for the W6ATN network. Even later, Melbourne stations will work through GB3HV in Surrey England. GB3HV is one of the Repeaters that offer Skype input. As such, activity can take place without an anchor although it would be better if there was one.

As a matter of interest, VK3RTV has a two channel multiplexed output on 446.5 MHz and occupies a 7 MHz channel. The output standard is QAM16 DVB-T which can be received by domestic Set Top Boxes and televisions sets with manual tuning. It has three inputs, 1255 MHz DVB-S (VK3RTV1), 1250 MHz Analogue FM (VK3RTV1) and 1276 MHz DVB-S (VK3RTV2). VK3RTV1 generally receives from the greater Melbourne metropolitan area with inputs to VK3RTV2 having spot beams to the east and south east and west. Melbourne is fortunate that there is a hill to the far east with a height of 2500 feet which has been the location of VK3RTV since about 1981. Good signal reports on DVB-T have been received from stations 40 kilometers away.

Peter's station is based around an SR Systems Exciter running DVB-S. Power amplifiers can achieve up to about 15 watts to a Loop Yagi or Grid Pack. In addition, Peter has a Digilite and a DATV Express which replace the SR Systems Exciter and the same power amplifier chain. Peter has a good location and can access VK3RTV1 with less than 100 milliwatts and VK3RTV2 with about 600 milliwatts.

Photographs:

1. My Antennas … 2 meter Quad … 70 Cm Yagi … 23 cm Grid Pack …. 6 Meter beam.

2. My House... Tower with G5RV and guyed mast with 23cm Loop Yagi and 70 cm beam (for VK3RTV).

3. W6ATN …

23 cm arrays VK3RTV

4.

5. Neil VK3BCU, Peter VK3BFG and Bob VK3AIC assembling the Melbourne 70 cm transmit array for VK3RTV. (18 months ago)

…. Regards,
Peter VK3BFG

WILMINGTON, DELAWARE REPEATER LOCATION

Dave, KC3AM is working to create a DATV repeater in Delaware. Some notes on his progress follow: WA8RMC

http://www.towerspace.net/ This is the site I have to work with. There is a blockhouse that is not shown and that is where most of the equipment is. I plan on putting the final amp up top with about a 30' feed line to the antenna. This is an old picture of the "Brandywine Tower" from in its heyday. Most antennas are gone as well as the dish's. There are 138 steps to the top and I have to stop twice to catch my breath and give my legs a rest. The platform is about 100' above ground and I have a clear view for 25 miles or so.

Take a minute and read the history. If you remember about 20+ years ago at Dayton in the area opposite where Heil Sound is today there was Delaware Amateur Supply and one of those owners is the present owner of this site.

Hams should be seen as well as heard, 73
KC3AM, Dave

History of the Brandywine Tower

Many people in Northern New Castle County irreverently refer to the tower as the fire tower. This is totally incorrect since the tower was never used as a fire spotting tower. According to the records I have been able to find, the tower was built in the late 1940s by Western Union as a microwave relay station. It became part of the cold war defense communications system between New York and Washington. One half of two of the walls of the room on the platform are fiberglass and there were originally two microwave dishes mounted inside pointing out through those panels, one mounted above the other on massive iron racks. There were additional side mounted dishes on two of the legs. For more info on the cold war defense communications system, there is an EXELLENT web site at http://coldwar-c4i.net/.

Western Union abandoned the site and the county seized it for back taxes. A company in New Jersey bought it from the county for the back taxes as an investment and tried to rent out space. They managed to draw three customers. Two commercial remote base two way radio systems were installed there as well as a microwave relay system carrying HBO and Prism to the local cable TV operator from a MDS system in Philadelphia.

The Delaware Repeater Association had its Amateur Radio (HAM) repeater up there as a public service, free of charge in return for minor maintenance and keeping the property up. The DRA received a letter stating basically that if the "following" were not done in 30 days, their equipment would be confiscated. The "following" was three pages of things including painting the tower which would be really stupid since it is not required to be painted and it is galvanized. I saw that letter and immediately contacted them asking how much they wanted for it. We agreed on a price and I became the proud owner of the Brandywine Tower. At the time I had no idea of the historic past it had.

Very soon after I bought it, the Cable operator moved out leaving me with more expenses than income, but I started doing some strategic marketing and managed to get it making money again. Then in 1979 two of us got together and formed Delaware Amateur Supply, selling and servicing ham radio equipment. Since I had the tower, the obvious extension was to open a two way radio shop of my own, which I did in the upstairs loft of the radio store. That two-way company was Brandywine Communications Service. I started selling radios to and servicing radio equipment for many local companies.

One day the district sales manager for the E.F. Johnson walked into the store, being a ham radio operator himself. He saw the meager commercial radio display I had in the store and asked if I wanted to become a Johnson Dealer. I scraped the money together for the initial stocking order and became the Johnson dealer for New Castle County, Delaware and Cecil County, Maryland. Things were slow until they offered to give me an SMRS license that they had on a tower owned by their then owner, Western Union, of all companies licensed on a tower in Elkton, MD. We found that there would be problems moving the license from Elkton, MD to my tower. We negotiated a deal with the licensee of a system in Atlantic City, NJ to allow me to construct my system closer than the 75 mile distance required by the FCC at the time in exchange for allowing him to move his system in Kaolin, PA to my tower rent free and hook the two systems together to form a 10 channel system instead of two 5 channel ones. With any trunking system, the more channels you have together, the more efficient the whole system becomes. They failed to load their system by the deadline and lost their license so the deal was over and I became the only Johnson Trunking system in Wilmington for awhile.

Along came Nextel buying up 800 MHZ radio spectrum to build their nationwide system and I sold my system to them and continued to rent them the space for the system until they decommissioned all the analog systems that they bought and used the channels for their digital system. Right after I sold the trunking system we sold Delaware Amateur Supply to Ham Radio Outlet, based in Anaheim, California. I bought my partner out of his interest in Brandywine Communications Service and sold the whole company to Delaware Communications and Electronics the next day.

My partner went back to his auto body work full time and I ended up working for Delaware Technical & Community College as the Telecommunications Manager for both the Stanton and Wilmington Campuses. I still operate the tower with the help of my oldest ally, the Delaware Repeater Association doing all the minor maintenance. They don't pay any rent but I look at it as giving back to the whole community due to the public service activities that the club is involved in, providing communications for all the charity walks and runs, not to mention, running doctors and nurses to the hospitals during the blizzards that hit the area. During the blizzard of 1996, I was out on the road transporting emergency personnel from 9:30 AM until 2:30 the next morning to St. Francis and Christiana hospitals. Pennsylvania had decreed that any vehicle caught on the road would be stopped and ticketed. We had a special waiver to enter PA to pick up a surgeon to perform emergency surgery. The PA State Police met our member at the border, escorted him to the doctor's house, and then back to the border. A couple of hours later the Delaware State Police called on us for help. Our dispatcher sent that same member to a development near the tower. We all got a good laugh when he announced that he had to pull a Delaware State Police Humvee out of a snow bank!

RECENT ATV DX

Hi ALL,
Here is Hank's Stream capture of W8RVH, a remarkable picture from W8RVH's temporary setup about 60 watts from Springfield, Ohio to W4HTB Bowling Green, KY approx 250 miles on June24, 2015.

…Farrell, W8ZCF

Hello All,
Great continuous digital pictures, Historical, from W8RVH Springfield, Ohio to W8ZCF Cincinnati, Ohio July 6, 2015.

Note perfect noise free pictures. I don't believe it could have been done with analog! Hope more stations with digital come on the air soon!

…Farrell, W8ZCF Cincinnati, Ohio

Great news on the opening! It extended at least up to 900 MHz This morning I had no trouble bringing up the KC8LMI repeater (439.25 in and 923.25 out with 300 watts output) in Jackson and seeing my call and his ID coming back to me on 923. Distance was 84 miles. Repeater signal was P1+ and locked up. It looked like I was P3-P4 into it as I was as strong as the ID most times. I was using my low (10' off the ground) 900 yagi pointed towards Jackson across my lake. Opening faded out about 9:30 AM eastern. I called on 3930 but guess everyone had left for breakfast. (I was up at 7 but laid back down for a quick wink and next thing I knew it was 8:30. Darn!)

I will try again this evening (8:30 PM eastern) and tomorrow AM. Wish you guys had 900 receive so you could transmit north on 70 cm and watch yourself come back on 900 and we could see each other as well. Jackson is on high ground (for MI) and KC8LMI is on top of a downtown building. His repeater makes a good portal between MI ATV'ers and OH/IN ATV'ers.

I also got a voice-mail from Ron, W9ZIH. Too much QRM from the local 9's on 3932.5 in the AM but he is available any evening. Call him to set-up a schedule or on the spur of the minute if an evening opening suddenly appears.

I am setting up a remote Rx on 439.25 to try and get Ron better than at the home QTH (300 feet higher) with a link back to my home also on 923.25. I'll also be trying the remote yagi pointed towards Ohio/KY/IN this summer
…Ron K8DMR.

SATURDAY BREAKFAST

WOW! This is a special occasion! Check out the guy in the far rear center. It's Jim Reed, WA8UZP. Good to see you again, Jim. Jim lives within walking distance of Marshals restaurant, the place for breakfast this time, and says he'll be there but hasn't shown up in recent history. Good to see him again. Also, Bob Holden, KD8TIZ, in the rear on the right, has taken a new job in Knoxville, Tennessee and will be moving soon so we wanted to say good luck with his new job.

If you haven't joined us before, please feel welcome to come. It's every Saturday at 8AM at a rotating restaurant that is announced on the ATCO bulletin board. We try to pick various places from different parts of the city so it's not too far from any one person. Thanks for the picture, Stan. The waitress took it with Stan's Smartphone. The attendees are from left to right, Bob N8OCQ, Roger WB8DZW, Jay KB8YMQ, Jim WA8UZP, Bob KD8TIZ, myself and Stan AA8XA.
…WA8RMC

NEW WORLD DISTANCE RECORDS ON 2.3 AND 3.4 GHZ HAM BANDS

Two California radio amateurs -- one of them in Hawaii -- have set new world distance records on the 2.3 and 3.4 GHz microwave amateur bands. Wayne Overbeck, N6NB, operating from a radio-equipped rental car on the Big Island of Hawaii, worked Gregory Campbell, W6IT, operating from Overbeck's own fixed station near Orange, California, on both bands -- a distance of more than 4024 km (2495 miles). The contacts blew away records that had stood for more than 20 years, and more than doubled the previous distance records for a two-way voice (SSB) contact at those frequencies, Overbeck said, adding that most previous microwave distance records have been set using CW.

"Ours was the first-ever SSB contact between Hawaii and the mainland on 2304," Overbeck noted. He said Chip Angle, N6CA, and KH6HME (SK) made the first transpacific SSB contact on 3.4 GHz in the 1990s.

The record-setting contacts occurred on June 19 (June 18 in Hawaii) on 2.3 GHz at 0257 UTC and at on 3.4 GHz at 0300 UTC. W6IT was in grid square DM13cs, while N6NB/KH6 was in BK29hq. According to the database of distance records maintained by Al Ward, W5LUA, the old records were 3982 km, set on by N6CA and KH6ME on July 14, 1994, on 2.3 GHz (CW) and on July 28, 1991, on 3.4 GHz (SSB).

N6NB's rover-type station at 8000 feet elevation on Mauna Loa, with Mauna Kea, the Big Island's other 13,000 foot mountain, in the background. [Photo courtesy of Wayne Overbeck, N6NB]

Overbeck flew to Hawaii carrying gear for all bands from 144 MHz through 10 GHz "in two large suitcases, plus a roll-aboard and a backpack" -- weighing about 150 pounds in all. In Hawaii, he rented a small SUV and built a rover-style station that included a rotating roof platform, constructed using parts obtained from a home improvement store.

Overbeck said that when a tropospheric duct formed that could convey signals thousands of miles across the Pacific, he drove around the slopes of Mauna Loa -- 13,000 feet up --and selected several promising sites for long-haul DX, "not necessarily the highest possible sites," he added. "By Thursday, June 18, the duct seemed to be peaking," he said.

W6IT activated N6NB's fixed station and quickly worked N6NB/KH6 on six bands, including 2304 and 3456 MHz for world records. Overbeck said he also heard W6IT on 902 MHz and 5.7 GHz, but local, non-amateur interference in California -- likely from Part 15 Wi-Fi devices -- prevented W6IT from hearing N6NB/KH6 on those bands.

A video of the record-setting 2304 GHz contact between N6NB/KH6 and W6IT (recorded from the Hawaii end of the circuit) is online.

BATC REPORTS INCREASED INTEREST IN ATV

From the DigitalATV@yahoogroups.com web site on 7/2/15:

More than 200 radio amateurs visited the British Amateur Television Club (BATC) stand at the International Amateur Radio Exhibition at Friedrichshafen, in Germany, and it was a “very busy and worthwhile” three-day event promoting both amateur television and the BATC, writes club chairman Noel Matthews, G8GTZ.

Enthusiasts from across Europe, and beyond, were shown demonstrations of the latest reduced bandwidth digital television (RB-TV) project with many commenting on how impressed they were with the MPEG-4 picture quality using just 500kHz bandwidth.

The new USB tuner project Minitiouner demonstrated by F6DZP also created a lot of interest.
The BATC shop enjoyed a brisk trade in items and club treasurer and “ace salesman”, Brian Summers, used the event to help boost the club’s membership to more than 950.

As well as raising the profile of BATC, a lot of time was spent talking to ATV organizations from France and Germany to help strengthen ties between the national clubs putting forward a united front to Europe’s telecom regulators.

As a result of these discussions it was agreed that we should form the European Amateur Television Forum (EATF) which will enable co-ordination on spectrum matters, operating initiatives, TV satellite matters and generally raising the profile of ATV in Europe.

ARTICLE PUBLISHED BY MVUS GOES AROUND THE WORLD

Reprinted from the Midwest VHF/UHF Society Newsletter June/July 2015

We recently published an article on the MVUS Bulletin on "**VSWR: Why It Does Not Mean As Much As You Think"** which has gone around the world and was also picked up by the Dayton Hamvention ATV Forum. The article was initially picked up (from the MVUS Bulletin, Midwest **V**HF/**U**HF **S**ociety in Dayton, Ohio) by the ATCO Amateur Television Newsletter in Columbus, Ohio who published the article in their Newsletter.

The Columbus Newsletter was then read by the Western and Northern Suburbs Amateur Radio Club of Melbourne, Australia who published the article on their WANSARC News publication (February 2015 Issue). At the request of Art Towslee, WA8RMC, the publisher of the Amateur Television Newsletter in Columbus and also the Chairman for the ATV Forum at the Hamvention, he requested that I present the article in slide form to the ATV Forum attendees. Such action was executed during the Hamvention. Many requests for a copy of the presentation were made by email by numerous hams. So fellow MVUS members, be aware that our presentations are being monitored by Hams around the world.
…Al, KP4AQI

ISS DATV IS BACK ON THE AIR

The International Space Station DATV has been off the air due to other NASA and ESA priorities. However it is now back on sending blank transmissions until I finish the "Slide Show" unit I am building. During the time when no active astronaut to student transmissions are taking place it is intended to upload still pictures to my Slide Show module so active video can be sent. Until the time the module is complete and approved, blank transmissions will be sent. The picture below shows Samantha Cristoforetti, IZ0UDF, the Italian astronaut with the HamVideo DATV transmitter blue box after turning it on.

ATCO SPRING EVENT

Well now, how about this? Just when I figured the loyal Spring Event crowd was dwindling, more people attend. That's great! The ATV people are alive after all. Recently, I've noticed a gradual drop in attendance from about 35 people three years ago to less than 20 last fall. We had about 22 people this time so I hope that trend continues.

- Existing officers were re-elected so you're stuck with us again this year.
- Dale, WB8CJW, attended and we all applauded as we know he hasn't been feeling well. He looked great!
- We need suggestions for more ATV activities. Antenna measuring anyone?
- TV Station tour? Jay said he'd look into it.
- Bob won the caption contest and we presented him with a check for $100.
- We had a silent bid for the donated Yaesu HF rig. Bob, N8NT won it.
- Stan won the re-donated hand held dual band talkie.
- I brought popcorn for everyone because I've been talking about it on Tuesday's net.
- I changed the food lineup to pizza and subs this time.

There were a number of people this year that hadn't attended in the recent past. Enjoy the pictures below of them.









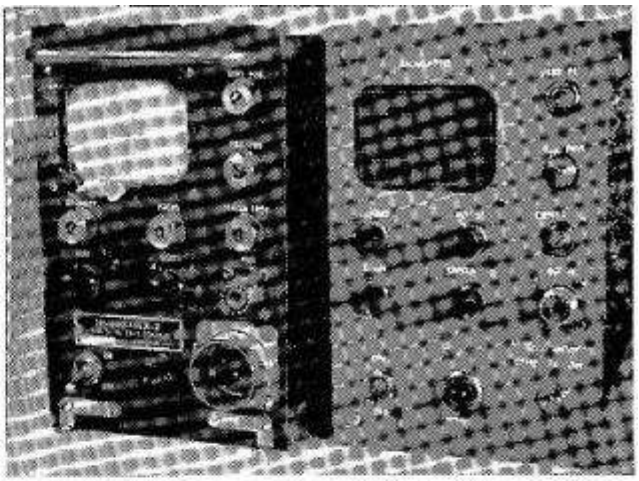
NOSTALGIA TIME! DO YOU REMEMBER THIS?

Phil Morrison suggested that we create a "nostalgia" section in the Newsletter. Since many of you that read this are in our "senior years" category, you'd like to reflect back to those "good old days" where we actually built our own Ham gear or converted a piece of retired military gear that's not around anymore. Back then we couldn't simply go to Radio Shack…whoops; they're not around anymore either…and pick up the Ham item you wanted. But 40 or 50 years ago there was plenty of surplus Military gear that could be converted into something useful. I didn't think so at the time but looking back, they REALLY **WERE** THE GOOD OLD DAYS! So……..let's think back to the days when we worked on gear like this and reflect. Fortunately, we had great Hams like Bill Parker, W8DMR, who knew how to convert stuff like this and was willing to share it with the world. My hat's off to you Bill! Thanks.

From now on I may find some things like this to jog our memory. You can help too so if you know of something we can bring out of the archives, let me know. I'll keep a Newsletter section like this open. This time let's look at an article by Bill back in 1964 that shows how to convert a surplus WW2 IP-69 Panoramic Indicator into a useful Panadapter, a crude type of the modern day spectrum analyzer.WA8RMC.

Converting the IP-69 / ALA-2 Panoramic Indicator

William Parker W8DMR
2738 Floribunda Drive
Columbus 9, Ohio

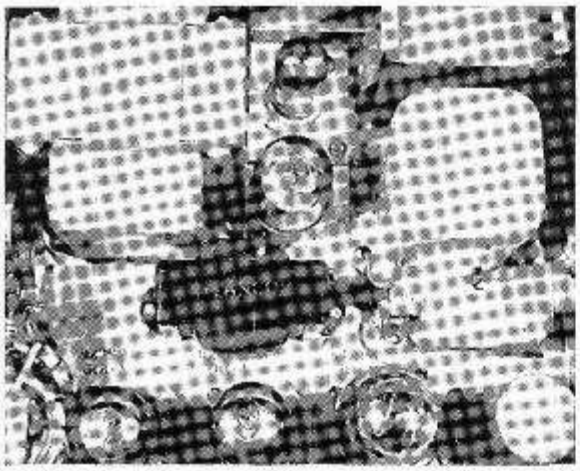


Unit as purchased left, and after conversion right. The power connector hole was plugged with an aluminum disk and liquid aluminum paste.

The budget-restricted ham can convert the surplus ALA-2 into a satisfactory panadaptor. Before diving into the conversion, it is best, especially if one does not have understanding of the operation of a panadaptor, to review the functional operation of such a unit. (See block diagram, Fig. 2.) Briefly, the panadaptor is an electronic device that displays on the face of a cathode-ray tube a portion of the radio frequency spectrum. Individual vertical "pips" are panoramically displayed across the horizontal axis of the CRT face. See Fig. 1. An incoming signal (from a receiver) is fed into the broad-band rf amplifier, than into a mixer, the *if* amplifier, and the detector, just as in any conventional superheterodyne receiver. However, the local oscillator voltage supplied to the mixer must vary sufficiently in *frequency* so that it can cover the frequency width carried by the rf amplifier. This is accomplished by the reactance tube which varies the oscillator frequency over the proper range. The reactance tube is controlled in turn by the sawtooth generator so that the frequency variation of the oscillator is kept in synchronism with the horizontal deflection. As this deflection occurs, the oscillator beats progressively and periodically with one signal after another to produce an intermediate frequency of 6.5 megacycles. Thus one signal after another is periodically amplified by the *if* amplifiers which are resonant to 6.5 megacycles. Each signal as a signal of the intermediate frequency, in its own order is subsequently rectified by the detector.

The output of the detector is fed to the vertical amplifier and the output of the latter is fed to the vertical deflection plates of the cathode-ray tube.

A signal voltage from the vertical and horizontal amplifiers is used to excite the blanking and intensifier circuit. The output of this circuit is connected to the control grid of the cathode-ray tube and accomplishes two things.



It blanks out the retrace and intensifies the trace whenever a signal deflection takes place.

Conversion Details

The panadaptor power supply is designed for 380-1000 cycles. It will be necessary to replace the power transformer with a 60 cycle oscilloscope power transformer. The one used by the author was a replacement transformer for a Heath O-11 oscilloscope. See modified schematic diagram. Most transformers do not provide for a 1B3 filament winding. The transformer used in this conversion used a IV3 high voltage rectifier. The author also wished to remove the power connector, name tag, fuse holder, handle and mounting fasteners from the front panel to give the unit a commercial appearance.

Each individual will have ideas that suit his own needs or that utilizes a particular "junk box" part that he wishes to make use of in the conversion of the panadaptor. The steps outlined in the article will serve as a guide to help get started.

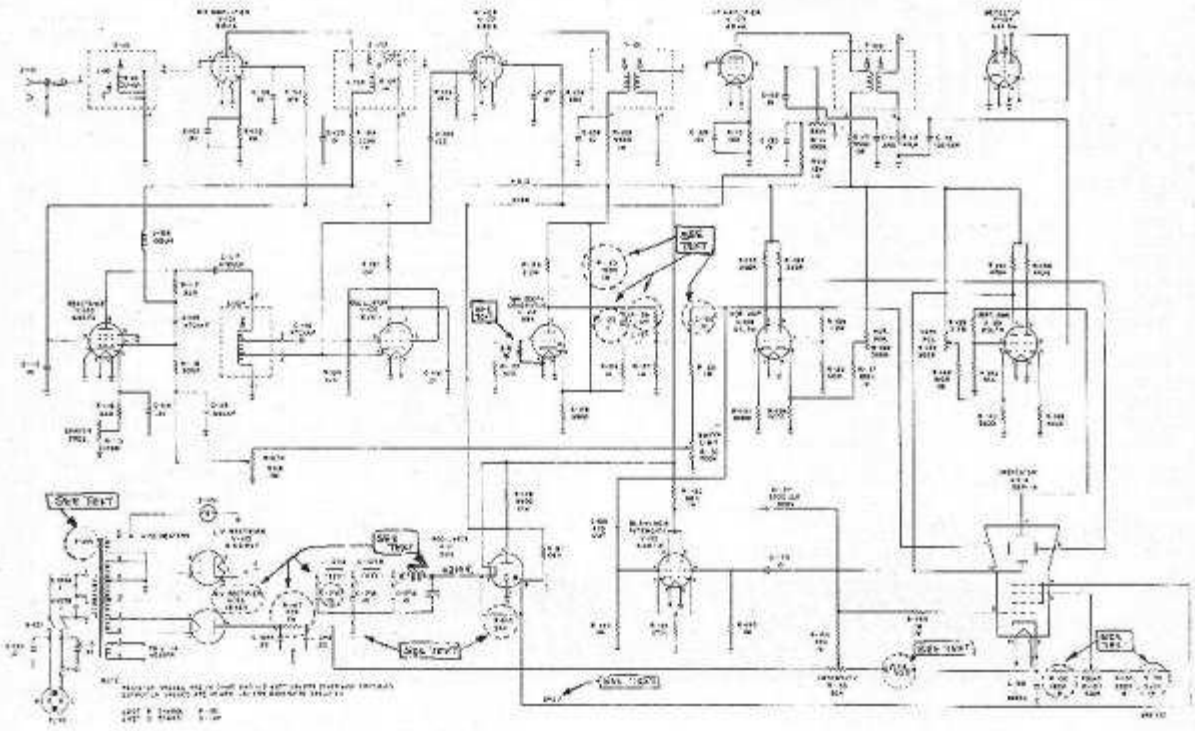
A brief reason will be given for the part that was changed or replaced to help in the understanding of the conversion. This will be particularly helpful in the advent of trouble and also help you to determine if the change is unnecessary or fits your particular application.

The unit that was converted by the author was very clearly marked with respect to component identification. Reference to a resistor for example, R125, upon inspection of the unit, is very easy to locate. Hallicrafters did an admirable job when they built this unit for the Air Force.

Conversion Steps

Step 1. Replace power transformer with 60 cycle version. Remove 400 cycle transformer. See schematic diagram for transformer details. The author, in order to mount the transformer he had available, cut a hole in the chassis and mounted the transformer on two small angle brackets.

Step 2. Replace the 1B3 with a 1V2 tube. This is only necessary if the replacement transformer does not have a 1.25 volt high voltage rectifier filament winding. Most inexpensive oscilloscope transformers have a 0.625



filament winding, and will only operate a IV2 satisfactorily.

Step 3. Replace the following resistors in the high voltage power supply section and accompanying voltage divider circuit. (Note: Throughout the conversion, many of the resistors removed may be used again in the conversion. Therefore treat the leads with respect.) In order to provide the 800 to 1000 volts needed for the high voltage with the ripple component low enough, and still use the high voltage filter capacitors C124A and C124B, it is necessary to:

1. Increase the value of R147 from 22K to 220K 1 watt.
2. Increase the value of the high-voltage divider network to limit the current drain.

Remove R159 220K 1 w. Replace with 1.0 meg 1 watt. Remove R147 22K 1 w. Replace with 220 K (use R159). Remove 156 150K 1w. Replace with 680 K 1 watt. Remove yellow wire from R155. Add in series a 22K 1 watt (use R147) between yellow wire and connection of Intensity control. Remove R160 56K ½ w. Replace with 150K (use R156). This improves the astigmatism of the electron beam.

Step 4. In the author's unit, it was found necessary to add a small 8 henry—70 to 100 milliamp choke in series with B-plus. In addi-

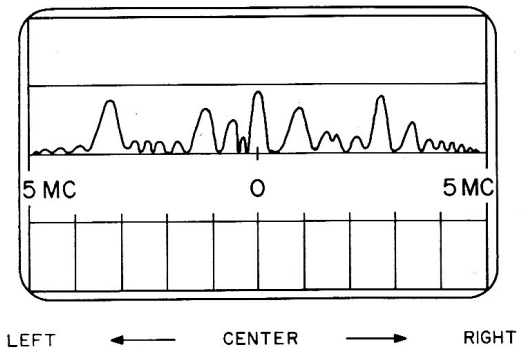


FIGURE 1

Block diagram less power supply.

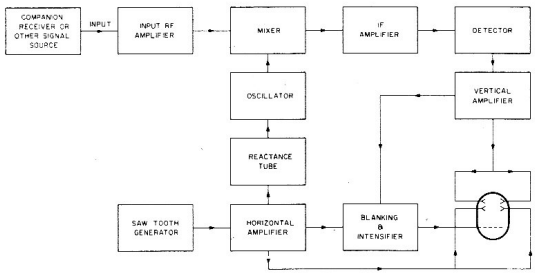


FIGURE 2

Typical display on screen of panadaptor.

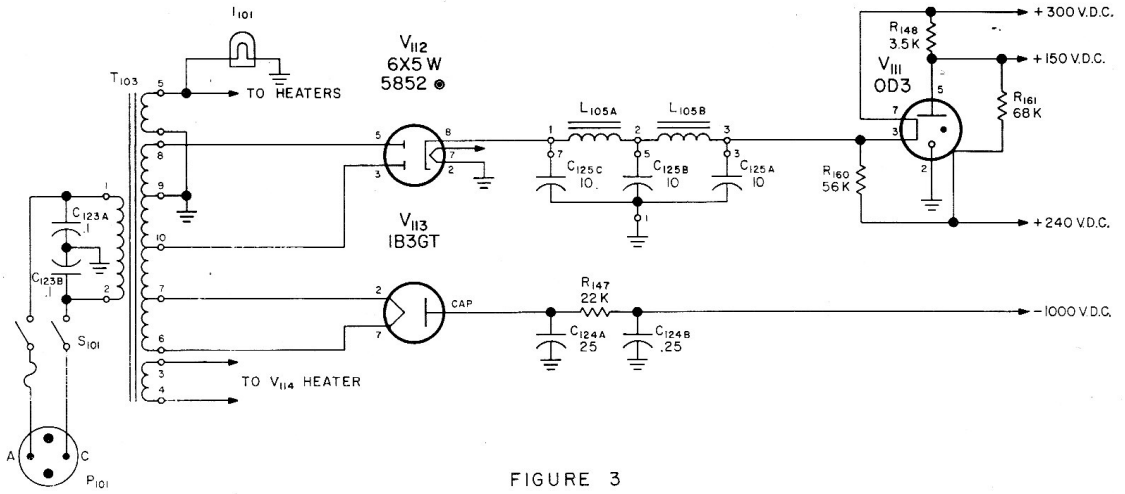


FIGURE 3

Power supply before any changes are made.

tion, B-plus was found to be 350 volts, and needed to be reduced. As opposed to using a series-dropping resistor, choke input to the filter section was chosen. See sketch for this arrangement.

Step 5. The sawtooth generator frequency was original 35 cps. This does not lend itself to 60 cycle operation, because of the beat of the 60 and 120 cycle power supply ripple. Locking of the 884 sawtooth generator to the 60 cycle power line was chosen. The other components in this circuit were changed to improve linearity, amplitude and wave shape. Stability was improved by returning R125 to plus 150 also. It may be necessary to vary R125 from the value used in this article. Capacitor C121 was found to have leakage (0.1 mfd. 400 v) and was producing drift in the horizontal axis.

Connect a 2.2 K ½ watt resistor from pin 5 to pin 7 of the 884 sawtooth generator, v 107, This locks the oscillator to line frequency. Remove C120 0.1 mfd. Replace with 0.2 mfd. 400 volts. Remove C122 .01 mfd. Replace with 0.1 mfd. (use C120). Added care must be exercised in the next several changes if no errors are to occur. Remove R125 180K 1 watt (a 43K resistor eventually). Remove jumper form top of R113 to top of post where R125 was just removed. A small mirror used to view under the terminal strip will show a red wire (the wire is B-plus that supplies the 310 volt to R113, R109, and R104). Heat the terminal from top side of the terminal board, using a pic to pull the red wire loose from the underside of the terminal board. If necessary, lengthen the red wire so it now may be connected to the top of R113 and R109. Connect a jumper from the top of R121 (next to R109) to the top of the post where R125 used to be. Connect a 43K 1 watt resistor where R125 used to be. Remove R126 1.5 meg ½ watt. Replace with 1.0 meg ½ watt.

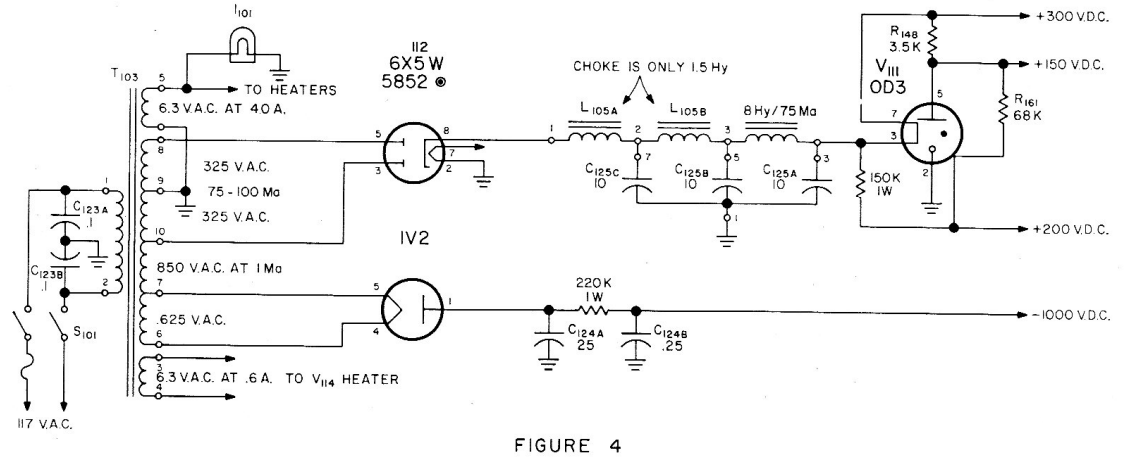


FIGURE 4

Power supply after changes are made. Note T-103 has been replaced with 60 cycle unit (see text).

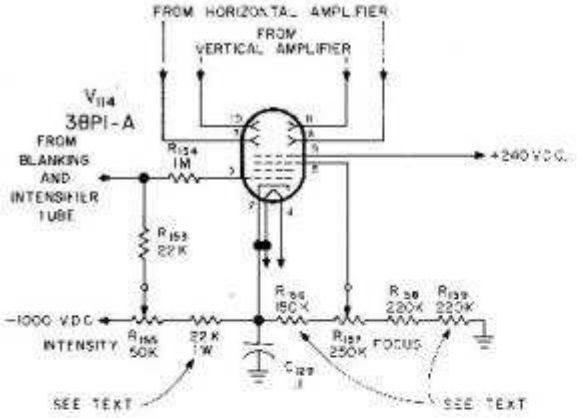


FIGURE 5

Only three resistor changes are required to high voltage divider network.

Step 6. Depending on just what vintage of ALA-2 that you have, you will note some production runs have the fuse holder on the front panel, some have fuse holders mounted inside the unit. The unit described in this article had internal fuse holder clips. They were removed, a fuse holder installed in the rear of the unit, and the ac power cord inserted through a grommet just below the fuse holder. The case was then modified to allow the fuse holder and the power cord with molded plug to freely allow casing and uncasing.

Step 7. Having made the necessary preliminary conversion steps, it is advisable to see if the unit will operate on 60 cycles satisfactorily. The *intensity* should control the brightness of the trace; the *focus* should be able to focus the trace. The *vertical* and *horizontal* controls should be able to position the trace. Before attempting any additional changes, the beam must be operating correctly. Observe if the VR-150 is glowing. Next measure the plus 300 volts dc. Measure the plus 150 volts dc. Do not proceed until these voltages are correct. Carefully measure the CRT high voltage. This should be approximately a negative 850 to 1100 volts. If the high voltage is accidentally shorted to ground, the 1V2 rectifier tube will most probably be permanently damaged. With a low voltage B-plus of 300 volts, the measured current was found to be 75 ma.

Step 8. To test the rf section, connect or couple either an rf signal generator or a grid-dip meter to the *input* connector. Set the *gain*, *sweep limit*, and *sweep width* controls full clockwise position. As the signal generator is tuned from 25 to 35 mcs, a "pip" should roll across the face of CRT. It may be necessary to reduce the level of the signal to keep the pip on the face of the CRT. Set the signal generator to 30 mcs and adjust the *center freq.* control to position the pip to the center of the screen. If this can be accomplished, then the unit is operating as it was intended to operate.

Applications

To display the VHF or UHF ham bands, a narrow-band panadaptor that is very adequate on the lower frequencies (below 10 meters) will not be adequate for a band like 420-450 mcs. Once the user realizes that the need to tune back-and-forth across several megacycles of VHF-UHF band is no longer necessary, the broad-band panadaptor soon becomes a valued piece of equipment to the ham shack.

After a CQ is called, one merely looks at the display on the panadaptor sees a "pip" rise on the screen, and tunes to that frequency to find out if that station is returning to his "CQ."

Often "CQ's" are missed because they are not observed soon enough. While reading the the mail, one may monitor the rest of the band, ready to take action when a station "appears."

This unit is used with broad band converters having an *if* range of either 26 to 30mcs or 30 to 34mcs. It could be modified for VHF converters with different *if* ranges. A check of the entire band may be made any time, because the signal fed to the panadaptor is from the broad-band crystal controlled VHF-UHF converter. In the case of panadaptors used normally for low frequency operation, the signal is fed to the panadaptor from the *if* output of the receiver and only about 250 kc can be observed. As the receiver is tuned, the signals roll by. Only those signals tuned in the pass-band can be observed.

. . . W8DMR

Digital Amateur TeleVision
Exciter/Transmitter

available from

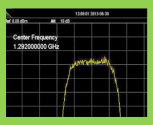
DATV-Express

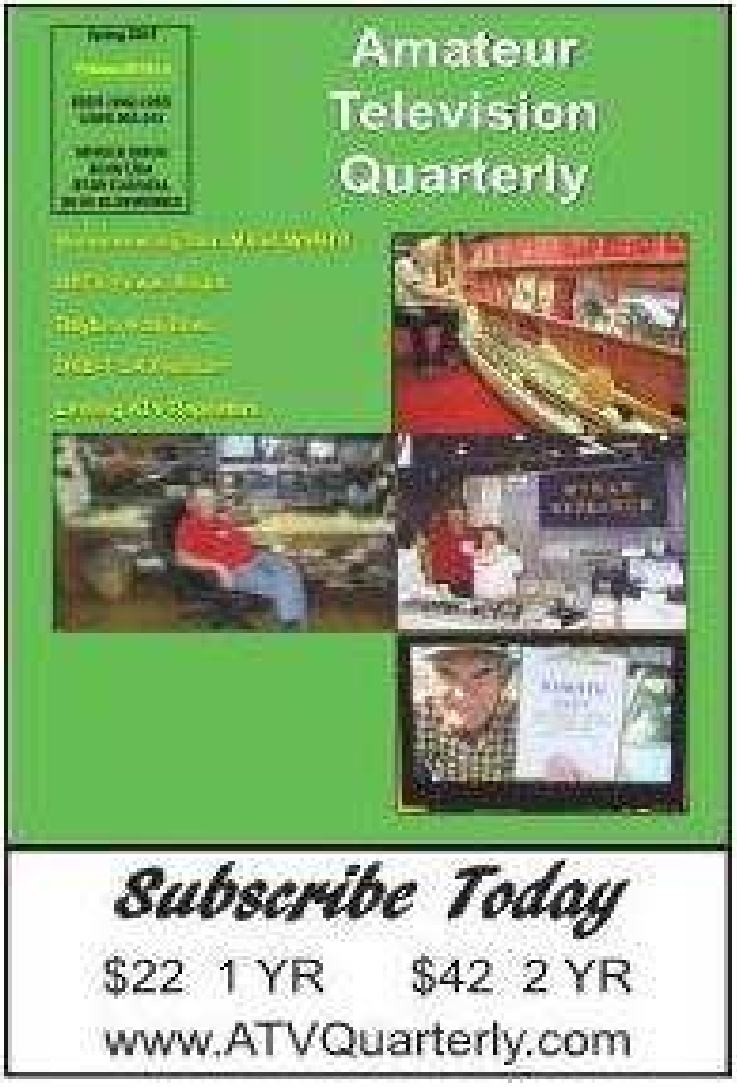
- A more affordable DATV exciter can now be ordered
- Fully assembled and tested PCBA
- DVB-S protocol for DATV (using QPSK modulation)
- Can operate all ham bands from 70 MHz-to-2450 MHz
- RF output level up to 10 dBm (min) all bands (DVB-S)
- Software Defined Radio (SDR) architecture allows many variations of IQ modulations
- "Software-Defined" allows new features to be added over the next few years, without changing the hardware board
- As extra bonus, the team has been able to get the board to transmit DVB-T 2K mode, however we cannot guarantee the performance of that protocol. Caveat Emptor!
- Requires PC running Ubuntu linux (see User Guide)
- Price is US$300 + shipping – order using PayPal

For more details and ordering

www.DATV-Express.com

register on the web site
to be able to see
the PURCHASE page





CONSTRUCTION ARTICLE INDEX

The following list is an index of all construction related material that has appeared in the ATCO Newsletter since its inception in the early '80's. This is a handy reference for that particular construction article that you knew existed but didn't want to wade through each issue to find it. All Newsletters below are also listed in order in the ATCO homepage under "Newsletters".CTRL Click on www.atco.tv. Once you locate the Newsletter section, the displayed list can then be re-sorted as needed by clicking on the "date" in the header.
…Bob N8OCQ

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Vol 2 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 IIII	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
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Vol 6 II	4,6,7	Microwave Oven ATV Xmiter
Vol 6 II	5	Matching a Quad Driven Ele
Vol 6 II	8	Power Divider for 33CM
Vol 9 IIII	5,7	16 Ele Loop Yagi for 439.25 MHz
Vol 10		No Articles
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Vol 12 I	6,7,8	439 & 1200 Horz Polarized Mobile Ant
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Vol 16 II	20	2.4 Gig Helix Ant
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Vol 22 IIII		No Articles
Vol 23 I		No Articles
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Vol 23 IIII		No Articles
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Vol 27 II	10	ATV Low Pass Filter (427 Mhz)
Vol 27 II	15	PictureTel Camera Data Cable Wiring
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Vol 27 IIII		No articles
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Vol 28 III		No articles
Vol 28 IIII		WB8LGA Antenna switching system
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Vol 29 II		1280 MHz Hi Gain Panel Antenna
Vol 29 III		No articles
Vol 29 IIII		No articles
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Vol 30 II		No articles
Vol 30 III		No articles
Vol 30 IIII		No articles

…WA8RMC

This is the complete list for construction articles shown in past ATCO newsletters. The page numbers listed may not match the actual page in the Newsletter. They are the numbers shown in the PDF file. Some early issues are missing. Art did not have a copy of every year. This list is complete through Volume 30 IIII.
…Bob N8OCQ

LOCAL HAMFEST SCHEDULE

This section is reserved for upcoming Hamfests. They are limited to Ohio and vicinity easily accessible in one day. Anyone aware of an event incorrectly or not listed here; notify me so it can be corrected. This list will be amended, as further information becomes available. To see additional details for each Hamfest, Control Click on the blue title and the magic of the Internet will give you the details complete with a map! To search the ARRL Hamfest database for more details, CTL click ARRLWeb: Hamfest and Convention Calendar .
…WA8RMC.

07/26/2015 | Portage Hamfair '15
Location: Randolph, OH
Type: ARRL Hamfest
Sponsor: Portage Amateur Radio Club
Website: http://hamfair.com

08/01/2015 | Great Lakes Divison Convention (Columbus Hamfest)
Location: Columbus, OH
Type: ARRL Convention
Sponsor: Voice of Aladdin ARC

08/16/2015 | Tailgate Swapmeet
Location: Cortland, OH
Type: ARRL Hamfest
Sponsor: Warren Amateur Radio Association
Website: http://www.w8vtd.org

08/23/2015 | Cuyahoga Falls ARC's 7th Annual Tailgate Hamfest
Location: Stow, OH
Type: ARRL Hamfest
Sponsor: Cuyahoga Falls Amateur Radio Club
Website: http://cfarc.org/tailgate2015.php

09/13/2015 | Findlay Hamfest
Location: **Findlay, OH**
Type: **ARRL Hamfest**
Sponsor: **Findlay Radio Club**
Website: http://www.findlayradioclub.or

09/19/2015 | OH-KY-IN ARS Hamfest
Location: Cincinnati, OH
Type: ARRL Hamfest
Sponsor: OH-KY-IN Amateur Radio Society
Website: http://www.ohkyin.org

09/27/2015 | Cleveland Hamfest and Computer Show
Location: Berea, OH
Type: ARRL Hamfest
Sponsor: Hamfest Association of Cleveland
Website: http://www.hac.org

10/18/2015 | Conneaut ARC's Ham Fest
Location: Conneaut, OH
Type: ARRL Hamfest
Sponsor: Conneaut Amateur Radio Club (W8BHZ)
Website: http://www.facebook.com/W8BHZ

10/25/2015 | Massillon ARC Hamfest
Location: Massillon, OH
Type: ARRL Hamfest
Sponsor: Massillon Amateur Radio Club
Website: http://www.w8np.org

01/24/2016 | Tusco ARC Hamfest
Location: Strasburg, OH
Type: ARRL Hamfest
Sponsor: Tusco Amateur Radio Club
Website: http://www.tuscoarc.org

TUESDAY NITE NET ON 147.48 MHz SIMPLEX

Every Tuesday night @ 9:00PM WA8RMC hosts a net for the purpose of ATV topic discussion. There is no need to belong to the club to participate, only a genuine interest in ATV. All are invited. For those who check in, the general rules are as follows: Out-of-town and video check-ins have priority. A list of available check-ins is taken first then a roundtable discussion is hosted by WA8RMC. After all participants have been heard, WA8RMC will give status and news if any followed by late check-in requests or comments. We usually chat for about ½ hour so please join us locally or via internet at www.BATC.tv then ATV repeaters thenWR8ATV.

ATCO TREASURER'S REPORT - de N8NT

OPENING BALANCE (4/16/15).....	$ 2022.13
RECEIPTS(dues).....	$ 80.00
Spring Event auction income.....	$ 101.00
PayPal fees.....	$ (0.59)
Spring Event food.....	$ (123.52)
Contest prize cost.....	$ (100.00)
CLOSING BALANCE ( ).....	$ 1979.02

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.

KB8EMD Larry Baker

ATCO REPEATER TECHNICAL DATA SUMMARY

Location:	Downtown Columbus, Ohio
Coordinates:	82 degrees 59 minutes 53 seconds (longitude) 39 degrees 57 minutes 45 seconds (latitude)
Elevation:	630 feet above the average street level (1460 feet above sea level)
TV Transmitters:	423.00 MHz DVB-T, 10 W cont, FEC=7/8, Guard=1/32, Const=QPSK, FFT=2K, BW=4MHz, PMT=4095, PCR=256, Video=256, audio=257 427.25 MHz Analog VSB AM, 50 watts average 100 watts sync tip (Analog TV on cable channel 58) 1258 MHz 40 watts FM analog 1268 MHz DVB-S QPSK 20W continuous. SR=3.125MS, FEC=3/4, PMT=32,Video=162,Teletext=304,PCR=133,Audio=88,Service =5004) 10.350 GHz: 1 watt continuous analog FM
Link transmitter:	446.350 MHz: 5 watts NBFM 5 kHz audio This input is used for control signals.
Identification:	423, 427, 1258, 1268 MHz, 10.350Ghz transmitters video identify every 10 min. with active video and information bulletin board every 30 minutes. 423 MHz digital, 1268 MHz digital & 10.350 GHz analog - Continuous transmission of ATCO & WR8ATV with no input signal present.
Transmit antennas:	423.00 MHz – 8 element Lindsay horizontally polarized 6dBd gain "omni" 427.25 MHz - Dual slot horizontally polarized 7 dBd gain "omni" major lobe east/west, 5dBd gain north/south 1258 MHz - Diamond vertically polarized 12 dBd gain omni 1268 MHz - Diamond vertically polarized 12 dBd gain omni 2397 MHz - Comet Model GP24 vertically polarized 12 dBd gain omni (Used for experimental Mesh Net operation) 10.350 GHz - Commercial 40 slot waveguide slot horizontally polarized 16 dBd gain omni
Receivers:	147.480 MHz - F1 audio input with touch tone control. (Input here = output on 446.350) 438.000 MHz - DVB-T QPSK, 2K BW. Receiver will auto configure for FEC's and PID's. (Input here = output on all TV transmitters) 439.250 MHz - A5 NTSC video with FM subcarrier audio, **lower sideband**. (Input here = output on all TV transmitters) 449.975 MHz - F1 audio input aux touch tone control. 131.8 Hz PL tone. (Input here = output on 446.350). 1288.00 MHz - F5 video analog NTSC. (Input here = output on all TV transmitters) 1288.00 MHz - DVB-S QPSK digital SR=4.167Msps, FEC=7/8. PIDs: PMT=133, PCR=33, Video=33, Audio=49 (Input here feeds all TV transmitters and also goes directly to 1268 MHz DVB-S digital output channel 2.) 2398.00 MHz - F5 video analog NTSC. (Input here = output on all TV transmitters) 10.450 GHz - F5 video analog NTSC. (Input here = output on all TV transmitters)
Receive antennas:	147.480 MHz - Vert. polar. Diamond 6dBd dual band (Shared with 446.350 MHz link output transmitter) 438.00/439.250 MHz - Horizontally polarized dual slot 7 dBd gain major lobe west (Shared with 438 & 439 receivers) 1288.00 MHz - Diamond vertically polarized 12 dBd gain omni (shared with analog and DVB-S receivers) 2398.00 MHz - Comet Model GP24 vertically polarized 12 dBd gain omni 10.450 GHz - Commercial 40 slot waveguide horizontally polarized 16 dBd gain omni

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

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

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

ATCO MEMBERS as of July 2015

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	Larry Meredith III	6070 Langton Circle	Westerville	OH	43082-8964	
N8ASB	Daun Yeagley	1353 Gurneyville Road	Willmington	OH	45177	
NN8B	Don Kemp	6384 Camp Blvd.	Hanoverton	OH	44423	
K9BIF	Charlie Short	PO Box 554	Goshen	IN	46527-0554	
WB8CJW	Dale Elshoff	8904 Winoak Pl	Powell	OH	43065	614-210-0551
N8COO	C Mark Cring	2844 Sussex Place Dr.	Grove City	OH	43123	614-836-2521
N1CTF	John Chartkoff	2288 Notingham Road	Upper Arlington	OH	43221	
N3DC	William Thompson	6327 Kilmer St	Cheverly	MD	20785	301-772-7382
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	614-405-1710
KB8EMD	Larry Baker	4330 Chippewa Trail	Jamestown	OH	45335-1210	
KC8EVR	Lester Broadie	108 N Burgess	Columbus	OH	43204	
N8FRT	Tom Flanagan	6156 Jolliff St.	Galloway	OH	43119	
W8FTX	George Biundo	3675 Inverary Drive	Columbus	OH	43228	614-274-7261
W8FZ	Fred Stutske	8737 Ashford Lane	Pickerington	OH	43147	
WA8HFK,KC8HIP	Frank & Pat Amore	P.O. Box 2252	Helendale	CA	92342	614-777-4621
W6HHC	Ken Konechy	340 S. Craig Dr.	Orange	CA	92869	
WA8HNS	Mike Gray	5029 St Rt 41 NW	Washington Ct Hs	OH	43160-8740	740-335-5133
N8HRC	John Hempstead	1190 County Road 9	Brellefontaine	OH	43311	
W4HTB	Henry Cantrell	905 Wrenwood Dr.	Bowling Green	KY	42103	270-781-9624
WB2IIR	Michael Anthony	370 Georgia Drive	Brick	NJ	08723	
K8KDR,KC8NKB	Matt & Nancy Gilbert	5167 Drumcliff Ct.	Columbus	OH	43221-5207	614-771-7259
W8KHP	Allan Vinegar	2043 Treetop Lane	Hebron	Ky	41048	
WA8KQQ	Dale Waymire	225 Riffle Ave	Greenville	OH	45331	937-548-2492
N8LRG	Phillip Humphries	30856 Coshocton Road	Walhonding	OH	43843	614-3543744
WB8LGA	Charles Beener	2540 State Route 61	Marengo	OH	43334	
W8MA	Phil Morrison	154 Llewellyn Ave	Westerville	OH	43081	
KA8MFD	Ross McCoy	227 S Boundary St PO Box 9	Edison	OH	43320	
KA8MID	Bill Dean	2630 Green Ridge Rd	Peebles	OH	45660	
N8NT	Bob Tournoux	3569 Oarlock Ct	Hilliard	OH	43026	614-876-2127
W8NX, KA8LTG	John & Linda Beal	5001 State Rt. 37 East	Delaware	OH	43015	740-369-5856
N0OBG	Jim Conley	33 Meadowbrook C C Est	Ballwin	MO	63011	
W6ORG,WB6YSS	Tom, Maryann O'Hara	2522 Paxson Lane	Arcadia	CA	91007-8537	626-447-4565
N8OCQ	Bob Hodge Sr.	3750 Dort Place	Columbus	OH	43227-2022	
KC8QJR	Adam Burley	931 West High Street	Mount Vernon	OH	43050	
KE8PN	James Easley	1507 Michigan Ave	Columbus	OH	43201	614-421-1492
WA8RMC	Art Towslee	438 Maplebrooke Dr W	Westerville	OH	43082	614-891-9273
W8RRJ,W8WTB	John Hull	580 E. Walnut St.	Westerville	OH	43081	614-882-6527
W8RUT,N8KCB	Ken & Chris Morris	2895 Sunbury Rd	Galina	OH	43021	
W8RVH	Richard Goode	9 Master Street Apt A	Springfield	OH	45504	937-478-6488
KB8RVI	David Jenkins	1941 Red Forest Lane	Galloway	OH	43119	614-853-0679
W8RWR	Bob Rector	135 S. Algonquin Ave	Columbus	OH	43204-1904	614-276-1689
W8RXX,KA8IWB	John & Laura Perone	3477 Africa Road	Galena	OH	43021	614-579-0522
WA6RZW	Ed Mersich	34401 Columbine Trl West	Elizabeth	CO	80107	
KB8SSH	Mike Cotts	3424 Homecroft Dr	Columbus	OH	43224	614-371-7380
WA6SVT	Mike Collis	PO Box 1594	Crestline	CA	92325	
W8TIP	Gene Hawkins	1720 Liberty Street	Toledo	OH	43605	
KD8TIZ	Bob Holden	5161 Goose Lane Rd	Alexandria	OH	43001-9730	614-562-8441
K8TPY, K8FRB	Jeff & Dianna Patton	3886 Agler Road	Columbus	OH	43219	
NR8TV	Dave Kibler	243 Dwyer Rd	Greenfield	OH	45123	937-981-1392
W8URI	William Heiden	5898 Township Rd #103	Mount Gilead	OH	43338	419-947-1121
KB8UWI	Milton McFarland	115 N. Walnut St.	New Castle	PA	16101	
WA8UZP,KD8YYP	James & Anna Reed	818 Northwest Blvd	Columbus	OH	43212	614-297-1328
KC8WRI	Tom Bloomer	PO Box 595	Grove City	OH	43123	
AA8XA	Stan Diggs	2825 Southridge Dr	Columbus	OH	43224-3011	
KB8YMQ	Jay Caldwell	4740 Timmons Dr	Plain City	OH	43064	
KC8YPD	Joe Ebright	3497 Ontario St	Columbus	OH	43224	
N8YZ	DaveTkach	2063 Torchwood Loop S	Columbus	OH	43229	614-882-0771
KA8ZNY,N8OOY	Tom & Cheryl Taft	386 Cherry Street	Groveport	OH	43125	614-202-9042

ATCO MEMBERSHIP INFORMATION

Membership in ATCO (Amateur Television in Central Ohio) is open to any licensed radio amateur who has an interest in amateur television. The annual dues are $10 per person payable on January 1 of each year. Additional members within an immediate family and at the same address are included at no extra cost.

ATCO publishes this Newsletter quarterly in January, April, July, and October. It is sent to each member without additional cost. All Newsletters are sent via Email unless the member does not have an internet connection.

The membership period is from January 1ST to December 31ST. New members joining before August will receive all ATCO Newsletters published during the current year prior to the date they join ATCO. For example, a new member joining in June will receive the January and April issues in addition to the July and October issues. For those joining after August 1ST, they can elect to receive a complementary October issue with the membership commencing the following year or get the previous (3) Newsletters. Your support of ATCO is welcomed and encouraged.

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

NOTE: Dues records on your individual portion of the ATCO website are listed as the date money is received and shows due one year from that date. The actual expiration is on January of the following year 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:	Mark Cring N8COO	Statutory agent:	Tom Bloomer KC8WRI
Corporate trustees:	Same as officers	Newsletter editor:	Art Towslee WA8RMC

ATCO MEMBERSHIP APPLICATION

RENEWAL O NEW MEMBER O DATE _____
CALL _____
OK TO PUBLISH PHONE # IN NEWSLETTER YES O NO O
HOME PHONE _____
NAME_____
INTERNET Email ADDRESS_____
ADDRESS _____
CITY _____ STATE _____ ZIP _____-_____
FCC LICENSED OPERATORS IN THE IMMEDIATE FAMILY
_____
COMMENTS_____
_____
_____
ANNUAL DUES PAYMENT OF $10.00 ENCLOSED CHECK O MONEY ORDER O

Make check payable to ATCO or Bob Tournoux & mail to: Bob Tournoux N8NT 3569 Oarlock CT Hilliard, Ohio 43026. Or, if you prefer, pay dues via the Internet with your credit card. Go to www.atco.tv 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. W
Westerville, Ohio 43082

FIRST CLASS MAIL

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